
2013 – 1st Quarter Report
Support for Conducting Systems &
Performance Audits of CASTNET Sites and
NADP Monitoring Stations

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Prepared for:

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List of Acronyms and Abbreviations

% diff	percent difference
A/D	analog to digital converter
ARS	Air Resource Specialist, Inc.
ASTM	American Society for Testing and Materials
CASTNET	Clean Air Status and Trends Network
DAS	data acquisition system
DC	direct current
deg	degree
DVM	digital voltmeter
EEMS	Environmental, Engineering & Measurement Services, Inc.
EPA	U.S. Environmental Protection Agency
ESC	Environmental Systems Corporation
FSAD	Field Site Audit Database
GPS	geographical positioning system
lpm	liters per minute
MLM	Multilayer Model
m/s	meters per second
mv	milivolt
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
QAPP	Quality Assurance Project Plan
SOP	standard operating procedure
TEI	Thermo Environmental Instruments
USNO	United States Naval Observatory
V	volts
WRR	World Radiation Reference

1.0 CASTNET Quarterly Report

1.1 Introduction

The Clean Air Status and Trends Network (CASTNET) is a national air monitoring program developed under mandate of the 1990 Clean Air Act Amendments. Each site in the network measures acidic gases and particles and other forms of atmospheric pollution using a continuous collection filter aggregated over a one week period. Hourly averages of surface ozone concentrations and selected meteorological variables are also measured.

Site measurements are used to estimate deposition rates of the various pollutants with the objective of determining relationships between emissions, air quality, deposition, and ecological effects. In conjunction with other national monitoring networks, CASTNET data are used to determine the effectiveness of national emissions control programs and to assess temporal trends and spatial deposition patterns in atmospheric pollutants. CASTNET data are also used for long-range transport model evaluations and effects research.

CASTNET pollutant flux estimates are calculated as the aggregate product of weekly measured chemical concentrations and model-estimated deposition velocities. Currently, the National Oceanic and Atmospheric Administration's multilayer inferential model (NOAA-MLM) described by Meyers et al. [1998] is used to derive deposition velocity estimates.

As of January 2012, the network is comprised of 82 active rural sampling sites across the United States and Canada, cooperatively operated by the Environmental Protection Agency (EPA), the National Park Service (NPS), Environment Canada, and several independent partners. AMEC is responsible for operating the EPA and Environment Canada sponsored sites, and Air Resource Specialist, Inc. (ARS) is responsible for operating the NPS sponsored sites.

1.2 Project Objectives

The objectives of this project are to establish an independent and unbiased program of performance and systems audits for all CASTNET sampling sites. Ongoing Quality Assurance (QA) programs are an essential part of any long-term monitoring network.

Performance audits verify that all evaluated variables are consistent with the accuracy goals as defined in the CASTNET Quality Assurance Project Plan (QAPP). The parameter specific

accuracy goals are presented in Table 1. Only four EPA sponsored sites continue to operate meteorological sensors. Those sites are BEL116, BVL30, CHE185, and PAL190.

Table 1. Performance Audit Challenge and Acceptance Criteria

Sensor	Parameter	Audit Challenge	Acceptance Criteria
Precipitation	Response	10 manual tips	1 DAS count per tip
Precipitation	Accuracy	2 introductions of known amounts of water	$\leq \pm 10.0\%$ of input amount
Relative Humidity	Accuracy	Compared to reference instrument or standard solution	$\leq \pm 10.0\%$ RH
Solar Radiation	Accuracy	Compared to WRR traceable standard	$\leq \pm 10.0\%$ of daytime average
Surface Wetness	Response	Distilled water spray mist	Positive response
Surface Wetness	Sensitivity	1% decade resistance	N/A
Temperature	Accuracy	Comparison to 3 NIST measured baths (~ 0° C, ambient, ~ full-scale)	$\leq \pm 0.5^\circ$ C
Temperature Difference	Accuracy	Comparison to station temperature sensor	$\leq \pm 0.50^\circ$ C
Wind Direction	Orientation Accuracy	Parallel to alignment rod/crossarm, or sighted to distant point	$\leq \pm 5^\circ$ from degrees true
Wind Direction	Linearity	Eight cardinal points on test fixture	$\leq \pm 5^\circ$ mean absolute error
Wind Direction	Response Threshold	Starting torque tested with torque gauge	< 10 g-cm Climatronics; < 20 g-cm R.M. Young
Wind Speed	Accuracy	Shaft rotational speed generated and measured with certified synchronous motor	$\leq \pm 0.5$ mps below 5.0 mps input; $\leq \pm 5.0\%$ of input at or above 5.0 mps
Wind Speed	Starting Threshold	Starting torque tested with torque gauge	< 0.5 g-cm
Mass Flow Controller	Flow Rate	Comparison with Primary Standard	$\leq \pm 5.0\%$ of designated rate
Ozone	Slope	Linear regression of multi-point test gas concentration as measured with a certified transfer standard	$0.9000 \leq m \leq 1.1000$
Ozone	Intercept		$-5.0 \text{ ppb} \leq b \leq 5.0 \text{ ppb}$
Ozone	Correlation Coefficient		$0.9950 \leq r$
DAS	Accuracy	Comparison with certified standard	$\leq \pm 0.003$ VDC

Performance audits are conducted using standards that are traceable to the National Institute of Standards and Technology (NIST), or another authoritative organization, and certified as current.

Site systems audits are intended to provide a qualitative appraisal of the total measurement system. Site planning, organization, and operation are evaluated to ensure that good Quality Assurance/Quality Control (QA/QC) practices are being applied. At a minimum the following audit issues were addressed at each site systems audit:

- Site locations and configurations match those provided in the CASTNET QAPP.
- Meteorological instruments are in good physical and operational condition and are sited to meet EPA ambient monitoring guidelines (EPA-600/4-82-060).
- Sites are accessible, orderly, and if applicable, compliant with OSHA safety standards.
- Sampling lines are free of leaks, kinks, visible contamination, weathering, and moisture.
- Site shelters provide adequate temperature control.
- All ambient air quality instruments are functional, being operated in the appropriate range, and the zero air supply desiccant is unsaturated.
- All instruments are in current calibration.
- Site documentation (maintenance schedules, on-site SOPs, etc.) is current and log book records are complete.
- All maintenance and on-site SOPs are performed on schedule.
- Corrective actions are documented and appropriate for required maintenance/repair activity.
- Site operators demonstrate an adequate knowledge and ability to perform required site activities, including documentation and maintenance activities.

1.3 Sites Visited First Quarter 2013

This report consists of the systems and performance audit results from the CASTNET sites audited during the first quarter (January through March) of 2013. The locations and dates of the audits are presented in Table 2.

Table 2. Site Audit Visits

Site ID	Audit Type	Sponsor	Site Location	Visit dates
CVL151	Audit w/o met	EPA	Coffeenville	2/13/2013
CAD150	Audit w/o met	EPA	Caddo Valley	2/14/2013
ALC188	Audit w/o met	EPA	Alabama-Coushatta	2/15/2013

Site ID	Audit Type	Sponsor	Site Location	Visit dates
MAC426	Audit with met	NPS	Mammoth Cave NP	3/1/2013
CHE185	Audit with met	EPA	Cherokee Nation	3/3/2013
CDZ171	Audit w/o met	EPA	Cadiz	3/5/2013
MCK131	Audit w/o met	EPA	Mackville	3/6/2013
MCK231	Audit w/o met	EPA	Mackville (precision site)	3/6/2013
BBE401	Audit with met	NPS	Big Bend NP	3/6/2013
PAL190	Audit with met	EPA	Palo Duro	3/7/2013
CKT136	Audit w/o met	EPA	Crockett	3/9/2013

In addition to the sites listed in Table 2. that were visited for complete audits, the sites listed in Table 3. were visited to conduct Through-The-Probe (TTP) ozone Performance Evaluations (PE).

Table 3. Site Ozone PE Visits

Site ID	Sponsor Agency	Site Location	Visit dates
SUM156	EPA	Sumatra	2/17/2013
IRL141	EPA	Indian River Lagoon	2/20/2013
GAS153	EPA	Georgia Station	2/28/2013
SND152	EPA	Sand Mountain	2/28/2013
COW137	EPA	Coweeta	3/29/2013
ESP127	EPA	Edgar Evins St. Park	3/30/2013
SPD111	EPA	Speedwell	3/30/2013

1.4 Audit Results

The observations and results of the systems and performance audits are included in Appendix A, *Audit Report Forms* by site, arranged by audit date.

One kilometer, five kilometer, and forty kilometer radius maps are only included for those sites not previously audited. Other photographs of site conditions are included within each systems report where necessary.

Copies of the spot reports that were sent immediately following the audit of each site are included as Appendix B, *Site Spot Report Forms*.

The Ozone PE results and observations are included in Appendix C, *Ozone Performance Evaluation Forms*.

2.0 NADP Quarterly Report

2.1 Introduction

The National Atmospheric Deposition Program (NADP) operates three precipitation chemistry networks and two atmospheric concentration networks. The National Trends Network (NTN) has been measuring acidic precipitation since 1978. The network currently has more than 200 sites. The Atmospheric Integrated Research Monitoring Network (AIRMoN) began operation in 1992 and currently measures event based precipitation events at 7 sites. The Mercury Deposition Network (MDN) measures total mercury in precipitation samples from more than 100 stations. The MDN began operation in 1996 and includes sites throughout the US and Canada. The Atmospheric Mercury Network (AMNet) and the Ammonia Monitoring Network (AMoN) measure ambient concentrations of mercury and ammonia, respectively.

The NADP and other long-term monitoring networks provide critical information to the EPA regarding evaluating the effectiveness of emission reduction control programs from the power industry.

The NADP Program Office operates and administers the three precipitation chemistry networks (NTN, MDN and AIRMoN), two atmospheric concentration networks (AMNet and AMoN), two analytical laboratories (the Central Analytical Laboratory (CAL) located at the University of Illinois/Illinois State Water Survey and the Mercury Analytical Laboratory (HAL) located at Frontier Global Sciences), and the network equipment depot (NED).

2.2 Project Objectives

The objective of this project is to perform independent and unbiased evaluations of the sites along with its operations. These evaluations provide quality assurance pertaining to siting, sample collection and handling, equipment operation and maintenance, record keeping and field laboratory procedures.

More specifically, the surveys determine and report findings based on an established methodology consisting of completing a site questionnaire, testing the equipment and documenting with photographs the location, siting criteria, existing equipment, and any issues encountered that require such documentation.

2.3 Sites Visited First Quarter 2013

This report covers the results from the NADP sites surveyed during the first quarter (January through March) of 2013. The station name and dates of the audits are presented in Table 4.

Table 4. Sites Surveyed – First Quarter 2013

Side ID	Network	Survey Date	Station Name
FL03	NTN	2/4/2013	Bradford Forest
FL05	MDN/NTN	2/5/2013	Chassahowitzka National Wildlife Refuge
FL11	MDN/NTN/AMoN	2/20/2013	Everglades National Park-Research Center
FL14	NTN	2/12/2013	Quincy
FL23	NTN	2/17/2013	Sumatra
FL34	MDN	2/19/2013	Everglades Nutrient Removal Project
FL41	NTN	2/18/2013	Verna Well Field
FL97	MDN	2/19/2013	Everglades-Western Broward County
FL99	NTN	3/21/2013	Kennedy Space Center
GA20	NTN	3/19/2013	Claxton
KY03	NTN/AMoN	3/7/2013	Mackville
KY10	MDN/NTN	3/1/2013	Mammoth Cave National Park-Houchin Meadow
KY19	NTN	3/6/2013	Seneca Park
KY22	NTN	3/8/2013	Lilley Cornett Woods
KY99	NTN	3/5/2013	Mulberry Flat
MS12	MDN/NTN	2/12/2013	Grand Bay NERR
OK22	MDN	3/4/2013	Miami
PR20	NTN	2/12/2013	El Verde
TN04	NTN	3/30/2013	Speedwell
TN14	NTN	3/29/2013	Hatchie National Wildlife Refuge
VI01	NTN	2/13/2013	Virgin Islands National Park-Lind Point

2.4 Survey Results

Site survey results are entered into a relational database. The database in turn generates Site Spot Reports which are distributed among the interested parties as soon as all the site data has been entered. Database tables with all the data collected and reviewed are then sent to the NADP Program Office and to the U.S. EPA Project Officers.

Other items gathered during the surveys (i.e., photographs, Belfort charts, etc.) are uploaded to EEMS' server where the NADP PO and the U.S. EPA POs can access them and download them as needed by login into the server site.

Given the volume of data generated, and the fact that data is distributed and/or is available through EEMS' server, no survey results are included in this report.

APPENDIX A

CASTNET Audit Report Forms

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>CVL151-Sandy Grenville-02/13/2013</i>						
1	2/13/2013	Computer	Dell	000477	D630	unknown
2	2/13/2013	DAS	Campbell	000410	CR3000	2508
3	2/13/2013	Elevation	Elevation	None	1	None
4	2/13/2013	Filter pack flow pump	Thomas	04282	107CAB18B	129800010140
5	2/13/2013	flow rate	Tylan	03867	FC280SAV	AW9508046
6	2/13/2013	Infrastructure	Infrastructure	none	none	none
7	2/13/2013	MFC power supply	Tylan	03410	RO-32	FP9403012
8	2/13/2013	Modem	Raven	06462	V42221	0808338333
9	2/13/2013	Ozone	ThermoElectron Inc	000698	49i A1NAA	1030244797
10	2/13/2013	Ozone Standard	ThermoElectron Inc	000440	49i A3NAA	CM08200016
11	2/13/2013	Sample Tower	Aluma Tower	03540	A	none
12	2/13/2013	Shelter Temperature	Campbell	none	107-L	none
13	2/13/2013	Siting Criteria	Siting Criteria	None	1	None
14	2/13/2013	Temperature	Climatronics	06668	100093	none
15	2/13/2013	Zero air pump	Werther International	06884	PC70/4	000815263

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2508	CVL151	Sandy Grenville	02/13/2013	DAS	Primary

Das Date:	<input type="text" value="2 /13/2013"/>	Audit Date	<input type="text" value="2 /13/2013"/>
Das Time:	<input type="text" value="13:30:00"/>	Audit Time	<input type="text" value="13:30:00"/>
Das Day:	<input type="text" value="44"/>	Audit Day	<input type="text" value="44"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0001"/>	<input type="text" value="0.0002"/>	<input type="text" value="0.0001"/>	<input type="text" value="0.0002"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	0.0000	0.0000	V	V	0.0000
7	0.1000	0.0999	0.0999	V	V	0.0000
7	0.3000	0.2998	0.2998	V	V	0.0000
7	0.5000	0.4997	0.4997	V	V	0.0000
7	0.7000	0.6997	0.6995	V	V	-0.0002
7	0.9000	0.8995	0.8994	V	V	-0.0001
7	1.0000	0.9995	0.9993	V	V	-0.0002

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Tylan	AW9508046		CVL151	Sandy Grenville	02/13/2013	flow rate	03867

Mfg	Tylan
SN/Owner ID	FP9403012 03410
Parameter	MFC power supply

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
1.53%	1.70%
A Avg %Dif	A Max % Di

Cal Factor Zero	0.13
Cal Factor Full Scale	1.23
Rotometer Reading:	1.4

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	-0.17	-0.145	-0.03	l/m	l/m	
primary	leak check	0.000	0.000	-0.17	-0.141	-0.02	l/m	l/m	
primary	test pt 1	1.492	1.520	1.24	1.248	1.50	l/m	l/m	-1.32%
primary	test pt 2	1.494	1.524	1.24	1.248	1.50	l/m	l/m	-1.57%
primary	test pt 3	1.496	1.526	1.24	1.247	1.50	l/m	l/m	-1.70%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	360	Status	pass
Sensor Component	Filter Depth	Condition	1.0 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	See comments	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	6.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244797		CVL151	Sandy Grenville	02/13/2013	Ozone	000698

Slope:	1.00458	Slope:	0.00000
Intercept	-0.04842	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg % Dif
A Max % Di	A Max % Di
0.5%	0.6%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.01	0.19	0.02	ppb	
primary	2	44.91	45.03	45.25	ppb	0.49%
primary	3	66.32	66.42	66.81	ppb	0.59%
primary	4	84.44	84.52	85.00	ppb	0.57%
primary	5	109.81	109.86	110.10	ppb	0.22%

Sensor Component	Cell B Noise	Condition	1.1 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.3	Status	pass
Sensor Component	Span	Condition	1.020	Status	pass
Sensor Component	Cell B Freq.	Condition	98.1 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.71 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	26.2 C	Status	pass
Sensor Component	Cell A Pressure	Condition	727 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	1.0 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	93.6 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	none		CVL151	Sandy Grenville	02/13/2013	Temperature	06668

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.16	0.38		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.02	0.06	0.000	0.0	C	-0.07
primary	Temp Mid Range	25.39	25.36	0.000	25.4	C	0.03
primary	Temp High Range	48.08	47.96	0.000	47.6	C	-0.38

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	Functioning	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8810"/>	<input type="text" value="640 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Poor"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	CVL151	Sandy Grenville	02/13/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.06	0.10		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	16.14	16.15	0.000	16.3	C	0.1
primary	Temp Mid Range	16.04	16.05	0.000	16.0	C	-0.04
primary	Temp Mid Range	15.88	15.90	0.000	16.0	C	0.05

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Flow Rate	CVL151	Sandy Grenville	02/13/2013	Moisture Present	Tylan	1204	<input type="checkbox"/>	<input type="checkbox"/>
The filter sample tubing has drops of moisture in low sections outside the shelter.								

Field Systems Comments

1 Parameter: DocumentationCo

The site operations manual does not apply to the currently installed instrumentation.

2 Parameter: SitingCriteriaCom

The site is located in a Pine forest on USFS managed land. The tree line has been cut back to at least 17 meters from the site.

3 Parameter: ShelterCleanNotes

The shelter is somewhat cluttered. The floor and lower walls are beginning to rot.

Field Systems Data Form

F-02058-1500-S1-rev001

Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Coker Lake"/>
Operating Group	<input type="text" value="Private - USFS"/>	Map Scale	<input type="text"/>
AQS #	<input type="text"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="Climatronics"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text" value="34.0028"/>
Deposition Measurement	<input type="text" value="dry, wet"/>	QAPP Longitude	<input type="text" value="-89.7989"/>
Land Use	<input type="text" value="woodland - evergreen"/>	QAPP Elevation Meters	<input type="text" value="134"/>
Terrain	<input type="text" value="rolling"/>	QAPP Declination	<input type="text" value="0.2"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text" value="2/22/2006"/>
Site Telephone	<input type="text" value="(662) 623-7334"/>	Audit Latitude	<input type="text" value="34.002747"/>
Site Address 1	<input type="text" value="Forest Road 809"/>	Audit Longitude	<input type="text" value="-89.799183"/>
Site Address 2	<input type="text" value="Tombigbee National Forest"/>	Audit Elevation	<input type="text" value="138"/>
County	<input type="text" value="Yalobusha"/>	Audit Declination	<input type="text" value="-0.95"/>
City, State	<input type="text" value="Tillatoba, MS"/>		
Zip Code	<input type="text" value="38961"/>	Present	
Time Zone	<input type="text" value="Central"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="No inspection date"/>
Primary Operator	<input type="text" value="Gail Thompson"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(662) 675-8187"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="gtpworksite@yahoo.com"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="none"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text"/>	Security Fence <input type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
		Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>

Shelter Working Room Make Model Shelter Size

Shelter Clean Notes

Site OK Notes

Driving Directions

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO ₂ or NO _x	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	17 m	<input type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

The site is located in a Pine forest on USFS managed land. The tree line has been cut back to at least 17 meters from the site.

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

- | | | | |
|---|--|-------------------------------------|------------------|
| 1 | Do all the meteorological sensors appear to be intact, in good condition, and well maintained? | <input checked="" type="checkbox"/> | Temperature only |
| 2 | Are all the meteorological sensors operational online, and reporting data? | <input checked="" type="checkbox"/> | Temperature only |
| 3 | Are the shields for the temperature and RH sensors clean? | <input checked="" type="checkbox"/> | |
| 4 | Are the aspirated motors working? | <input checked="" type="checkbox"/> | |
| 5 | Is the solar radiation sensor's lens clean and free of scratches? | <input checked="" type="checkbox"/> | N/A |
| 6 | Is the surface wetness sensor grid clean and undamaged? | <input checked="" type="checkbox"/> | N/A |
| 7 | Are the sensor signal and power cables intact, in good condition, and well maintained? | <input checked="" type="checkbox"/> | |
| 8 | Are the sensor signal and power cable connections protected from the elements and well maintained? | <input checked="" type="checkbox"/> | |

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	Climatronics	100093	none	06668

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees? 17 meters

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 12 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions? Moisture in tubing only
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	A	none	03540
Ozone	ThermoElectron Inc	49i A1NAA	1030244797	000698
Filter pack flow pump	Thomas	107CAB18B	129800010140	04282
MFC power supply	Tylan	RO-32	FP9403012	03410
Zero air pump	Werther International	PC70/4	000815263	06884

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Stable	Grounded
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D630	unknown	000477
DAS	Campbell	CR3000	2508	000410
Modem	Raven	V42221	0808338333	06462

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID Technician Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	June 2007	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2001	<input type="checkbox"/>
Field Ops Manual	<input checked="" type="checkbox"/>	July 1990	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current? Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The site operations manual does not apply to the currently installed instrumentation.

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID Technician Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID Technician Site Visit Date

Site operation procedures

- | | | | |
|---|--|-------------------------------------|---------------------------|
| 1 | Is the filter pack being changed every Tuesday as scheduled? | <input checked="" type="checkbox"/> | Filter changed afternoons |
| 2 | Are the Site Status Report Forms being completed and filed correctly? | <input checked="" type="checkbox"/> | |
| 3 | Are data downloads and backups being performed as scheduled? | <input type="checkbox"/> | No longer required |
| 4 | Are general observations being made and recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook |
| 5 | Are site supplies on-hand and replenished in a timely fashion? | <input checked="" type="checkbox"/> | |
| 6 | Are sample flow rates recorded? How? | <input checked="" type="checkbox"/> | SSRF, call-in |
| 7 | Are samples sent to the lab on a regular schedule in a timely fashion? | <input checked="" type="checkbox"/> | |
| 8 | Are filters protected from contamination during handling and shipping? How? | <input checked="" type="checkbox"/> | Clean gloves on and off |
| 9 | Are the site conditions reported regularly to the field operations manager or staff? | <input checked="" type="checkbox"/> | |

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>CAD150-Sandy Grenville-02/14/2013</i>						
1	2/14/2013	Computer	Dell	000306	D520	unknown
2	2/14/2013	DAS	Campbell	000421	CR3000	2530
3	2/14/2013	Elevation	Elevation	None	1	None
4	2/14/2013	Filter pack flow pump	Thomas	00462	107CA110	09883403-01-4
5	2/14/2013	flow rate	Tylan	000090	FC280SAV	AW99013048
6	2/14/2013	Infrastructure	Infrastructure	none	none	none
7	2/14/2013	MFC power supply	Teledyne	01517	CPR-1A	149
8	2/14/2013	Modem	Raven	06515	NL115	3875
9	2/14/2013	Ozone	ThermoElectron Inc	000624	49i A1NAA	1009241792
10	2/14/2013	Ozone Standard	ThermoElectron Inc	000364	49i A3NAA	0726124687
11	2/14/2013	Sample Tower	Aluma Tower	03538	A	none
12	2/14/2013	Shelter Temperature	Campbell	none	107-L	none
13	2/14/2013	Siting Criteria	Siting Criteria	None	1	None
14	2/14/2013	Temperature	Climatronics	06648	100093	none
15	2/14/2013	Zero air pump	Werther International	06885	C 70/4	000814270

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2530	CAD150	Sandy Grenville	02/14/2013	DAS	Primary

Das Date:	<input type="text" value="2/14/2013"/>	Audit Date:	<input type="text" value="2/14/2013"/>
Das Time:	<input type="text" value="12:26:14"/>	Audit Time:	<input type="text" value="12:26:11"/>
Das Day:	<input type="text" value="45"/>	Audit Day:	<input type="text" value="45"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0002"/>	<input type="text" value="0.0004"/>	<input type="text" value="0.0002"/>	<input type="text" value="0.0004"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	-0.0001	0.0000	V	V	0.0001
7	0.1000	0.0998	0.1000	V	V	0.0002
7	0.3000	0.2997	0.2993	V	V	-0.0004
7	0.5000	0.4996	0.4998	V	V	0.0002
7	0.7000	0.6995	0.6997	V	V	0.0002
7	0.9000	0.8994	0.8996	V	V	0.0002
7	1.0000	0.9993	0.9996	V	V	0.0003

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Tylan	AW99013048		CAD150	Sandy Grenville	02/14/2013	flow rate	000090

Mfg	Teledyne	
SN/Owner ID	149	01517
Parameter	MFC power supply	

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
2.02%	2.15%

Cal Factor Zero	0.12
Cal Factor Full Scale	1.21
Rotometer Reading:	1.35

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	-0.26	0.127	-0.02	l/m	l/m	
primary	leak check	0.000	0.000	-0.25	0.121	-0.01	l/m	l/m	
primary	test pt 1	1.506	1.530	2.54	1.270	1.50	l/m	l/m	-1.96%
primary	test pt 2	1.509	1.533	2.54	1.268	1.50	l/m	l/m	-2.15%
primary	test pt 3	1.509	1.530	2.54	1.268	1.50	l/m	l/m	-1.96%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	290 deg	Status	pass
Sensor Component	Filter Depth	Condition	1.5 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	5.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241792		CAD150	Sandy Grenville	02/14/2013	Ozone	000624

Slope:	0.98806	Slope:	0.00000
Intercept	0.40998	Intercept	0.00000
CorrCoff	0.99997	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
0.8%	1.1%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.02	0.20	0.94	ppb	
primary	2	46.73	46.85	46.36	ppb	-1.05%
primary	3	66.60	66.70	66.05	ppb	-0.97%
primary	4	85.16	85.24	84.50	ppb	-0.87%
primary	5	110.77	110.81	110.30	ppb	-0.46%

Sensor Component	Cell B Noise	Condition	1.3 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.02	Status	pass
Sensor Component	Span	Condition	1.021	Status	pass
Sensor Component	Cell B Freq.	Condition	82.8 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.75 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	32.7 C	Status	pass
Sensor Component	Cell A Pressure	Condition	737 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	84.9 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.75 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	none		CAD150	Sandy Grenville	02/14/2013	Temperature	06648

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.08	0.13		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	0.23	0.31	0.000	0.2	C	-0.13
primary	Temp Mid Range	25.24	25.22	0.000	25.3	C	0.1
primary	Temp High Range	46.33	46.21	0.000	46.2	C	-0.02

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	Functioning	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8810"/>	<input type="text" value="640 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	CAD150	Sandy Grenville	02/14/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.07	0.14		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	21.81	21.80	0.000	21.9	C	0.06
primary	Temp Mid Range	21.89	21.88	0.000	21.9	C	0
primary	Temp Mid Range	22.68	22.67	0.000	22.5	C	-0.14

Field Systems Comments

1 Parameter: SiteOpsProcedures

The ozone analyzer sample train is leak checked by capping the inlet every two weeks.

2 Parameter: ShelterCleanNotes

The bottom of the shelter walls are very badly deteriorated. The floor and ceiling have been repaired.

3 Parameter: PollAnalyzerCom

Both the filter pack flow tubing and ozone sample line fold tightly against the tower hinge when the tower is lowered. This could eventually cause damage to the tubing.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Caddo Valley"/>
Operating Group	<input type="text" value="Ouachita Baptist University"/>	Map Scale	<input type="text"/>
AQS #	<input type="text"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="Climatronics"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text" value="34.1792"/>
Deposition Measurement	<input type="text" value="dry, wet"/>	QAPP Longitude	<input type="text" value="-93.0989"/>
Land Use	<input type="text" value="woodland - mixed"/>	QAPP Elevation Meters	<input type="text" value="71"/>
Terrain	<input type="text" value="gently rolling"/>	QAPP Declination	<input type="text" value="2.3"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text" value="12/28/2004"/>
Site Telephone	<input type="text" value="(870) 246-0030"/>	Audit Latitude	<input type="text" value="34.179278"/>
Site Address 1	<input type="text" value="DeGray Regulating Dam"/>	Audit Longitude	<input type="text" value="-93.098755"/>
Site Address 2	<input type="text" value="Route 390"/>	Audit Elevation	<input type="text" value="78"/>
County	<input type="text" value="Clark"/>	Audit Declination	<input type="text" value="1.3"/>
City, State	<input type="text" value="Arkadelphia, AR"/>		
Zip Code	<input type="text" value="71923"/>	Present	
Time Zone	<input type="text" value="Central"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="No inspection date"/>
Primary Operator	<input type="text" value="Harell Beckwith"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(870) 245-5239"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="beckwithh@obu.edu"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Clark Kuyper"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text"/>	Security Fence <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
		Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="Ekto"/>	Model <input type="text" value="8810"/>	Shelter Size <input type="text" value="640 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes	<input type="text" value="The bottom of the shelter walls are very badly deteriorated. The floor and ceiling have been repaired."/>	
Site OK <input checked="" type="checkbox"/>	Notes	<input type="text"/>	

Driving Directions

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

1	Do all the meteorological sensors appear to be intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	<input checked="" type="checkbox"/>	Temperature only
3	Are the shields for the temperature and RH sensors clean?	<input checked="" type="checkbox"/>	
4	Are the aspirated motors working?	<input checked="" type="checkbox"/>	
5	Is the solar radiation sensor's lens clean and free of scratches?	<input checked="" type="checkbox"/>	N/A
6	Is the surface wetness sensor grid clean and undamaged?	<input checked="" type="checkbox"/>	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	N/A
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	<input checked="" type="checkbox"/>	N/A

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	Climatronics	100093	none	06648

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 12 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	A	none	03538
MFC power supply	Teledyne	CPR-1A	149	01517
Ozone	ThermoElectron Inc	49i A1NAA	1009241792	000624
Filter pack flow pump	Thomas	107CA110	09883403-01-4	00462
Zero air pump	Werther International	C 70/4	000814270	06885

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Both the filter pack flow tubing and ozone sample line fold tightly against the tower hinge when the tower is lowered. This could eventually cause damage to the tubing.

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D520	unknown	000306
DAS	Campbell	CR3000	2530	000421
Modem	Raven	NL115	3875	06515

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2009	<input checked="" type="checkbox"/>
Field Ops Manual	<input checked="" type="checkbox"/>	July 1990	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID Technician Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID Technician Site Visit Date

Site operation procedures

- | | | | |
|---|--|-------------------------------------|--------------------------|
| 1 | Is the filter pack being changed every Tuesday as scheduled? | <input checked="" type="checkbox"/> | Filter changed morinings |
| 2 | Are the Site Status Report Forms being completed and filed correctly? | <input checked="" type="checkbox"/> | |
| 3 | Are data downloads and backups being performed as scheduled? | <input type="checkbox"/> | No longer required |
| 4 | Are general observations being made and recorded? How? | <input checked="" type="checkbox"/> | SSRF |
| 5 | Are site supplies on-hand and replenished in a timely fashion? | <input checked="" type="checkbox"/> | |
| 6 | Are sample flow rates recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook, call-in |
| 7 | Are samples sent to the lab on a regular schedule in a timely fashion? | <input checked="" type="checkbox"/> | |
| 8 | Are filters protected from contamination during handling and shipping? How? | <input checked="" type="checkbox"/> | One set of gloves only |
| 9 | Are the site conditions reported regularly to the field operations manager or staff? | <input checked="" type="checkbox"/> | |

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>ALC188-Sandy Grenville-02/15/2013</i>						
1	2/15/2013	DAS	Campbell	000422	CR3000	2523
2	2/15/2013	Elevation	Elevation	None	1	None
3	2/15/2013	Filter pack flow pump	Thomas	01040	107CA110	000010887
4	2/15/2013	Flow Rate	Apex	000684	AXMC105LPMDCV	54761
5	2/15/2013	Infrastructure	Infrastructure	none	none	none
6	2/15/2013	Modem	Raven	06583	H4223-C	08443555843
7	2/15/2013	Ozone	ThermoElectron Inc	000689	49i A1NAA	1030244802
8	2/15/2013	Ozone Standard	ThermoElectron Inc	000363	49i A3NAA	0726124691
9	2/15/2013	Sample Tower	Aluma Tower	000136	B	none
10	2/15/2013	Shelter Temperature	Campbell	none	107-L	none
11	2/15/2013	Siting Criteria	Siting Criteria	None	1	None
12	2/15/2013	Temperature	RM Young	02997	41342VC	missing
13	2/15/2013	UPS	APC	06794	RS900	unknown
14	2/15/2013	Zero air pump	Werther International	06940	C 70/4	000821897

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2523	ALC188	Sandy Grenville	02/15/2013	DAS	Primary

Das Date:	<input type="text" value="2/15/2013"/>	Audit Date:	<input type="text" value="2/15/2013"/>
Das Time:	<input type="text" value="11:05:17"/>	Audit Time:	<input type="text" value="11:05:17"/>
Das Day:	<input type="text" value="46"/>	Audit Day:	<input type="text" value="46"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0001"/>	<input type="text" value="0.0003"/>	<input type="text" value="0.0001"/>	<input type="text" value="0.0003"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	-0.0001	0.0002	V	V	0.0003
7	0.1000	0.0999	0.0999	V	V	0.0000
7	0.3000	0.2997	0.2998	V	V	0.0001
7	0.5000	0.4997	0.4997	V	V	0.0000
7	0.7000	0.6996	0.6996	V	V	0.0000
7	0.9000	0.8995	0.8995	V	V	0.0000
7	1.0000	0.9994	0.9994	V	V	0.0000

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	54761		ALC188	Sandy Grenville	02/15/2013	Flow Rate	000684

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
3.75%	3.87%

Cal Factor Zero	0
Cal Factor Full Scale	0.98
Rotometer Reading:	1.5

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	0.00	0.000	0.00	l/m	l/m	
primary	leak check	0.000	0.000	0.00	0.002	0.01	l/m	l/m	
primary	test pt 1	1.533	1.546	1.53	1.521	1.49	l/m	l/m	-3.62%
primary	test pt 2	1.535	1.548	1.53	1.524	1.49	l/m	l/m	-3.75%
primary	test pt 3	1.536	1.550	1.53	1.523	1.49	l/m	l/m	-3.87%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	190 deg	Status	pass
Sensor Component	Filter Depth	Condition	4.5 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	5.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244802		ALC188	Sandy Grenville	02/15/2013	Ozone	000689

Slope:	1.01151	Slope:	0.00000
Intercept	-0.34553	Intercept	0.00000
CorrCoff	0.99998	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg % Dif
A Max % Di	A Max % Di
0.8%	1.1%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.01	0.17	-0.43	ppb	
primary	2	31.04	31.18	31.51	ppb	1.06%
primary	3	50.60	50.72	51.10	ppb	0.75%
primary	4	81.60	81.68	82.10	ppb	0.51%
primary	5	100.95	101.01	101.80	ppb	0.78%

Sensor Component	Cell B Noise	Condition	0.8 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	< 1 %	Status	pass
Sensor Component	Offset	Condition	-0.20	Status	pass
Sensor Component	Span	Condition	1.029	Status	pass
Sensor Component	Cell B Freq.	Condition	85.8 kHz	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	32.1 C	Status	pass
Sensor Component	Cell A Pressure	Condition	731 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.6 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	85.5 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.71 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	missing		ALC188	Sandy Grenville	02/15/2013	Temperature	02997

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.31	0.36		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	0.05	0.13	0.000	0.4	C	0.23
primary	Temp Mid Range	25.44	25.41	0.000	25.7	C	0.33
primary	Temp High Range	47.54	47.42	0.000	47.8	C	0.36

Sensor Component	Shield	Condition	Moderately clean	Status	pass
Sensor Component	Blower Status Switch	Condition	Not functioning	Status	Fail
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Shelter One"/>	<input type="text" value="8128-2311"/>	<input type="text" value="1024 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type B"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	ALC188	Sandy Grenville	02/15/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.43	0.93		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	22.94	22.93	0.000	23.9	C	0.93
primary	Temp Mid Range	23.25	23.23	0.000	23.5	C	0.28
primary	Temp Mid Range	23.58	23.56	0.000	23.6	C	0.07

Field Systems Comments

1 Parameter: SiteOpsProcComm

The site operator uses the same gloves to remove and install the filter pack.

2 Parameter: SitingCriteriaCom

The site is well located with respect to CASTNET siting criteria, however there is a small campground 0.5 km to the northwest which may be a source of smoke.

3 Parameter: ShelterCleanNotes

The site is clean and neat.

4 Parameter: PollAnalyzerCom

The site was revisited on 3/3/2013 to complete the ozone performance evaluation. The level 2 ozone standard malfunctioned during the audit visit performed on 2/15/213.

5 Parameter: MetSensorComme

The temperature shield is pointing south and not north as stated in the QAPP. This condition was observed and reported during the previous site audit visits in February 2009 and 2011.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Dallardsville"/>
Operating Group	<input type="text" value="Alabama-Coushatta Environmental Gr"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="48-373-9991"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="R.M. Young"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text" value="30.4210"/>
Deposition Measurement	<input type="text" value="dry"/>	QAPP Longitude	<input type="text" value="-94.4045"/>
Land Use	<input type="text" value="woodland - mixed"/>	QAPP Elevation Meters	<input type="text" value="101"/>
Terrain	<input type="text" value="gently rolling"/>	QAPP Declination	<input type="text" value="3.8"/>
Conforms to MLM	<input type="text" value="Yes"/>	QAPP Declination Date	<input type="text" value="9/16/2005"/>
Site Telephone	<input type="text" value="(936) 563-2973"/>	Audit Latitude	<input type="text" value="30.701577"/>
Site Address 1	<input type="text" value="Poncho Rd."/>	Audit Longitude	<input type="text" value="-94.674011"/>
Site Address 2	<input type="text" value="571 Park Rd. 56"/>	Audit Elevation	<input type="text" value="105"/>
County	<input type="text" value="Polk"/>	Audit Declination	<input type="text" value="2.5"/>
City, State	<input type="text" value="Livingston, TX"/>		
Zip Code	<input type="text" value="77351"/>	Present	
Time Zone	<input type="text" value="Central"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="Inspected Feb 2002"/>
Primary Operator	<input type="text" value="Michelle Battise"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(936) 563-1146"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="battise_michelle@hotmail.com"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Carlene Bullock"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text" value="(936) 563-4009"/>	Security Fence <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text" value="carlenebullock@eastex.net"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
		Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="Shelter One"/>	Model <input type="text" value="8128-2311"/>	Shelter Size <input type="text" value="1024 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes <input type="text" value="The site is clean and neat."/>		
Site OK <input checked="" type="checkbox"/>	Notes <input type="text"/>		

Driving Directions From Livingston proceed east on route 190 approximately 16 miles. Turn right (south) onto Park Road 56 at the sign for Alabama-Coushatta Tribe and the Indain Village. Continue past the facility and campground by the small lake on the left. Just past the campground entrance, turn left onto a dirt road. Continue approximately 0.6 miles bearing right at the first fork and left at the second. You will see the site in the clearing.

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

The site is well located with respect to CASTNET siting criteria, however there is a small campground 0.5 km to the northwest which may be a source of smoke.

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|------------------------|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input type="checkbox"/> | Shields pointing south |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The temperature shield is pointing south and not north as stated in the QAPP. This condition was observed and reported during the previous site audit visits in February 2009 and 2011.

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

- | | | | |
|---|--|-------------------------------------|------------------|
| 1 | Do all the meteorological sensors appear to be intact, in good condition, and well maintained? | <input checked="" type="checkbox"/> | Temperature only |
| 2 | Are all the meteorological sensors operational online, and reporting data? | <input checked="" type="checkbox"/> | Temperature only |
| 3 | Are the shields for the temperature and RH sensors clean? | <input checked="" type="checkbox"/> | |
| 4 | Are the aspirated motors working? | <input checked="" type="checkbox"/> | |
| 5 | Is the solar radiation sensor's lens clean and free of scratches? | <input checked="" type="checkbox"/> | N/A |
| 6 | Is the surface wetness sensor grid clean and undamaged? | <input checked="" type="checkbox"/> | N/A |
| 7 | Are the sensor signal and power cables intact, in good condition, and well maintained? | <input checked="" type="checkbox"/> | |
| 8 | Are the sensor signal and power cable connections protected from the elements and well maintained? | <input checked="" type="checkbox"/> | |

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	RM Young	41342VC	missing	02997

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 12 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	B	none	000136
Ozone	ThermoElectron Inc	49i A1NAA	1030244802	000689
Filter pack flow pump	Thomas	107CA110	000010887	01040
Zero air pump	Werther International	C 70/4	000821897	06940

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The site was revisited on 3/3/2013 to complete the ozone performance evaluation. The level 2 ozone standard malfunctioned during the audit visit performed on 2/15/213.

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
DAS	Campbell	CR3000	2523	000422
Modem	Raven	H4223-C	08443555843	06583
UPS	APC	RS900	unknown	06794

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	Oct 2001	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2010	<input type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input checked="" type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- Is the station log properly completed during every site visit? Minimal information
- Are the Site Status Report Forms being completed and current?
- Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- Are ozone z/s/p control charts properly completed and current? Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text" value="As needed"/>	<input type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text" value="As needed"/>	<input type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID Technician Site Visit Date

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	<input checked="" type="checkbox"/>	Filter changed mornings, 80 % of the time
2	Are the Site Status Report Forms being completed and filed correctly?	<input checked="" type="checkbox"/>	
3	Are data downloads and backups being performed as scheduled?	<input type="checkbox"/>	No longer required
4	Are general observations being made and recorded? How?	<input checked="" type="checkbox"/>	SSRF
5	Are site supplies on-hand and replenished in a timely fashion?	<input checked="" type="checkbox"/>	
6	Are sample flow rates recorded? How?	<input checked="" type="checkbox"/>	SSRF, call-in
7	Are samples sent to the lab on a regular schedule in a timely fashion?	<input checked="" type="checkbox"/>	
8	Are filters protected from contamination during handling and shipping? How?	<input checked="" type="checkbox"/>	One set of gloves only
9	Are the site conditions reported regularly to the field operations manager or staff?	<input checked="" type="checkbox"/>	

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The site operator uses the same gloves to remove and install the filter pack.

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>MAC426-Eric Hebert-03/01/2013</i>						
1	3/1/2013	Computer	Toshiba	90934	Terca	87074381H
2	3/1/2013	DAS	Environmental Sys Corp	3027	8832	A3027
3	3/1/2013	Elevation	Elevation	None	1	None
4	3/1/2013	Filter pack flow pump	Thomas	none	107CAB11A	109500000033
5	3/1/2013	Flow Rate	Tylan	02023	FC280SAV	AW710253
6	3/1/2013	Infrastructure	Infrastructure	none	none	none
7	3/1/2013	Met tower	Climatronics	none	illegible	illegible
8	3/1/2013	MFC power supply	Tylan	03645	RO-32	FP9605011
9	3/1/2013	Modem	US Robotics	none	28.8 fax modem	1275
10	3/1/2013	Ozone	ThermoElectron Inc	none	49i A3NAA	CM08460049
11	3/1/2013	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	0733726104
12	3/1/2013	Precipitation	Climatronics	01324	100508-2	illegible
13	3/1/2013	Printer	Hewlett Packard	none	842C	unknown
14	3/1/2013	Relative Humidity	Rotronic	none	MP 601A	52064
15	3/1/2013	Sample Tower	Aluma Tower	none	B	none
16	3/1/2013	Shelter Temperature	ARS	60	none	none
17	3/1/2013	Siting Criteria	Siting Criteria	None	1	None
18	3/1/2013	Solar Radiation	Licor	none	LI-200	PY98205
19	3/1/2013	Temperature	RM Young	none	41342	15105
20	3/1/2013	Temperature2meter	RM Young	none	41342	15104
21	3/1/2013	Wind Direction	Climatronics	none	100076	1484
22	3/1/2013	Wind Speed	Climatronics	90924	100075	1515
23	3/1/2013	Zero air pump	Werther International	none	PC70/4	000665778

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Environmental Sys	A3027	MAC426	Eric Hebert	03/01/2013	DAS	Primary

Das Date: **Audit Date:**
Das Time: **Audit Time:**
Das Day: **Audit Day:**

Low Channel: **High Channel:**
Avg Diff: **Max Diff:** **Avg Diff:** **Max Diff:**

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="4000392"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01321"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="86590148"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01310"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/27/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
8	0.0000	0.0000	-0.0001	V	V	-0.0001
8	0.1000	0.1000	0.0998	V	V	-0.0002
8	0.3000	0.3000	0.2997	V	V	-0.0003
8	0.5000	0.5000	0.4999	V	V	-0.0001
8	0.7000	0.7000	0.6996	V	V	-0.0004
8	0.9000	0.9001	0.8998	V	V	-0.0003
8	1.0000	1.0001	0.9998	V	V	-0.0003
13	0.0000	0.0000	0.0000	V	V	0.0000
13	0.1000	0.1000	0.0999	V	V	-0.0001
13	0.3000	0.3000	0.2999	V	V	-0.0001
13	0.5000	0.5000	0.4999	V	V	-0.0001
13	0.7000	0.7000	0.6999	V	V	-0.0001
13	0.9000	0.9001	0.8999	V	V	-0.0002
13	1.0000	1.0001	0.9999	V	V	-0.0002

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Tylan	AW710253		MAC426	Eric Hebert	03/01/2013	Flow Rate	02023

Mfg	Tylan
SN/Owner ID	FP9605011 03645
Parameter	MFC power supply

Mfg	BIOS	Parameter	Flow Rate
Serial Number	122974	Tfer Desc.	BIOS 220-H
Tfer ID	01416		
Slope	1.00000	Intercept	0.00000
Cert Date	1/8/2013	CorrCoff	1.00000

DAS 1:	DAS 2:	Cal Factor Zero	0
A Avg % Diff:	A Max % Di	Cal Factor Full Scale	5.51
0.85%	0.94%	Rotometer Reading:	1.55

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	-0.04	-0.0140	-0.02	l/m	l/m	
primary	leak check	0.000	0.000	-0.01	0.0170	0.01	l/m	l/m	
primary	test pt 1	0.000	1.486	1.36	1.3610	1.50	l/m	l/m	0.94%
primary	test pt 2	0.000	1.488	1.36	1.3610	1.50	l/m	l/m	0.82%
primary	test pt 3	0.000	1.488	1.36	1.3610	1.50	l/m	l/m	0.78%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	180 deg	Status	pass
Sensor Component	Filter Depth	Condition	- 3.5 cm	Status	Fail
Sensor Component	Filter Position	Condition	Poor	Status	Fail
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	7.0 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	CM08460049	MAC426	Eric Hebert	03/01/2013	Ozone	none

Slope:	1.03139	Slope:	0.00000
Intercept	1.44173	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
5.4%	6.7%		

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	517112175	Tfer Desc.	Ozone primary stan
Tfer ID	01111		
Slope	0.99720	Intercept	0.18428
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.14	-0.32	1.26	ppb	
primary	2	37.17	37.08	39.57	ppb	6.72%
primary	3	53.20	53.16	56.25	ppb	5.81%
primary	4	82.02	82.06	85.84	ppb	4.61%
primary	5	110.54	110.66	115.80	ppb	4.64%

Sensor Component	Cell B Noise	Condition	0.9 kHz	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	-1.2	Status	pass
Sensor Component	Span	Condition	1.016	Status	pass
Sensor Component	Cell B Freq.	Condition	97.9 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	36.7 C	Status	pass
Sensor Component	Cell A Pressure	Condition	731 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.8 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	83.4 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Wind Speed Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	1515		MAC426	Eric Hebert	03/01/2013	Wind Speed	90924

Prop or Cups SN
Prop or Cups Torque to
Prop Correction Fact

Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind speed"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind speed motor (h"/>
Tfer ID	<input type="text" value="01262"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/13/2010"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind speed"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind speed motor (l"/>
Tfer ID	<input type="text" value="01261"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/13/2010"/>	CorrCoff	<input type="text" value="1.00000"/>

	DAS 1:		DAS 2:	
	Low Range	High Range	Low Range	High Range
Abs Avg Err	<input type="text" value="0.01"/>	<input type="text" value="0.10%"/>	<input type="text"/>	<input type="text"/>
Abs Max Er	<input type="text" value="0.03"/>	<input type="text" value="0.25%"/>	<input type="text"/>	<input type="text"/>

UseDescription:	InputDevice:	Input RPM:	Input m/s:	Output V:	DAS m/s:	Diff/ %Diff:	Difference:
primary	00000	0	0.20	0.0000	0.2		0.00
primary	00000	50	1.40	0.0000	1.4		0.00
primary	00000	100	2.57	0.0000	2.6		0.03
primary	00000	170	4.22	0.0000	4.2		-0.02
primary	00000	250	6.10	0.0000	6.1	0.00%	
primary	00000	500	11.97	0.0000	12.0	0.25%	
primary	00000	800	19.02	0.0000	19.0	-0.11%	
primary	00000	2000	47.22	0.0000	47.2	-0.04%	

Sensor Component	<input type="text" value="System Memo"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Plumb"/>	Condition	<input type="text" value="Plumb"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Heater"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Prop or Cups Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Torque"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>

Wind Direction Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	1484		MAC426	Eric Hebert	03/01/2013	Wind Direction	none

Vane SN: C. A. Align. deg. true:

Vane Torque to

Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind direction"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind direction wheel"/>
Tfer ID	<input type="text" value="01266"/>		
Mfg	<input type="text" value="Ushikata"/>	Parameter	<input type="text" value="wind direction"/>
Serial Number	<input type="text" value="190037"/>	Tfer Desc.	<input type="text" value="transit"/>
Tfer ID	<input type="text" value="01265"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/4/2011"/>	CorrCoff	<input type="text" value="1.00000"/>

DAS 1:	DAS 2:		
Orientation	Linearity:	Orientation	Linearity:
Abs Avg Err	<input type="text" value="1.4"/>	<input type="text" value="1.5"/>	<input type="text"/>
Abs Max Er	<input type="text" value="2"/>	<input type="text" value="5"/>	<input type="text"/>

UseDescription:	TferID:	Input Raw:	Linearity	Output V:	Output Deg.:	Difference:	Change:	Error:
primary	01265	88	<input type="checkbox"/>	0.0000	86	2		2
primary	01265	168	<input type="checkbox"/>	0.0000	168	0		0
primary	01265	178	<input type="checkbox"/>	0.0000	177	1		1
primary	01265	268	<input type="checkbox"/>	0.0000	266	2		2
primary	01265	358	<input type="checkbox"/>	0.0000	360	2		2
primary	01266	0	<input checked="" type="checkbox"/>	0.0000	0	0	48	3
primary	01266	45	<input checked="" type="checkbox"/>	0.0000	40	5	40	-5
primary	01266	90	<input checked="" type="checkbox"/>	0.0000	86	4	46	1
primary	01266	135	<input checked="" type="checkbox"/>	0.0000	132	3	46	1
primary	01266	180	<input checked="" type="checkbox"/>	0.0000	177	3	45	0
primary	01266	225	<input checked="" type="checkbox"/>	0.0000	221	4	44	-1
primary	01266	270	<input checked="" type="checkbox"/>	0.0000	266	4	45	0
primary	01266	315	<input checked="" type="checkbox"/>	0.0000	312	3	46	1

Sensor Component	<input type="text" value="Mast"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Heater"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Plumb"/>	Condition	<input type="text" value="Plumb"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Vane Condition"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Torque"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="System Memo"/>	Condition	<input type="text" value="See comments"/>	Status	<input type="text" value="pass"/>

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	15105		MAC426	Eric Hebert	03/01/2013	Temperature	none

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.31	0.34		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.18	-0.06	0.0000	0.20	C	0.26
primary	Temp Mid Range	24.45	24.40	0.0000	24.73	C	0.33
primary	Temp High Range	43.30	43.11	0.0000	43.45	C	0.34

Sensor Component	Shield	Condition	Moderately clean	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

2 Meter Temperature Data For

Calc. Difference

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	15104		MAC426	Eric Hebert	03/01/2013	Temperature2meter	none

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.33	0.43		

UseDescription:	Test type:	InputTmpRaw	InputTmpCorrected:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Rang	-0.18	-0.06	0.0000	0.17 C		0.23
primary	Temp Mid Range	24.45	24.40	0.0000	24.74 C		0.34
primary	Temp High Rang	43.30	43.11	0.0000	43.54 C		0.43

Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	Shield	Condition	Moderately clean	Status	pass

Humidity Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Rotronic	52064		MAC426	Eric Hebert	03/01/2013	Relative Humidity	none

Mfg	Rotronic	Parameter	Relative Humidity
Serial Number	124432	Tfer Desc.	Hygroclip
Tfer ID	01225		
Slope	1.00000	Intercept	0.00000
Cert Date	1/29/2013	CorrCoff	1.00000

DAS 1:

DAS 2:

	Low Range	High Range	Low Range	High Range
Abs Avg Err	14.9	2.2		
Abs Max Er	27.4	2.2		

UseDesc.:	Test type:	Device:	Input RH:	GTL Raw:	RH Corr.:	DAS Volts:	DAS %RH:	Difference:
primary	RH Low Range	Hygroclip	32.8	34.8	32.8	0.0000	60.2	27.4
primary	RH Low Range	Hygroclip	52.9	60.0	52.9	0.0000	55.3	2.4
primary	RH High Range	Hygroclip	93.6	91.1	93.6	0.0000	95.8	2.2

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	Pass
Sensor Component	RH Filter	Condition	Clean	Status	pass
Sensor Component	Shield	Condition	Moderately clean	Status	pass

Solar Radiation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Licor	PY98205		MAC426	Eric Hebert	03/01/2013	Solar Radiation	none

Mfg	Eppley	Parameter	solar radiation
Serial Number	10765	Tfer Desc.	SR transfer translat
Tfer ID	01246		
Slope	1.00000	Intercept	0.00000
Cert Date	1/6/2010	CorrCoff	1.00000
Mfg	Eppley	Parameter	solar radiation
Serial Number	34341F3	Tfer Desc.	SR transfer sensor
Tfer ID	01245		
Slope	1.00000	Intercept	0.00000
Cert Date	12/16/2010	CorrCoff	1.00000

DAS 1: **DAS 2:**
 % Diff of Avg %Diff of Max %Diff of Avg %Diff of Max

6.8% 9.2% 0.0% 0.0%

UseDescription:	Measure Date	MeasureTime	Tfer Corr:	DAS w/m2:	PctDifference:
primary	3/1/2013	10:00	223	239	7.2%
primary	3/1/2013	11:00	251	274	9.2%
primary	3/1/2013	12:00	234	257	9.8%
primary	3/1/2013	13:00	201	204	1.5%
primary	3/1/2013	14:00	191	212	11.0%
primary	3/1/2013	15:00	92	87	-5.4%

Sensor Component	Sensor Level	Condition	Level	Status	pass
Sensor Component	Sensor Clean	Condition	Clean	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Precipitation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	illegible		MAC426	Eric Hebert	03/01/2013	Precipitation	01324

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
6.0%	8.0%		

Mfg	PMP	Parameter	Precipitation
Serial Number	EW-06134-50	Tfer Desc.	250ml graduate
Tfer ID	01250		
Slope	1.00000	Intercept	0.00000
Cert Date	9/5/2005	CorrCoff	1.00000

UseDesc.	Test type:	TferVolume:	Iteration:	TimePerTip:	Eq.Ht:	DAS eng:	Eq.HtUnit:	OSE Unit:	TferUnits:	PctDifference
primary	tip check	10 manual	1	2 sec	1.00	1.00	mm	mm	ml	
primary	test 1	231.5	1	10 sec	5.00	4.80	mm	mm	ml	-4.0%
primary	test 2	231.5	2	10 sec	5.00	4.60	mm	mm	ml	-8.0%

Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Sensor Heater	Condition	Functioning	Status	pass
Sensor Component	Properly Sited	Condition	See comments	Status	pass
Sensor Component	Gauge Drain Screen	Condition	Not installed	Status	Fail
Sensor Component	Level	Condition	Level	Status	pass
Sensor Component	Gauge Clean	Condition	Clean	Status	pass
Sensor Component	Funnel Clean	Condition	Clean	Status	pass
Sensor Component	Condition	Condition	Good	Status	pass
Sensor Component	Gauge Screen	Condition	Installed	Status	Fail

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="custom"/>	<input type="text" value="N/A"/>	<input type="text" value="1536 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type B"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
ARS	none	MAC426	Eric Hebert	03/01/2013	Shelter Temperature	60

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.98	1.40		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	23.71	23.66	0.000	24.5	C	0.79
primary	Temp Mid Range	23.51	23.46	0.000	24.9	C	1.4
primary	Temp Mid Range	23.67	23.62	0.000	24.4	C	0.75

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
-----------	------	------------	-----------	-----------	-----	------------	--------	---------

Flow Rate	MAC426	Eric Hebert	03/01/2013	Filter Position	Tylan	3705	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The filter attachment plate is mounted too high in the enclosure resulting in the filter being recessed in the enclosure and not exposed in the standard geometric orientation.								

Precipitation	MAC426	Eric Hebert	03/01/2013	Properly Sited	Climatronics	3701	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Objects violate the 45 degree rule for the tipping bucket rain gage.								

Field Systems Comments

1 Parameter: SiteOpsProcComm

The site operators are very knowledgeable with air quality monitoring. They are doing a very good job with site activities and filter handling.

2 Parameter: SitingCriteriaCom

Bowling Green is within 40 km of the site. The site is in a hay field which is harvested twice per year. The area to the west and south is comprised of livestock farms including cattle and poultry. The coordinates provided in the QAPP are incorrect.

3 Parameter: ShelterCleanNotes

The shelter is well maintained, clean, neat, and well organized.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="NPS"/>	USGS Map	<input type="text" value="Rhoda"/>
Operating Group	<input type="text" value="NPS"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="21-061-0501"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="Climatronics"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone, SO2, NOy, Hg, IMPROVE, PM"/>	QAPP Latitude	<input type="text" value="37.2806"/>
Deposition Measurement	<input type="text" value="dry, wet, Hg"/>	QAPP Longitude	<input type="text" value="-86.2639"/>
Land Use	<input type="text" value="agriculture, woodland - mixed"/>	QAPP Elevation Meters	<input type="text" value="236"/>
Terrain	<input type="text" value="rolling"/>	QAPP Declination	<input type="text" value="3"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text" value="12/27/2004"/>
Site Telephone	<input type="text" value="(270) 758-2136"/>	Audit Latitude	<input type="text" value="37.131794"/>
Site Address 1	<input type="text" value="Alfred Cook Road"/>	Audit Longitude	<input type="text" value="-86.142953"/>
Site Address 2	<input type="text"/>	Audit Elevation	<input type="text" value="230"/>
County	<input type="text" value="Edmonson"/>	Audit Declination	<input type="text" value="-4.0"/>
City, State	<input type="text" value="Smiths Grove, KY"/>		
Zip Code	<input type="text" value="42171"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="inspected August 2010"/>
Time Zone	<input type="text" value="Eastern"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Operator	<input type="text" value="Jonathan Jernigan"/>	Safety Glasses <input type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(270) 758-2146"/>	Safety Hard Hat <input type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="jonathan_jernigan@nps.gov"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Bob Carson"/>	Security Fence <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text" value="(270) 758-2136"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text" value="bob_carson@nps.gov"/>	Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="custom"/>	Model <input type="text" value="N/A"/>	Shelter Size <input type="text" value="1536 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes <input type="text" value="The shelter is well maintained, clean, neat, and well organized."/>		
Site OK <input checked="" type="checkbox"/>	Notes <input type="text"/>		

Driving Directions From Bowling Green go east on 31W. Turn left (north) on 442 toward Pig. At the stop sign in Pig, turn right on route 259, or Brownsville Road. Continue approximately 1 mile, just past two churches (one on each side of the road). Take the 2nd left past the church on the left onto Chaumont Road. Then take the first left onto Doyle Road. Continue straight onto Alfred Cook Road. The site will be on the left approximately 0.6 miles.

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID Technician Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km		<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km		<input checked="" type="checkbox"/>
City > 50,000 population	40 km	35 km	<input type="checkbox"/>
City 10,000 to 50,000 population	10 km		<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km		<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km		<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m		<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m		<input checked="" type="checkbox"/>
Feedlot operations	500 m		<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m		<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	10 m	<input type="checkbox"/>
Large parking lot	200 m		<input checked="" type="checkbox"/>
Small parking lot	100 m		<input checked="" type="checkbox"/>
Tree line	50 m		<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height		<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Bowling Green is within 40 km of the site. The site is in a hay field which is harvested twice per year. The area to the west and south is comprised of livestock farms including cattle and poultry. The coordinates provided in the QAPP are incorrect.

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|--------------------------|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input type="checkbox"/> | 45 degree rule violation |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

- 1 Do all the meteorological sensors appear to be intact, in good condition, and well maintained?
- 2 Are all the meteorological sensors operational online, and reporting data?
- 3 Are the shields for the temperature and RH sensors clean?
- 4 Are the aspirated motors working?
- 5 Is the solar radiation sensor's lens clean and free of scratches?
- 6 Is the surface wetness sensor grid clean and undamaged? N/A
- 7 Are the sensor signal and power cables intact, in good condition, and well maintained?
- 8 Are the sensor signal and power cable connections protected from the elements and well maintained?

Parameter	Manufacturer	Model	S/N	Client ID
Met tower	Climatronics	illegible	illegible	none
Wind Direction	Climatronics	100076	1484	none
Solar Radiation	Licor	LI-200	PY98205	none
Relative Humidity	Rotronic	MP 601A	52064	none
Precipitation	Climatronics	100508-2	illegible	01324
Temperature	RM Young	41342	15105	none
Temperature2meter	RM Young	41342	15104	none
Wind Speed	Climatronics	100075	1515	90924

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 10 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location)
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	B	none	none
Ozone	ThermoElectron Inc	49i A3NAA	CM08460049	none
Filter pack flow pump	Thomas	107CAB11A	109500000033	none
MFC power supply	Tylan	RO-32	FP9605011	03645
Zero air pump	Werther International	PC70/4	000665778	none

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Toshiba	Terca	87074381H	90934
DAS	Environmental Sys Corp	8832	A3027	3027
Modem	US Robotics	28.8 fax modem	1275	none
Printer	Hewlett Packard	842C	unknown	none

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data logger	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Computer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Printer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind sensor translator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text" value="DataView2"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
HASP	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Monthly, quarterly, semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Alarm values only"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

Site operation procedures

- | | | | |
|---|--|-------------------------------------|-------------------------------|
| 1 | Is the filter pack being changed every Tuesday as scheduled? | <input checked="" type="checkbox"/> | Filter changed mornings (90%) |
| 2 | Are the Site Status Report Forms being completed and filed correctly? | <input checked="" type="checkbox"/> | |
| 3 | Are data downloads and backups being performed as scheduled? | <input type="checkbox"/> | No longer required |
| 4 | Are general observations being made and recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook |
| 5 | Are site supplies on-hand and replenished in a timely fashion? | <input checked="" type="checkbox"/> | |
| 6 | Are sample flow rates recorded? How? | <input checked="" type="checkbox"/> | SSRF |
| 7 | Are samples sent to the lab on a regular schedule in a timely fashion? | <input checked="" type="checkbox"/> | |
| 8 | Are filters protected from contamination during handling and shipping? How? | <input checked="" type="checkbox"/> | Clean gloves on and off |
| 9 | Are the site conditions reported regularly to the field operations manager or staff? | <input type="checkbox"/> | |

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually and as needed	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input type="checkbox"/>	<input type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The site operators are very knowledgeable with air quality monitoring. They are doing a very good job with site activities and filter handling.

Site Inventory by Site Visit

Site Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number	
<i>CHE185-Eric Hebert-03/03/2013</i>						
1	3/3/2013	DAS	Environmental Sys Corp	73955	8832	A0656-b
2	3/3/2013	Elevation	Elevation	None	1	None
3	3/3/2013	Filter pack flow pump	Thomas	00498	107CAB18	0000110
4	3/3/2013	Flow Rate	Apex	000641	AXMC105LPMDCV	116
5	3/3/2013	Infrastructure	Infrastructure	none	none	none
6	3/3/2013	Met tower	Universal Tower	03662	unknown	none
7	3/3/2013	Modem	Raven	06459	V4221-V	0808452827
8	3/3/2013	Ozone	Monitor Labs, Inc.	54901	ML9811	191
9	3/3/2013	Precipitation	Texas Electronics	04714	TR-525i-HT	30094-202
10	3/3/2013	Printer	Hewlett Packard	none	6500A	unknown
11	3/3/2013	Relative Humidity	Rotronic	06385	MP 101A-C5	31161
12	3/3/2013	Sample Tower	Aluma Tower	000054	B	AT-81213-T12
13	3/3/2013	Shelter Temperature	unknown	none	none	015
14	3/3/2013	Shield (10 meter)	RM Young	04620	Aspirated 43408	none
15	3/3/2013	Shield (2 meter)	RM Young	04680	Aspirated 43408	none
16	3/3/2013	Siting Criteria	Siting Criteria	None	1	None
17	3/3/2013	Solar Radiation	Licor	04009	LI-200	illegible
18	3/3/2013	Solar Radiation Translator	RM Young	06630	70101-X	none
19	3/3/2013	Solar Radiation Translator	RM Young	02533	70101-X	none
20	3/3/2013	Surface Wetness	RM Young	06313	58101	none
21	3/3/2013	Temperature	RM Young	04945	41342VC	8897
22	3/3/2013	Temperature2meter	RM Young	06244	41342VC	12791
23	3/3/2013	Wind Direction	RM Young	04865	AQ05305	58321wdr
24	3/3/2013	Wind Direction	RM Young	04335	AQ05305V	34948wdr
25	3/3/2013	Wind Speed	RM Young	04335	AQ05305V	34948wsp
26	3/3/2013	Zero air pump	Ecotech	none	8301LC	01-0658

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Environmental Sys	A0656-b	CHE185	Eric Hebert	03/03/2013	DAS	Primary

Das Date: **Audit Date:**
Das Time: **Audit Time:**
Das Day: **Audit Day:**
Low Channel: **High Channel:**
Avg Diff: **Max Diff:** **Avg Diff:** **Max Diff:**

Mfg **Parameter**
Serial Number **Tfer Desc.**
Tfer ID
Slope **Intercept**
Cert Date **CorrCoff**
Mfg **Parameter**
Serial Number **Tfer Desc.**
Tfer ID
Slope **Intercept**
Cert Date **CorrCoff**

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
6	0.0000	0.0000	-0.0009	V	V	-0.0009
6	0.1000	0.1000	0.0991	V	V	-0.0009
6	0.3000	0.3000	0.2991	V	V	-0.0009
6	0.5000	0.5000	0.4990	V	V	-0.0010
6	0.7000	0.7001	0.6990	V	V	-0.0011
6	0.9000	0.9001	0.8990	V	V	-0.0011
6	1.0000	1.0001	0.9991	V	V	-0.0010

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	116		CHE185	Eric Hebert	03/03/2013	Flow Rate	000641

Mfg	BIOS	Parameter	Flow Rate
Serial Number	122974	Tfer Desc.	BIOS 220-H
Tfer ID	01416		
Slope	1.00000	Intercept	0.00000
Cert Date	1/8/2013	CorrCoff	1.00000

DAS 1:	DAS 2:	Cal Factor Zero	-0.017
A Avg % Diff:	A Max % Di	Cal Factor Full Scale	5.177
1.38%	1.65%	Rotometer Reading:	1.5

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	0.00	0.0000	-0.02	l/m	l/m	
primary	leak check	0.000	0.000	0.01	0.0010	-0.01	l/m	l/m	
primary	test pt 1	0.000	1.525	1.48	1.4650	1.50	l/m	l/m	-1.65%
primary	test pt 2	0.000	1.518	1.48	1.4650	1.50	l/m	l/m	-1.17%
primary	test pt 3	0.000	1.520	1.48	1.4650	1.50	l/m	l/m	-1.31%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	180 deg	Status	pass
Sensor Component	Filter Depth	Condition	- 1.0 cm	Status	Fail
Sensor Component	Filter Position	Condition	Poor	Status	Fail
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	5.0 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Monitor Labs, Inc.	191		CHE185	Eric Hebert	03/03/2013	Ozone	54901

Slope:	0.99014	Slope:	0.00000
Intercept	2.27140	Intercept	0.00000
CorrCoff	0.99990	CorrCoff	0.00000

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
3.4%	6.5%		

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	517112175	Tfer Desc.	Ozone primary stan
Tfer ID	01111		
Slope	0.99720	Intercept	0.18428
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.08	-0.10	1.98	ppb	
primary	2	28.46	28.35	30.20	ppb	6.53%
primary	3	55.31	55.28	57.33	ppb	3.71%
primary	4	82.86	82.90	85.14	ppb	2.70%
primary	5	101.81	101.91	102.40	ppb	0.48%

Sensor Component	Cell B Noise	Condition		Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.06	Status	pass
Sensor Component	Span	Condition	1.024	Status	pass
Sensor Component	Cell B Freq.	Condition		Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition		Status	pass
Sensor Component	Cell A Tmp.	Condition	37.9 C	Status	pass
Sensor Component	Cell A Pressure	Condition	701 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	N/A	Status	pass
Sensor Component	Cell A Freq.	Condition	42 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.5 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Wind Speed Data Form

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	34948wsp	CHE185	Eric Hebert	03/03/2013	Wind Speed	04335

Prop or Cups SN
Prop or Cups Torque to
Prop Correction Fact

Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind speed"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind speed motor (h"/>
Tfer ID	<input type="text" value="01262"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/13/2010"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind speed"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind speed motor (l"/>
Tfer ID	<input type="text" value="01261"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/13/2010"/>	CorrCoff	<input type="text" value="1.00000"/>

	DAS 1:		DAS 2:	
	Low Range	High Range	Low Range	High Range
Abs Avg Err	<input type="text" value="0.12"/>	<input type="text" value="0.48%"/>	<input type="text"/>	<input type="text"/>
Abs Max Er	<input type="text" value="0.30"/>	<input type="text" value="0.74%"/>	<input type="text"/>	<input type="text"/>

UseDescription:	InputDevice:	Input RPM:	Input m/s:	Output V:	DAS m/s:	Diff/ %Diff:	Difference:
primary	none	0	0.20	0.0000	-0.1		-0.30
primary	01262	200	0.98	0.0000	0.9		-0.08
primary	01262	400	1.96	0.0000	1.9		-0.06
primary	01262	800	3.92	0.0000	3.9		-0.02
primary	01262	1200	5.88	0.0000	5.9	0.34%	
primary	01262	2400	11.76	0.0000	11.8	0.34%	
primary	01262	4000	19.60	0.0000	19.7	0.51%	
primary	01262	9400	46.06	0.0000	46.4	0.74%	

Sensor Component	<input type="text" value="System Memo"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Plumb"/>	Condition	<input type="text" value="Plumb"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Heater"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Prop or Cups Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Torque"/>	Condition	<input type="text"/>	Status	<input type="text" value="Fail"/>

Wind Direction Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	34948wdr		CHE185	Eric Hebert	03/03/2013	Wind Direction	04335

Vane SN: C. A. Align. deg. true:

Vane Torque to

Mfg	<input type="text" value="Ushikata"/>	Parameter	<input type="text" value="wind direction"/>
Serial Number	<input type="text" value="190037"/>	Tfer Desc.	<input type="text" value="transit"/>
Tfer ID	<input type="text" value="01265"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/4/2011"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind direction"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind direction wheel"/>
Tfer ID	<input type="text" value="01266"/>		

DAS 1:	DAS 2:		
Orientation	Linearity:	Orientation	Linearity:
Abs Avg Err	<input type="text" value="0.5"/>	<input type="text" value="1.0"/>	<input type="text"/>
Abs Max Er	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text"/>

UseDescription:	TferID:	Input Raw:	Linearity	Output V:	Output Deg.:	Difference:	Change:	Error:
primary	01266	0	<input checked="" type="checkbox"/>	0.0000	2	2	48	3
primary	01266	45	<input checked="" type="checkbox"/>	0.0000	44	1	42	-3
primary	01266	90	<input checked="" type="checkbox"/>	0.0000	90	0	46	1
primary	01266	135	<input checked="" type="checkbox"/>	0.0000	135	0	45	0
primary	01266	180	<input checked="" type="checkbox"/>	0.0000	180	0	45	0
primary	01266	225	<input checked="" type="checkbox"/>	0.0000	225	0	45	0
primary	01266	270	<input checked="" type="checkbox"/>	0.0000	270	0	45	0
primary	01266	315	<input checked="" type="checkbox"/>	0.0000	314	1	44	-1
primary	01265	90	<input type="checkbox"/>	0.0000	90	0		0
primary	01265	180	<input type="checkbox"/>	0.0000	180	0		0
primary	01265	270	<input type="checkbox"/>	0.0000	270	0		0
primary	01265	360	<input type="checkbox"/>	0.0000	2	2		2

Sensor Component	<input type="text" value="Mast"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Heater"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Plumb"/>	Condition	<input type="text" value="Plumb"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Torque"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Vane Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="System Memo"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	8897		CHE185	Eric Hebert	03/03/2013	Temperature	04945

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.13	0.24		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.08	0.04	0.0000	-0.09	C	-0.13
primary	Temp Mid Range	17.02	17.02	0.0000	16.99	C	-0.03
primary	Temp High Range	42.36	42.18	0.0000	42.42	C	0.24

Sensor Component	Shield	Condition	Moderately clean	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

2 Meter Temperature Data For

Calc. Difference

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	12791	CHE185	Eric Hebert	03/03/2013	Temperature2meter	06244

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.15	0.17		

UseDescription:	Test type:	InputTmpRaw	InputTmpCorrected:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Rang	-0.08	0.04	0.0000	-0.09 C		-0.13
primary	Temp Mid Rang	17.02	17.02	0.0000	16.87 C		-0.15
primary	Temp High Ran	42.36	42.18	0.0000	42.35 C		0.17

Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	Shield	Condition	Moderately clean	Status	pass

Humidity Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Rotronic	31161		CHE185	Eric Hebert	03/03/2013	Relative Humidity	06385

Mfg	Rotronic	Parameter	Relative Humidity
Serial Number	124432	Tfer Desc.	Hygroclip
Tfer ID	01225		
Slope	1.00000	Intercept	0.00000
Cert Date	1/29/2013	CorrCoff	1.00000

DAS 1:

DAS 2:

	Low Range	High Range	Low Range	High Range
Abs Avg Err	7.2	1.5		
Abs Max Er	8.1	1.5		

UseDesc.:	Test type:	Device:	Input RH:	GTL Raw:	RH Corr.:	DAS Volts:	DAS %RH:	Difference:
primary	RH Low Range	Hygroclip	32.8	35.5	32.8	0.0000	24.7	-8.1
primary	RH Low Range	Hygroclip	52.9	54.8	52.9	0.0000	46.6	-6.3
primary	RH High Range	Hygroclip	93.6	89.9	93.6	0.0000	95.1	1.5

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	N/A	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	RH Filter	Condition	Clean	Status	pass
Sensor Component	Shield	Condition	Moderately clean	Status	pass

Solar Radiation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Licor	illegible		CHE185	Eric Hebert	03/03/2013	Solar Radiation	04009

Mfg	RM Young	
SN/Owner ID	none	02533
Parameter	Solar Radiation Translator	
Mfg	RM Young	
SN/Owner ID	none	06630
Parameter	Solar Radiation Translator	

Mfg	Eppley	Parameter	solar radiation
Serial Number	10765	Tfer Desc.	SR transfer translat
Tfer ID	01246		
Slope	1.00000	Intercept	0.00000
Cert Date	1/6/2010	CorrCoff	1.00000
Mfg	Eppley	Parameter	solar radiation
Serial Number	34341F3	Tfer Desc.	SR transfer sensor
Tfer ID	01245		
Slope	1.00000	Intercept	0.00000
Cert Date	12/16/2010	CorrCoff	1.00000

DAS 1: DAS 2:
 % Diff of Avg %Diff of Max %Diff of Avg %Diff of Max

1.4%	1.7%	0.0%	0.0%
------	------	------	------

UseDescription:	Measure Date	MeasureTime	Tfer Corr:	DAS w/m2:	PctDifference:
primary	3/3/2013	12:00	781	794	1.7%
primary	3/3/2013	13:00	750	761	1.5%
primary	3/3/2013	14:00	633	645	1.9%
primary	3/3/2013	15:00	488	498	2.0%
primary	3/3/2013	16:00	194	188	-3.1%

Sensor Component	Sensor Level	Condition	Level	Status	pass
Sensor Component	Sensor Clean	Condition	Clean	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Surface Wetness Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	none		CHE185	Eric Hebert	03/03/2013	Surface Wetness	06313

Mfg	Ohmite	Parameter	surface wetness
Serial Number	296-1200	Tfer Desc.	decade box
Tfer ID	01210		
Slope	1.00000	Intercept	0.00000
Cert Date	1/4/2011	CorrCoff	1.00000

Manual Test Pass

UseDescription:	Test Type:	Tfer kOhms:	OutputSignal:	DAS eng:	OutputSignalEngUni	TferUnits:	OutputSignalUnit
primary	wet	N/A	1.2220	1.05	V	N/A	V
primary	dry	N/A	0.0200	0.02	V	N/A	V
primary	Decade box on	230	1.2220	1.05	V	kOhm	V
primary	Decade box off	240	0.0200	0.02	V	kOhm	V

Sensor Component	Grid Orientation	Condition	North	Status	pass
Sensor Component	Grid Clean	Condition	Clean	Status	pass
Sensor Component	Grid Angle	Condition	About 30 deg	Status	pass
Sensor Component	Grid Condition	Condition	Fair	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Grid Type	Condition	Grid without holes	Status	pass

Precipitation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Texas Electronics	30094-202		CHE185	Eric Hebert	03/03/2013	Precipitation	04714

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
2.0%	4.0%		

Mfg	PMP	Parameter	Precipitation
Serial Number	EW-06134-50	Tfer Desc.	250ml graduate
Tfer ID	01250		
Slope	1.00000	Intercept	0.00000
Cert Date	9/5/2005	CorrCoff	1.00000

UseDesc.	Test type:	TferVolume:	Iteration:	TimePerTip:	Eq.Ht:	DAS eng:	Eq.HtUnit:	OSE Unit:	TferUnits:	PctDifference
primary	tip check	10 manual	1	2 sec	0.10	0.10	in	in	ml	
primary	test 1	231.5	1	8 sec	0.50	0.50	in	in	ml	0.0%
primary	test 2	231.5	2	10 sec	0.50	0.48	in	in	ml	-4.0%

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sensor Heater	Condition	Not functioning	Status	Fail
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	Gauge Drain Screen	Condition	Installed	Status	pass
Sensor Component	Level	Condition	Level	Status	pass
Sensor Component	Gauge Clean	Condition	Clean	Status	pass
Sensor Component	Funnel Clean	Condition	Clean	Status	pass
Sensor Component	Condition	Condition	Good	Status	pass
Sensor Component	Gauge Screen	Condition	Installed	Status	Fail

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Shelter One"/>	<input type="text" value="8128"/>	<input type="text" value="768 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type B"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
unknown	015	CHE185	Eric Hebert	03/03/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.58	0.82		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	22.29	22.25	0.000	23.1	C	0.82
primary	Temp Mid Range	23.87	23.82	0.000	24.3	C	0.49
primary	Temp Mid Range	25.02	24.96	0.000	25.4	C	0.44

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
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Flow Rate	CHE185	Eric Hebert	03/03/2013	Filter Position	Apex	3709	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The filter attachment plate is mounted too low in the enclosure resulting in the filter being exposed to wind-driven rain and in the standard geometric orientation.

Field Systems Comments

1 Parameter: SiteOpsProcComm

The site is well maintained and operated. Very good sample change out procedures are being used by the site operator.

2 Parameter: SitingCriteriaCom

The site is located in a pasture with grazing cattle sometimes as close as 5 meters.

3 Parameter: ShelterCleanNotes

The shelter is in very good condition, clean, neat, and well organized.

4 Parameter: PollAnalyzerCom

The ozone analyzer response to audit gas was observed to be very slow. This was discussed with the site operator, and it was recommended that the monitor averaging interval be changed to a shorter period. It was also suggested that the sample line be changed from 3/8 inch tubing to 1/4 inch tubing.

Field Systems Data Form

F-02058-1500-S1-rev001

Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Stilwell West"/>
Operating Group	<input type="text" value="Cherokee Nation OES"/>	Map Scale	<input type="text"/>
AQS #	<input type="text"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="R.M. Young"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone, NOy, ammonia"/>	QAPP Latitude	<input type="text" value="35.7507"/>
Deposition Measurement	<input type="text" value="dry, Hg, passive ammonia"/>	QAPP Longitude	<input type="text" value="-94.6700"/>
Land Use	<input type="text" value="agriculture, pasture"/>	QAPP Elevation Meters	<input type="text" value="299"/>
Terrain	<input type="text" value="rolling"/>	QAPP Declination	<input type="text" value="3.25"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text" value="9/16/2005"/>
Site Telephone	<input type="text" value="(918) 696-5604"/>	Audit Latitude	<input type="text" value="35.750786"/>
Site Address 1	<input type="text" value="Cherry Tree"/>	Audit Longitude	<input type="text" value="-94.669789"/>
Site Address 2	<input type="text" value="Dahlongegah School"/>	Audit Elevation	<input type="text" value="305"/>
County	<input type="text" value="Adair"/>	Audit Declination	<input type="text" value="3"/>
City, State	<input type="text" value="Stilwell, OK"/>		
Zip Code	<input type="text" value="74960"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="No inspection date"/>
Time Zone	<input type="text" value="Central"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Operator	<input type="text" value="Jacque Adam"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(918) 822-2770"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="jacque-adam@cherokee.org"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Dani Keese"/>	Security Fence <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text" value="danielle-keese@cherokee.org"/>	Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="Shelter One"/>	Model <input type="text" value="8128"/>	Shelter Size <input type="text" value="768 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes <input type="text" value="The shelter is in very good condition, clean, neat, and well organized."/>		
Site OK <input checked="" type="checkbox"/>	Notes <input type="text"/>		

Driving Directions

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- 1 Are wind speed and direction sensors sited so as to avoid being influenced by obstructions?
- 2 Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind)
- 3 Are the tower and sensors plumb?
- 4 Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc?
- 5 Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided)
- 6 Is the solar radiation sensor plumb?
- 7 Is it sited to avoid shading, or any artificial or reflected light?
- 8 Is the rain gauge plumb?
- 9 Is it sited to avoid sheltering effects from buildings, trees, towers, etc?
- 10 Is the surface wetness sensor sited with the grid surface facing north?
- 11 Is it inclined approximately 30 degrees?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

- 1 Do all the meteorological sensors appear to be intact, in good condition, and well maintained?
- 2 Are all the meteorological sensors operational online, and reporting data?
- 3 Are the shields for the temperature and RH sensors clean?
- 4 Are the aspirated motors working?
- 5 Is the solar radiation sensor's lens clean and free of scratches?
- 6 Is the surface wetness sensor grid clean and undamaged?
- 7 Are the sensor signal and power cables intact, in good condition, and well maintained?
- 8 Are the sensor signal and power cable connections protected from the elements and well maintained?

Parameter	Manufacturer	Model	S/N	Client ID
Solar Radiation	Licor	LI-200	illegible	04009
Shield (10 meter)	RM Young	Aspirated 43408	none	04620
Shield (2 meter)	RM Young	Aspirated 43408	none	04680
Surface Wetness	RM Young	58101	none	06313
Wind Speed	RM Young	AQ05305V	34948wsp	04335
Wind Direction	RM Young	AQ05305V	34948wdr	04335
Precipitation	Texas Electronics	TR-525i-HT	30094-202	04714
Met tower	Universal Tower	unknown	none	03662
Temperature	RM Young	41342VC	8897	04945
Temperature2meter	RM Young	41342VC	12791	06244
Relative Humidity	Rotronic	MP 101A-C5	31161	06385

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID

Technician

Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 3/8 teflon by 15meters
- 4 Describe dry dep sample tube. 3/8 teflon by 10 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	B	AT-81213-T12	000054
Zero air pump	Ecotech	8301LC	01-0658	none
Ozone	Monitor Labs, Inc.	ML9811	191	54901
Filter pack flow pump	Thomas	107CAB18	0000110	00498

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The ozone analyzer response to audit gas was observed to be very slow. This was discussed with the site operator, and it was recommended that the monitor averaging interval be changed to a shorter period. It was also suggested that the sample line be changed from 3/8 inch tubing to 1/4 inch tubing.

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID

Technician

Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Stable	Grounded
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Parameter	Manufacturer	Model	S/N	Client ID
DAS	Environmental Sys Corp	8832	A0656-b	73955
Modem	Raven	V4221-V	0808452827	06459
Printer	Hewlett Packard	6500A	unknown	none
Solar Radiation Translator	RM Young	70101-X	none	02533
Solar Radiation Translator	RM Young	70101-X	none	06630

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data logger	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Computer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Printer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	Oct 2001	<input type="checkbox"/>
HASP	<input type="checkbox"/>	Nov 2009	<input checked="" type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current? Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Quarterly"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input checked="" type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	<input checked="" type="checkbox"/>	Filter changed morinings
2	Are the Site Status Report Forms being completed and filed correctly?	<input checked="" type="checkbox"/>	
3	Are data downloads and backups being performed as scheduled?	<input type="checkbox"/>	No longer required
4	Are general observations being made and recorded? How?	<input checked="" type="checkbox"/>	SSRF, logbook
5	Are site supplies on-hand and replenished in a timely fashion?	<input checked="" type="checkbox"/>	
6	Are sample flow rates recorded? How?	<input checked="" type="checkbox"/>	SSRF, call-in
7	Are samples sent to the lab on a regular schedule in a timely fashion?	<input checked="" type="checkbox"/>	
8	Are filters protected from contamination during handling and shipping? How?	<input checked="" type="checkbox"/>	Clean gloves on and off
9	Are the site conditions reported regularly to the field operations manager or staff?	<input checked="" type="checkbox"/>	

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The site is well maintained and operated. Very good sample change out procedures are being used by the site operator.

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>CDZ171-Sandy Grenville-03/05/2013</i>						
1	3/5/2013	Computer	Dell	000281	D520	unknown
2	3/5/2013	DAS	Campbell	000352	CR3000	2130
3	3/5/2013	Elevation	Elevation	None	1	None
4	3/5/2013	Filter pack flow pump	Thomas	06020	107CAB18D	060400022646
5	3/5/2013	Flow Rate	Apex	000548	AXMC105LPMDPCV	50742
6	3/5/2013	Infrastructure	Infrastructure	none	none	none
7	3/5/2013	Modem	Raven	06457	V42221	0808338189
8	3/5/2013	Ozone	ThermoElectron Inc	000615	49i A1NAA	1009241787
9	3/5/2013	Ozone Standard	ThermoElectron Inc	000367	49i A3NAA	0726124683
10	3/5/2013	Sample Tower	Aluma Tower	000125	B	none
11	3/5/2013	Shelter Temperature	Campbell	none	107-L	none
12	3/5/2013	Siting Criteria	Siting Criteria	None	1	None
13	3/5/2013	Temperature	RM Young	06403	41342VC	14036
14	3/5/2013	UPS	APC	06793	RS900	unknown
15	3/5/2013	Zero air pump	Werther International	06899	PC70/4	000821902

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2130	CDZ171	Sandy Grenville	03/05/2013	DAS	Primary

Das Date:	<input type="text" value="3 /5 /2013"/>	Audit Date:	<input type="text" value="3 /5 /2013"/>
Das Time:	<input type="text" value="15:25:30"/>	Audit Time:	<input type="text" value="15:25:30"/>
Das Day:	<input type="text" value="64"/>	Audit Day:	<input type="text" value="64"/>
Low Channel:		High Channel:	
Avg Diff:	<input type="text" value="0.0001"/>	Max Diff:	<input type="text" value="0.0002"/>
		Avg Diff:	<input type="text" value="0.0001"/>
		Max Diff:	<input type="text" value="0.0002"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	-0.0001	0.0000	V	V	0.0001
7	0.1000	0.0998	0.0999	V	V	0.0001
7	0.3000	0.2997	0.2998	V	V	0.0001
7	0.5000	0.4996	0.4997	V	V	0.0001
7	0.7000	0.6995	0.6997	V	V	0.0002
7	0.9000	0.8995	0.8995	V	V	0.0000
7	1.0000	0.9994	0.9994	V	V	0.0000

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	50742		CDZ171	Sandy Grenville	03/05/2013	Flow Rate	000548

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
2.95%	3.18%
A Avg %Dif	A Max % Di

Cal Factor Zero	-0.01
Cal Factor Full Scale	0.99
Rotometer Reading:	1.5

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	0.00	0.0019	0.00	l/m	l/m	
primary	leak check	0.000	0.000	0.00	0.0038	0.00	l/m	l/m	
primary	test pt 1	1.532	1.535	1.52	1.5135	1.49	l/m	l/m	-2.93%
primary	test pt 2	1.530	1.532	1.52	1.5097	1.49	l/m	l/m	-2.74%
primary	test pt 3	1.536	1.539	1.52	1.5119	1.49	l/m	l/m	-3.18%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	225 deg	Status	pass
Sensor Component	Filter Depth	Condition	3.5 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	2.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241787		CDZ171	Sandy Grenville	03/05/2013	Ozone	000615

Slope:	1.01314	Slope:	0.00000
Intercept	-1.30738	Intercept	0.00000
CorrCoff	0.99996	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
0.7%	1.3%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.09	0.27	-1.37	ppb	
primary	2	35.26	35.40	35.06	ppb	-0.96%
primary	3	50.62	50.74	50.07	ppb	-1.32%
primary	4	80.34	80.42	80.29	ppb	-0.16%
primary	5	100.68	100.74	100.50	ppb	-0.24%

Sensor Component	Cell B Noise	Condition	0.7 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	< 1 %	Status	pass
Sensor Component	Offset	Condition	0.000	Status	pass
Sensor Component	Span	Condition	1.014	Status	pass
Sensor Component	Cell B Freq.	Condition	84.3 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.70 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	31.9 C	Status	pass
Sensor Component	Cell A Pressure	Condition	726 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.6 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	105.2 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.70 lpm	Status	pass
Sensor Component	Battery Backup	Condition	Functioning	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	14036		CDZ171	Sandy Grenville	03/05/2013	Temperature	06403

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.13	0.21		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	0.39	0.47	0.0000	0.4	C	-0.1
primary	Temp Mid Range	24.43	24.41	0.0000	24.6	C	0.21
primary	Temp High Range	47.54	47.42	0.0000	47.5	C	0.08

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	Blower	Condition	N/A	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8810"/>	<input type="text" value="640 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type B"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	CDZ171	Sandy Grenville	03/05/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
1.10	1.23		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	21.60	21.59	0.000	20.6	C	-1
primary	Temp Mid Range	22.98	22.96	0.000	21.9	C	-1.06
primary	Temp Mid Range	23.86	23.84	0.000	22.6	C	-1.23

Field Systems Comments

1 **Parameter:** SiteOpsProcComm

Tower is lowered and filter changed without downing ozone channel.

2 **Parameter:** ShelterCleanNotes

The shelter floor and door have been repaired since the previous audit visit. The shelter is still cluttered and dirty.

3 **Parameter:** SitingCriteriaCom

The site is in a corn field with limited agricultural operations within 15 meters.

4 **Parameter:** MetSensorComme

The temperature sensor has been installed in a naturally aspirated shield on the sample tower.

Field Systems Data Form

F-02058-1500-S1-rev001

Site ID Technician Site Visit Date

Site Sponsor (agency) USGS Map
 Operating Group Map Scale
 AQS # Map Date

Meteorological Type
 Air Pollutant Analyzer QAPP Latitude

Deposition Measurement QAPP Longitude
 Land Use QAPP Elevation Meters

Terrain QAPP Declination
 Conforms to MLM QAPP Declination Date

Site Telephone Audit Latitude
 Site Address 1 Audit Longitude
 Site Address 2 Audit Elevation
 County Audit Declination

City, State Present

Zip Code Fire Extinguisher

Time Zone First Aid Kit

Primary Operator Safety Glasses

Primary Op. Phone # Safety Hard Hat

Primary Op. E-mail Climbing Belt

Backup Operator Security Fence

Backup Op. Phone # Secure Shelter

Backup Op. E-mail Stable Entry Step

Shelter Working Room Make Model Shelter Size

Shelter Clean Notes

Site OK Notes

Driving Directions

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text" value="15 m"/>	<input type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The temperature sensor has been installed in a naturally aspirated shield on the sample tower.

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

1	Do all the meteorological sensors appear to be intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	<input checked="" type="checkbox"/>	Temperature only
3	Are the shields for the temperature and RH sensors clean?	<input checked="" type="checkbox"/>	
4	Are the aspirated motors working?	<input checked="" type="checkbox"/>	N/A
5	Is the solar radiation sensor's lens clean and free of scratches?	<input checked="" type="checkbox"/>	N/A
6	Is the surface wetness sensor grid clean and undamaged?	<input checked="" type="checkbox"/>	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	<input checked="" type="checkbox"/>	

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	RM Young	41342VC	14036	06403

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 18 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 15 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	B	none	000125
Ozone	ThermoElectron Inc	49i A1NAA	1009241787	000615
Filter pack flow pump	Thomas	107CAB18D	060400022646	06020
Zero air pump	Werther International	PC70/4	000821902	06899

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D520	unknown	000281
DAS	Campbell	CR3000	2130	000352
Modem	Raven	V42221	0808338189	06457
UPS	APC	RS900	unknown	06793

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	Oct 2001	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2009	<input type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID Technician Site Visit Date

Site operation procedures

- | | | | |
|---|--|-------------------------------------|---|
| 1 | Is the filter pack being changed every Tuesday as scheduled? | <input checked="" type="checkbox"/> | Filter changed afternoons (90% of the time) |
| 2 | Are the Site Status Report Forms being completed and filed correctly? | <input checked="" type="checkbox"/> | |
| 3 | Are data downloads and backups being performed as scheduled? | <input type="checkbox"/> | No longer required |
| 4 | Are general observations being made and recorded? How? | <input checked="" type="checkbox"/> | SSRF |
| 5 | Are site supplies on-hand and replenished in a timely fashion? | <input checked="" type="checkbox"/> | |
| 6 | Are sample flow rates recorded? How? | <input checked="" type="checkbox"/> | SSRF, call-in |
| 7 | Are samples sent to the lab on a regular schedule in a timely fashion? | <input checked="" type="checkbox"/> | |
| 8 | Are filters protected from contamination during handling and shipping? How? | <input checked="" type="checkbox"/> | One set of gloves only |
| 9 | Are the site conditions reported regularly to the field operations manager or staff? | <input checked="" type="checkbox"/> | |

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input type="checkbox"/>	<input type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Tower is lowered and filter changed without downing ozone channel.

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>MCK131-Sandy Grenville-03/06/2013</i>						
1	3/6/2013	Computer	Dell	000457	D520	unknown
2	3/6/2013	DAS	Campbell	000429	CR3000	2535
3	3/6/2013	Elevation	Elevation	None	1	None
4	3/6/2013	Filter pack flow pump	Thomas	00497	107CA18	118700000596
5	3/6/2013	Flow Rate	Apex	000528	AXMC105LPM DPCV	48097
6	3/6/2013	Infrastructure	Infrastructure	none	none	none
7	3/6/2013	Modem	Raven	06477	H4222-C	0808311292
8	3/6/2013	Ozone	ThermoElectron Inc	000683	49i A1NAA	1030244798
9	3/6/2013	Ozone Standard	ThermoElectron Inc	000441	49i A3NAA	CM08200017
10	3/6/2013	Sample Tower	Aluma Tower	03514	A	none
11	3/6/2013	Shelter Temperature	Campbell	none	107-L	none
12	3/6/2013	Siting Criteria	Siting Criteria	None	1	None
13	3/6/2013	Temperature	RM Young	06543	41342VC	14804
14	3/6/2013	Zero air pump	Werther International	06912	PC70/4	000829177

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2535	MCK131	Sandy Grenville	03/06/2013	DAS	Primary

Das Date:	<input type="text" value="3 /6 /2013"/>	Audit Date	<input type="text" value="3 /6 /2013"/>
Das Time:	<input type="text" value="17:57:49"/>	Audit Time	<input type="text" value="17:57:50"/>
Das Day:	<input type="text" value="65"/>	Audit Day	<input type="text" value="65"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0001"/>	<input type="text" value="0.0002"/>	<input type="text" value="0.0001"/>	<input type="text" value="0.0002"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	-0.0001	0.0000	V	V	0.0001
7	0.1000	0.0998	0.0996	V	V	-0.0002
7	0.3000	0.2997	0.2998	V	V	0.0001
7	0.5000	0.4996	0.4997	V	V	0.0001
7	0.7000	0.6995	0.6997	V	V	0.0002
7	0.9000	0.8994	0.8996	V	V	0.0002
7	1.0000	0.9994	0.9995	V	V	0.0001

Flow Data Form

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	48097	MCK131	Sandy Grenville	03/06/2013	Flow Rate	000528

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
0.24%	0.40%
A Avg %Dif	A Max % Di

Cal Factor Zero	-0.01
Cal Factor Full Scale	1
Rotometer Reading:	1.5

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	0.00	0.002	0.00	l/m	l/m	
primary	leak check	0.000	0.000	0.00	0.002	0.00	l/m	l/m	
primary	test pt 1	1.496	1.502	1.50	1.489	1.50	l/m	l/m	-0.13%
primary	test pt 2	1.497	1.503	1.50	1.490	1.50	l/m	l/m	-0.20%
primary	test pt 3	1.500	1.506	1.50	1.491	1.50	l/m	l/m	-0.40%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	Not tested	Status	pass
Sensor Component	Filter Depth	Condition	1.5 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	5.0 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244798		MCK131	Sandy Grenville	03/06/2013	Ozone	000683

Slope:	1.01600	Slope:	0.00000
Intercept	-0.62386	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
0.5%	1.2%

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.20	0.38	-0.17	ppb	
primary	2	35.77	35.91	35.92	ppb	0.03%
primary	3	51.51	51.63	51.69	ppb	0.12%
primary	4	80.03	80.11	80.60	ppb	0.61%
primary	5	101.95	102.01	103.20	ppb	1.17%

Sensor Component	Cell B Noise	Condition	1.4 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	< 1 %	Status	pass
Sensor Component	Offset	Condition	-0.2	Status	pass
Sensor Component	Span	Condition	1.039	Status	pass
Sensor Component	Cell B Freq.	Condition	81.4 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	30.9 C	Status	pass
Sensor Component	Cell A Pressure	Condition	739 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	2.0 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	111.7 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.71 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	14804		MCK131	Sandy Grenville	03/06/2013	Temperature	06543

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.08	0.12		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.11	-0.03	0.000	-0.2	C	-0.12
primary	Temp Mid Range	25.70	25.67	0.000	25.6	C	-0.12
primary	Temp High Range	49.00	48.87	0.000	48.9	C	-0.01

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	Functioning	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8810"/>	<input type="text" value="640 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	MCK131	Sandy Grenville	03/06/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
1.53	1.70		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	18.80	18.80	0.000	17.1	C	-1.7
primary	Temp Mid Range	19.00	19.00	0.000	17.5	C	-1.5
primary	Temp Mid Range	19.30	19.30	0.000	17.9	C	-1.4

Field Systems Comments

1 **Parameter:** ShelterCleanNotes

The shelter is neat, clean, and well organized.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Mackville"/>
Operating Group	<input type="text" value="Private"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="21-229-9991"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="R.M. Young"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text" value="37.7044"/>
Deposition Measurement	<input type="text" value="dry, wet"/>	QAPP Longitude	<input type="text" value="-85.0483"/>
Land Use	<input type="text" value="agriculture, woodland - mixed"/>	QAPP Elevation Meters	<input type="text" value="353"/>
Terrain	<input type="text" value="rolling"/>	QAPP Declination	<input type="text" value="4.25"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text" value="12/28/2004"/>
Site Telephone	<input type="text" value="(859) 262-5181"/>	Audit Latitude	<input type="text" value="37.704678"/>
Site Address 1	<input type="text" value="Westley Miller Road"/>	Audit Longitude	<input type="text" value="-85.048706"/>
Site Address 2	<input type="text"/>	Audit Elevation	<input type="text" value="293"/>
County	<input type="text" value="Washington"/>	Audit Declination	<input type="text" value="-4.5"/>
City, State	<input type="text" value="Harrodsburg, KY"/>		
Zip Code	<input type="text" value="40330"/>	Present	
Time Zone	<input type="text" value="Eastern"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="Inspected Nov 1992"/>
Primary Operator	<input type="text" value="Belinda Warden"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(859) 262-0386"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="bawarden@bellsouth.net"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="none"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text"/>	Security Fence <input type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
		Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>

Shelter Working Room Make Model Shelter Size

Shelter Clean Notes

Site OK Notes

Driving Directions

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

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Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

1	Do all the meteorological sensors appear to be intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	<input checked="" type="checkbox"/>	Temperature only
3	Are the shields for the temperature and RH sensors clean?	<input checked="" type="checkbox"/>	
4	Are the aspirated motors working?	<input checked="" type="checkbox"/>	
5	Is the solar radiation sensor's lens clean and free of scratches?	<input checked="" type="checkbox"/>	N/A
6	Is the surface wetness sensor grid clean and undamaged?	<input checked="" type="checkbox"/>	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	<input checked="" type="checkbox"/>	

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	RM Young	41342VC	14804	06543

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 15 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	A	none	03514
Ozone	ThermoElectron Inc	49i A1NAA	1030244798	000683
Filter pack flow pump	Thomas	107CA18	118700000596	00497
Zero air pump	Werther International	PC70/4	000829177	06912

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D520	unknown	000457
DAS	Campbell	CR3000	2535	000429
Modem	Raven	H4222-C	0808311292	06477

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	Oct 2001	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2009	<input type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	Electronic copy	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current?

Control charts not used	

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID Technician Site Visit Date

Site operation procedures

- | | | | |
|---|--|-------------------------------------|--------------------------|
| 1 | Is the filter pack being changed every Tuesday as scheduled? | <input checked="" type="checkbox"/> | Filter changed morinings |
| 2 | Are the Site Status Report Forms being completed and filed correctly? | <input checked="" type="checkbox"/> | |
| 3 | Are data downloads and backups being performed as scheduled? | <input type="checkbox"/> | No longer required |
| 4 | Are general observations being made and recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook |
| 5 | Are site supplies on-hand and replenished in a timely fashion? | <input checked="" type="checkbox"/> | |
| 6 | Are sample flow rates recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook, call-in |
| 7 | Are samples sent to the lab on a regular schedule in a timely fashion? | <input checked="" type="checkbox"/> | |
| 8 | Are filters protected from contamination during handling and shipping? How? | <input checked="" type="checkbox"/> | Clean gloves on and off |
| 9 | Are the site conditions reported regularly to the field operations manager or staff? | <input checked="" type="checkbox"/> | |

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> As needed	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>MCK231-Sandy Grenville-03/06/2013</i>						
1	3/6/2013	Computer	Dell	000458	D530	unknown
2	3/6/2013	DAS	Campbell	000359	CR3000	2137
3	3/6/2013	Elevation	Elevation	None	1	None
4	3/6/2013	Filter pack flow pump	Thomas	04513	107CAB18B	110000014171
5	3/6/2013	Flow Rate	Mykrolis	000236	FC280SAV	AW06273002
6	3/6/2013	Infrastructure	Infrastructure	none	none	none
7	3/6/2013	MFC power supply	MACTEC	04998	none	none
8	3/6/2013	Modem	Raven	06476	H4222-C	0808311140
9	3/6/2013	Ozone	ThermoElectron Inc	000680	49i A1NAA	1030244792
10	3/6/2013	Ozone Standard	ThermoElectron Inc	000439	49i A3NAA	CM08200015
11	3/6/2013	Shelter Temperature	Campbell	none	107-L	none
12	3/6/2013	Siting Criteria	Siting Criteria	None	1	None
13	3/6/2013	Temperature	RM Young	06542	41342VC	14803
14	3/6/2013	Zero air pump	Werther International	06924	C 70/4	000836205

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2137	MCK231	Sandy Grenville	03/06/2013	DAS	Primary

Das Date:	<input type="text" value="3 /6 /2013"/>	Audit Date:	<input type="text" value="3 /6 /2013"/>
Das Time:	<input type="text" value="17:55:20"/>	Audit Time:	<input type="text" value="17:55:20"/>
Das Day:	<input type="text" value="65"/>	Audit Day:	<input type="text" value="65"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0001"/>	<input type="text" value="0.0002"/>	<input type="text" value="0.0001"/>	<input type="text" value="0.0002"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	0.0000	0.0000	V	V	0.0000
7	0.1000	0.0998	0.0999	V	V	0.0001
7	0.3000	0.2997	0.2998	V	V	0.0001
7	0.5000	0.4996	0.4998	V	V	0.0002
7	0.7000	0.6995	0.6997	V	V	0.0002
7	0.9000	0.8995	0.8996	V	V	0.0001
7	1.0000	0.9993	0.9995	V	V	0.0002

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Mykrolis	AW06273002		MCK231	Sandy Grenville	03/06/2013	Flow Rate	000236

Mfg	MACTEC	
SN/Owner ID	none	04998
Parameter	MFC power supply	

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
2.81%	2.98%
A Avg %Dif	A Max % Di

Cal Factor Zero	0
Cal Factor Full Scale	1
Rotometer Reading:	1.5

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	-0.15	-0.142	-0.03	l/m	l/m	
primary	leak check	0.000	0.000	-0.15	-0.146	-0.04	l/m	l/m	
primary	test pt 1	1.539	1.542	1.28	1.283	1.50	l/m	l/m	-2.72%
primary	test pt 2	1.539	1.542	1.28	1.283	1.50	l/m	l/m	-2.72%
primary	test pt 3	1.542	1.546	1.28	1.283	1.50	l/m	l/m	-2.98%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	135 deg	Status	pass
Sensor Component	Filter Depth	Condition	1.5 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	4.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244792	MCK231	Sandy Grenville	03/06/2013	Ozone	000680

Slope:	0.86335	Slope:	0.00000
Intercept	-1.19057	Intercept	0.00000
CorrCoff	0.99997	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
15.7%	17.1%

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.12	0.30	-0.94	ppb	
primary	2	38.00	38.13	31.61	ppb	-17.10%
primary	3	49.85	49.97	42.26	ppb	-15.43%
primary	4	80.51	80.59	68.03	ppb	-15.59%
primary	5	101.77	101.83	86.90	ppb	-14.66%

Sensor Component	Cell B Noise	Condition	1.1 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	< 1 %	Status	pass
Sensor Component	Offset	Condition	-0.01	Status	pass
Sensor Component	Span	Condition	1.02	Status	pass
Sensor Component	Cell B Freq.	Condition	94.0 kHz	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.71 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	29.3 C	Status	pass
Sensor Component	Cell A Pressure	Condition	723 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	95.2 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.70 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	14803		MCK231	Sandy Grenville	03/06/2013	Temperature	06542

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.15	0.30		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.11	-0.03	0.000	0.0	C	0.02
primary	Temp Mid Range	25.70	25.67	0.000	25.6	C	-0.12
primary	Temp High Range	49.00	48.87	0.000	48.6	C	-0.3

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	Functioning	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8810"/>	<input type="text" value="640 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	MCK231	Sandy Grenville	03/06/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
1.11	1.25		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	21.30	21.29	0.000	20.0	C	-1.25
primary	Temp Mid Range	22.61	22.60	0.000	21.5	C	-1.07
primary	Temp Mid Range	20.40	20.40	0.000	19.4	C	-1

Field Systems Comments

1 **Parameter:** ShelterCleanNotes

The site instruments are located in the MCK131 shelter. The same site operator is servicing both sites.

2 **Parameter:** PollAnalyzerCom

The ozone analyzer failed the performance evaluation. The field operations staff at AMEC were aware of the problem and had sent a replacement ozone monitor to the site operator for installation. The site operator had not been informed of the problem and had not replaced the site monitor prior to the audit visit. The site will be revisited for an ozone PE following the replacement of the site ozone analyzer.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Mackville"/>
Operating Group	<input type="text" value="Private"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="21-229-9991"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="R.M. Young"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text" value="37.7044"/>
Deposition Measurement	<input type="text" value="dry, wet"/>	QAPP Longitude	<input type="text" value="-85.0483"/>
Land Use	<input type="text" value="agriculture, woodland - mixed"/>	QAPP Elevation Meters	<input type="text" value="353"/>
Terrain	<input type="text" value="rolling"/>	QAPP Declination	<input type="text" value="4.25"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text" value="12/28/2004"/>
Site Telephone	<input type="text" value="(859) 262-5181"/>	Audit Latitude	<input type="text" value="37.704678"/>
Site Address 1	<input type="text" value="Wesley Miller Road"/>	Audit Longitude	<input type="text" value="-85.048706"/>
Site Address 2	<input type="text"/>	Audit Elevation	<input type="text" value="293"/>
County	<input type="text" value="Washington"/>	Audit Declination	<input type="text" value="-4.5"/>
City, State	<input type="text" value="Harrodsburg, KY"/>		
Zip Code	<input type="text" value="40330"/>	Present	
Time Zone	<input type="text" value="Eastern"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="Inspected Nov 1992"/>
Primary Operator	<input type="text" value="Belinda Warden"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(859) 262-0386"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="bawarden@bellsouth.net"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="none"/>	Climbing Belt <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text"/>	Security Fence <input type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
		Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>

Shelter Working Room Make Model Shelter Size

Shelter Clean Notes

Site OK Notes

Driving Directions

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

1	Do all the meteorological sensors appear to be intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	<input checked="" type="checkbox"/>	Temperature only
3	Are the shields for the temperature and RH sensors clean?	<input checked="" type="checkbox"/>	
4	Are the aspirated motors working?	<input checked="" type="checkbox"/>	
5	Is the solar radiation sensor's lens clean and free of scratches?	<input checked="" type="checkbox"/>	N/A
6	Is the surface wetness sensor grid clean and undamaged?	<input checked="" type="checkbox"/>	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	<input checked="" type="checkbox"/>	

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	RM Young	41342VC	14803	06542

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID

Technician

Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- | | | | |
|---|---|-------------------------------------|--|
| 1 | Do the sample inlets have at least a 270 degree arc of unrestricted airflow? | <input checked="" type="checkbox"/> | |
| 2 | Are the sample inlets 3 - 15 meters above the ground? | <input checked="" type="checkbox"/> | |
| 3 | Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees? | <input checked="" type="checkbox"/> | |

Pollutant analyzers and deposition equipment operations and maintenance

- | | | | |
|---|--|-------------------------------------|-------------------------|
| 1 | Do the analyzers and equipment appear to be in good condition and well maintained? | <input checked="" type="checkbox"/> | |
| 2 | Are the analyzers and monitors operational, on-line, and reporting data? | <input checked="" type="checkbox"/> | |
| 3 | Describe ozone sample tube. | | 1/4 teflon by 15 meters |
| 4 | Describe dry dep sample tube. | | 3/8 teflon by 13 meters |
| 5 | Are in-line filters used in the ozone sample line? (if yes indicate location) | <input checked="" type="checkbox"/> | At inlet only |
| 6 | Are sample lines clean, free of kinks, moisture, and obstructions? | <input checked="" type="checkbox"/> | |
| 7 | Is the zero air supply desiccant unsaturated? | <input checked="" type="checkbox"/> | |
| 8 | Are there moisture traps in the sample lines? | <input checked="" type="checkbox"/> | |
| 9 | Is there a rotometer in the dry deposition filter line, and is it clean? | <input checked="" type="checkbox"/> | Clean and dry |

Parameter	Manufacturer	Model	S/N	Client ID
MFC power supply	MACTEC	none	none	04998
Ozone	ThermoElectron Inc	49i A1NAA	1030244792	000680
Filter pack flow pump	Thomas	107CAB18B	110000014171	04513
Zero air pump	Werther International	C 70/4	000836205	06924

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The ozone analyzer failed the performance evaluation. The field operations staff at AMEC were aware of the problem and had sent a replacement ozone monitor to the site operator for installation. The site operator had not been informed of the problem and had not replaced the site monitor prior to the audit visit. The site will be revisited for an ozone PE following the replacement of the site ozone analyzer.

Field Systems Data Form

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Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Stable	Grounded
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D530	unknown	000458
DAS	Campbell	CR3000	2137	000359
Modem	Raven	H4222-C	0808311140	06476

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
HASP	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	Electronic copy	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current? Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID Technician Site Visit Date

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	<input checked="" type="checkbox"/>	Filter changed morinings
2	Are the Site Status Report Forms being completed and filed correctly?	<input checked="" type="checkbox"/>	
3	Are data downloads and backups being performed as scheduled?	<input type="checkbox"/>	No longer required
4	Are general observations being made and recorded? How?	<input checked="" type="checkbox"/>	SSRF, logbook
5	Are site supplies on-hand and replenished in a timely fashion?	<input checked="" type="checkbox"/>	
6	Are sample flow rates recorded? How?	<input checked="" type="checkbox"/>	SSRF, logbook, call-in
7	Are samples sent to the lab on a regular schedule in a timely fashion?	<input checked="" type="checkbox"/>	
8	Are filters protected from contamination during handling and shipping? How?	<input checked="" type="checkbox"/>	Clean gloves on and off
9	Are the site conditions reported regularly to the field operations manager or staff?	<input checked="" type="checkbox"/>	

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> As needed	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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BBE401-Eric Hebert-03/06/2013

1	3/6/2013	Computer	Gateway	90699	Solo	0018986902
2	3/6/2013	DAS	Environmental Sys Corp	90665	8816	2689
3	3/6/2013	Elevation	Elevation	None	1	None
4	3/6/2013	F460 translator	Climatronics	none	100163	688
5	3/6/2013	Filter pack flow pump	Thomas	none	107CAB18B	070000012920
6	3/6/2013	flow rate	Tylan	03392	FC280AV	AW9403018
7	3/6/2013	Infrastructure	Infrastructure	none	none	none
8	3/6/2013	Mainframe	Climatronics	01847	100081	1426
9	3/6/2013	Mainframe power supply	Climatronics	none	101074	unknown
10	3/6/2013	Met tower	Universal Tower	none	unknown	none
11	3/6/2013	MFC power supply	Tylan	03680	RO-32	FP9403013
12	3/6/2013	Modem	US Robotics	none	V.92	unknown
13	3/6/2013	Ozone	ThermoElectron Inc	90517	49C	49C-58468-318
14	3/6/2013	Ozone Standard	ThermoElectron Inc	90832	49C	520012326
15	3/6/2013	Precipitation	Climatronics	01474	100508-2	illegible
16	3/6/2013	Printer	Hewlett Packard	none	842C	unknown
17	3/6/2013	Relative Humidity	Rotronic	none	MP 601A	59221
18	3/6/2013	Sample Tower	Aluma Tower	none	B	AT-5381-F9-1
19	3/6/2013	Shelter Temperature	ARS	none	none	none
20	3/6/2013	Shield (10 meter)	Climatronics	00390	100325	1275
21	3/6/2013	Shield (2 meter)	Climatronics	01497	100325	illegible
22	3/6/2013	Siting Criteria	Siting Criteria	None	1	None
23	3/6/2013	Solar Radiation	Licor	none	LI-200	PY35732
24	3/6/2013	Solar Radiation Translator	Climatronics	none	100144	385
25	3/6/2013	Temperature	Climatronics	01049	100093	missing
26	3/6/2013	Temperature Translator	Climatronics	none	100088-2	482
27	3/6/2013	Wind Direction	Climatronics	90885	100076	1813
28	3/6/2013	Wind Speed	Climatronics	90921	100075	1725

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
29	3/6/2013	Zero air pump	Werther International	none	PC70/4	606489

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Environmental Sys	2689	BBE401	Eric Hebert	03/06/2013	DAS	Primary

Das Date: **Audit Date:**
Das Time: **Audit Time:**
Das Day: **Audit Day:**

Low Channel: **High Channel:**
Avg Diff: **Max Diff:** **Avg Diff:** **Max Diff:**

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="4000392"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01321"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="86590148"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01310"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/27/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
2	0.0000	0.0000	0.0000	V	V	0.0000
2	0.1000	0.1000	0.1000	V	V	0.0000
2	0.3000	0.3000	0.3000	V	V	0.0000
2	0.5000	0.5000	0.5000	V	V	0.0000
2	0.7000	0.7000	0.7000	V	V	0.0000
2	0.9000	0.9000	0.9000	V	V	0.0000
2	1.0000	1.0001	1.0001	V	V	0.0000
10	0.0000	0.0000	0.0000	V	V	0.0000
10	0.1000	0.1000	0.1000	V	V	0.0000
10	0.3000	0.3000	0.3000	V	V	0.0000
10	0.5000	0.5000	0.5000	V	V	0.0000
10	0.7000	0.7000	0.7000	V	V	0.0000
10	0.9000	0.9000	0.9000	V	V	0.0000
10	1.0000	1.0001	1.0000	V	V	-0.0001

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Tylan	AW9403018		BBE401	Eric Hebert	03/06/2013	flow rate	03392

Mfg	Tylan
SN/Owner ID	FP9403013 03680
Parameter	MFC power supply

Mfg	BIOS	Parameter	Flow Rate
Serial Number	122974	Tfer Desc.	BIOS 220-H
Tfer ID	01416		
Slope	1.00000	Intercept	0.00000
Cert Date	1/8/2013	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
0.43%	0.70%

Cal Factor Zero	0.07
Cal Factor Full Scale	5.37
Rotometer Reading:	3.05

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	-0.02	0.011	0.08	l/m	l/m	
primary	leak check	0.000	0.000	-0.03	0.003	0.07	l/m	l/m	
primary	test pt 1	0.000	2.969	3.04	2.755	2.99	l/m	l/m	0.70%
primary	test pt 2	0.000	2.978	3.04	2.755	2.99	l/m	l/m	0.41%
primary	test pt 3	0.000	2.985	3.04	2.755	2.99	l/m	l/m	0.17%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	Not tested	Status	pass
Sensor Component	Filter Depth	Condition	0.5 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	5.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	49C-58468-318		BBE401	Eric Hebert	03/06/2013	Ozone	90517

Slope:	0.98260	Slope:	0.00000
Intercept	2.09900	Intercept	0.00000
CorrCoff	0.99991	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
2.0%	3.5%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	517112175	Tfer Desc.	Ozone primary stan
Tfer ID	01111		
Slope	0.99720	Intercept	0.18428
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.26	0.07	2.31	ppb	
primary	2	29.17	29.06	30.07	ppb	3.48%
primary	3	52.05	52.01	53.55	ppb	2.96%
primary	4	79.97	80.00	81.29	ppb	1.61%
primary	5	97.66	97.74	97.65	ppb	-0.09%

Sensor Component	Cell B Noise	Condition	2.9 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	1.0005	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	-2.3	Status	pass
Sensor Component	Span	Condition	1.018	Status	pass
Sensor Component	Cell B Freq.	Condition	80.8 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.69 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	37.7 C	Status	pass
Sensor Component	Cell A Pressure	Condition	657 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	3.0 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	86.4 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.66 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	0.0006	Status	pass

Wind Speed Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	1725		BBE401	Eric Hebert	03/06/2013	Wind Speed	90921

Mfg	Climatronics
SN/Owner ID	688 none
Parameter	F460 translator

Prop or Cups SN	1967
Prop or Cups Torque	0.2 to 0.3
Prop Correction Fact	N/A

Mfg	RM Young	Parameter	wind speed
Serial Number		Tfer Desc.	wind speed motor (h
Tfer ID	01262		
Slope	1.00000	Intercept	0.00000
Cert Date	1/13/2010	CorrCoff	1.00000
Mfg	RM Young	Parameter	wind speed
Serial Number		Tfer Desc.	wind speed motor (l
Tfer ID	01261		
Slope	1.00000	Intercept	0.00000
Cert Date	1/13/2010	CorrCoff	1.00000

	DAS 1:		DAS 2:	
	Low Range	High Range	Low Range	High Range
Abs Avg Err	0.01	0.21%		
Abs Max Er	0.03	0.42%		

UseDescription:	InputDevice:	Input RPM:	Input m/s:	Output V:	DAS m/s:	Diff/ %Diff:	Difference:
primary	none	0	0.20	0.000	0.2		0.00
primary	01261	50	1.40	0.000	1.4		0.00
primary	01261	100	2.57	0.000	2.6		0.03
primary	01261	170	4.22	0.000	4.2		-0.02
primary	01261	250	6.10	0.000	6.1	0.00%	
primary	01262	500	11.97	0.000	12.0	0.25%	
primary	01262	800	19.02	0.000	19.1	0.42%	
primary	01262	2000	47.22	0.000	47.3	0.17%	

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sensor Plumb	Condition	Plumb	Status	pass
Sensor Component	Sensor Heater	Condition	N/A	Status	pass
Sensor Component	Prop or Cups Condition	Condition	Good	Status	pass
Sensor Component	Condition	Condition	Good	Status	pass
Sensor Component	Torque	Condition		Status	pass

Wind Direction Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	1813		BBE401	Eric Hebert	03/06/2013	Wind Direction	90885

Mfg	Climatronics
SN/Owner ID	688 none
Parameter	F460 translator

Vane SN: 36 C. A. Align. deg. true:
 Vane Torque 10 to 10 360

Mfg	Ushikata	Parameter	wind direction
Serial Number	190037	Tfer Desc.	transit
Tfer ID	01265		
Slope	1.00000	Intercept	0.00000
Cert Date	1/4/2011	CorrCoff	1.00000
Mfg	RM Young	Parameter	wind direction
Serial Number		Tfer Desc.	wind direction wheel
Tfer ID	01266		

DAS 1:	DAS 2:		
Orientation	Linearity:	Orientation	Linearity:
Abs Avg Err 1.8	0.8		
Abs Max Er 3	2		

UseDescription:	TferID:	Input Raw:	Linearity	Output V:	Output Deg.:	Difference:	Change:	Error:
primary	01266	0	<input checked="" type="checkbox"/>	0.000	359	1	44	-1
primary	01266	45	<input checked="" type="checkbox"/>	0.000	42	3	43	-2
primary	01266	90	<input checked="" type="checkbox"/>	0.000	87	3	45	0
primary	01266	135	<input checked="" type="checkbox"/>	0.000	132	3	45	0
primary	01266	180	<input checked="" type="checkbox"/>	0.000	178	2	46	1
primary	01266	225	<input checked="" type="checkbox"/>	0.000	224	1	46	1
primary	01266	270	<input checked="" type="checkbox"/>	0.000	269	1	45	0
primary	01266	315	<input checked="" type="checkbox"/>	0.000	315	0	46	1
primary	01265	90	<input type="checkbox"/>	0.000	87	3		3
primary	01265	180	<input type="checkbox"/>	0.000	178	2		2
primary	01265	270	<input type="checkbox"/>	0.000	269	1		1
primary	01265	360	<input type="checkbox"/>	0.000	359	1		1

Sensor Component	Mast	Condition	Good	Status	pass
Sensor Component	Condition	Condition	Good	Status	pass
Sensor Component	Sensor Heater	Condition	N/A	Status	pass
Sensor Component	Sensor Plumb	Condition	Plumb	Status	pass
Sensor Component	Torque	Condition		Status	pass
Sensor Component	Vane Condition	Condition	Good	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	missing		BBE401	Eric Hebert	03/06/2013	Temperature	01049

Mfg	Climatronics
SN/Owner ID	482 none
Parameter	Temperature Translator

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:	DAS 2:		
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.16	0.22		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.10	0.02	0.000	0.2	C	0.14
primary	Temp Mid Range	29.23	29.14	0.000	29.3	C	0.12
primary	Temp High Range	46.44	46.23	0.000	46.5	C	0.22

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Humidity Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Rotronic	59221		BBE401	Eric Hebert	03/06/2013	Relative Humidity	none

Mfg	Rotronic	Parameter	Relative Humidity
Serial Number	124432	Tfer Desc.	Hygroclip
Tfer ID	01225		
Slope	1.00000	Intercept	0.00000
Cert Date	1/29/2013	CorrCoff	1.00000

DAS 1:

DAS 2:

	Low Range	High Range	Low Range	High Range
Abs Avg Err	1.9	2.0		
Abs Max Er	2.5	2.0		

UseDesc.:	Test type:	Device:	Input RH:	GTL Raw:	RH Corr.:	DAS Volts:	DAS %RH:	Difference:
primary	RH Low Range	Hygroclip	32.8	34.1	32.8	0.340	34.0	1.2
primary	RH Low Range	Hygroclip	52.9	52.0	52.9	0.554	55.4	2.5
primary	RH High Range	Hygroclip	93.6	90.3	93.6	0.916	91.6	-2.0

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	RH Filter	Condition	Clean	Status	pass
Sensor Component	Shield	Condition	Clean	Status	pass

Solar Radiation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Licor	PY35732		BBE401	Eric Hebert	03/06/2013	Solar Radiation	none

Mfg	Climatronics	
SN/Owner ID	385	none
Parameter	Solar Radiation Translator	

Mfg	Eppley	Parameter	solar radiation
Serial Number	10765	Tfer Desc.	SR transfer translat
Tfer ID	01246		
Slope	1.00000	Intercept	0.00000
Cert Date	1/6/2010	CorrCoff	1.00000
Mfg	Eppley	Parameter	solar radiation
Serial Number	34341F3	Tfer Desc.	SR transfer sensor
Tfer ID	01245		
Slope	1.00000	Intercept	0.00000
Cert Date	12/16/2010	CorrCoff	1.00000

DAS 1:	DAS 2:		
% Diff of Avg	%Diff of Max	%Diff of Avg	%Diff of Max

9.0%	8.7%	0.0%	0.0%
------	------	------	------

UseDescription:	Measure Date	MeasureTime	Tfer Corr:	DAS w/m2:	PctDifference:
primary	3/6/2013	10:00	510	549	7.6%
primary	3/6/2013	11:00	517	567	9.7%
primary	3/6/2013	12:00	690	750	8.7%
primary	3/6/2013	13:00	755	821	8.7%
primary	3/6/2013	14:00	589	648	10.0%

Sensor Component	Sensor Level	Condition	Level	Status	pass
Sensor Component	Sensor Clean	Condition	Clean	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Precipitation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Climatronics	illegible		BBE401	Eric Hebert	03/06/2013	Precipitation	01474

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
3.0%	4.0%		

Mfg	PMP	Parameter	Precipitation
Serial Number	EW-06134-50	Tfer Desc.	250ml graduate
Tfer ID	01250		
Slope	1.00000	Intercept	0.00000
Cert Date	9/5/2005	CorrCoff	1.00000

UseDesc.	Test type:	TferVolume:	Iteration:	TimePerTip:	Eq.Ht:	DAS eng:	Eq.HtUnit:	OSE Unit:	TferUnits:	PctDifference
primary	tip check	10 manual	1	2 sec	1.00	1.00	mm	mm	ml	
primary	test 1	231.5	1	12 sec	5.00	5.20	mm	mm	ml	4.0%
primary	test 2	231.5	2	8 sec	5.00	5.10	mm	mm	ml	2.0%

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sensor Heater	Condition	Not functioning	Status	Fail
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	Gauge Drain Screen	Condition	Not installed	Status	Fail
Sensor Component	Level	Condition	Level	Status	pass
Sensor Component	Gauge Clean	Condition	Clean	Status	pass
Sensor Component	Funnel Clean	Condition	Clean	Status	pass
Sensor Component	Condition	Condition	Good	Status	pass
Sensor Component	Gauge Screen	Condition	Installed	Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8814"/>	<input type="text" value="896 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type B"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
ARS	none	BBE401	Eric Hebert	03/06/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.44	0.61		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	21.63	21.60	0.000	22.2	C	0.61
primary	Temp Mid Range	24.32	24.27	0.000	23.9	C	-0.39
primary	Temp Mid Range	25.19	25.13	0.000	24.8	C	-0.32

Field Systems Comments

1 Parameter: SiteOpsProcedures

The ozone sample line is leak tested every month when the inlet filter is replaced.

2 Parameter: ShelterCleanNotes

The shelter is clean, neat, and well organized.

3 Parameter: MetOpMaintCom

The signal cables are showing signs of wear. The precipitation gage signal cable is in poor condition.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="NPS/EPA"/>	USGS Map	<input type="text" value="Panther Junction"/>
Operating Group	<input type="text" value="NPS"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="48-043-0101"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="Climatronics"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone, IMPROVE, PM2.5"/>	QAPP Latitude	<input type="text" value="29.3022"/>
Deposition Measurement	<input type="text" value="dry, wet"/>	QAPP Longitude	<input type="text" value="-103.1772"/>
Land Use	<input type="text" value="desert"/>	QAPP Elevation Meters	<input type="text" value="1052"/>
Terrain	<input type="text" value="complex"/>	QAPP Declination	<input type="text"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text"/>
Site Telephone	<input type="text" value="(432) 477-2258"/>	Audit Latitude	<input type="text" value="29.302651"/>
Site Address 1	<input type="text" value="K-Bar Ranch"/>	Audit Longitude	<input type="text" value="-103.177813"/>
Site Address 2	<input type="text" value="Big Bend National Park"/>	Audit Elevation	<input type="text" value="1057"/>
County	<input type="text" value="Brewster"/>	Audit Declination	<input type="text" value="7.0"/>
City, State	<input type="text" value="Big Bend National Park, TX"/>		
Zip Code	<input type="text" value="79834"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="Inspected Nov 2009"/>
Time Zone	<input type="text" value="Central"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Operator	<input type="text" value="Keith Sauter"/>	Safety Glasses <input type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(432) 477-1150"/>	Safety Hard Hat <input type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="Keith_Sauter@nps.gov"/>	Climbing Belt <input type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Jeff Bennett"/>	Security Fence <input type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text" value="(432) 477-1141"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text" value="jeff_bennett@nps.gov"/>	Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="Ekto"/>	Model <input type="text" value="8814"/>	Shelter Size <input type="text" value="896 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes <input type="text" value="The shelter is clean, neat, and well organized."/>		
Site OK <input checked="" type="checkbox"/>	Notes <input type="text"/>		

Driving Directions From interstate 10 in Fort Stockton, turn south on highway 385 and drive approximately 120 miles to Big Bend National Park. Continue on the park road past the entrance station 26 miles to the stop sign at Panther Junction near the visitor center. Turn left (east) and continue approximately 2.5 miles. Turn left on the dirt road marked K-Bar and continue approximately 0.5 miles. Turn right on the service road just past the Chihuahuan Desert Research Station (old house) on the right. The site is 400 meters at the end of the road.

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

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Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

- 1 Do all the meteorological sensors appear to be intact, in good condition, and well maintained?
- 2 Are all the meteorological sensors operational online, and reporting data?
- 3 Are the shields for the temperature and RH sensors clean?
- 4 Are the aspirated motors working?
- 5 Is the solar radiation sensor's lens clean and free of scratches?
- 6 Is the surface wetness sensor grid clean and undamaged? N/A
- 7 Are the sensor signal and power cables intact, in good condition, and well maintained? Cables deteriorating
- 8 Are the sensor signal and power cable connections protected from the elements and well maintained?

Parameter	Manufacturer	Model	S/N	Client ID
Precipitation	Climatronics	100508-2	illegible	01474
Shield (10 meter)	Climatronics	100325	1275	00390
Shield (2 meter)	Climatronics	100325	illegible	01497
Temperature	Climatronics	100093	missing	01049
Wind Direction	Climatronics	100076	1813	90885
Solar Radiation	Licor	LI-200	PY35732	none
Relative Humidity	Rotronic	MP 601A	59221	none
Met tower	Universal Tower	unknown	none	none
Wind Speed	Climatronics	100075	1725	90921

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The signal cables are showing signs of wear. The precipitation gage signal cable is in poor condition.

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID

Technician

Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube.
- 4 Describe dry dep sample tube.
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location)
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean?

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	B	AT-5381-F9-1	none
Ozone	ThermoElectron Inc	49C	49C-58468-318	90517
Filter pack flow pump	Thomas	107CAB18B	070000012920	none
MFC power supply	Tylan	RO-32	FP9403013	03680
Zero air pump	Werther International	PC70/4	606489	none

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Gateway	Solo	0018986902	90699
DAS	Environmental Sys Corp	8816	2689	90665
F460 translator	Climatronics	100163	688	none
Mainframe	Climatronics	100081	1426	01847
Mainframe power supply	Climatronics	101074	unknown	none
Modem	US Robotics	V.92	unknown	none
Printer	Hewlett Packard	842C	unknown	none
Solar Radiation Translator	Climatronics	100144	385	none
Temperature Translator	Climatronics	100088-2	482	none

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data logger	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Computer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Printer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text" value="Dataview"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
HASP	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	<input type="text" value="Electronic copy"/>	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- Is the station log properly completed during every site visit?
- Are the Site Status Report Forms being completed and current?
- Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- Are ozone z/s/p control charts properly completed and current?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Monthly and semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input checked="" type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
Analyzer Diagnostics Tests	<input type="checkbox"/>	<input type="text" value="Alarm values only"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input type="checkbox"/>	<input type="text" value="Monthly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Zero Air Desiccant Check	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters? Unknown
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how? Dataview

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The ozone sample line is leak tested every month when the inlet filter is replaced.

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	<input checked="" type="checkbox"/>	Filter changed morinings (90%)
2	Are the Site Status Report Forms being completed and filed correctly?	<input checked="" type="checkbox"/>	
3	Are data downloads and backups being performed as scheduled?	<input type="checkbox"/>	No longer required
4	Are general observations being made and recorded? How?	<input checked="" type="checkbox"/>	SSRF
5	Are site supplies on-hand and replenished in a timely fashion?	<input checked="" type="checkbox"/>	
6	Are sample flow rates recorded? How?	<input checked="" type="checkbox"/>	SSRF
7	Are samples sent to the lab on a regular schedule in a timely fashion?	<input checked="" type="checkbox"/>	
8	Are filters protected from contamination during handling and shipping? How?	<input type="checkbox"/>	
9	Are the site conditions reported regularly to the field operations manager or staff?	<input type="checkbox"/>	

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input type="checkbox"/>	<input type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>PAL190-Eric Hebert-03/07/2013</i>						
1	3/7/2013	Computer	Dell	000262	D520	unknown
2	3/7/2013	DAS	Campbell	000347	CR3000	2126
3	3/7/2013	Elevation	Elevation	None	1	None
4	3/7/2013	Filter pack flow pump	Thomas	04286	107CA18B	12980000141
5	3/7/2013	Flow Rate	Apex	000604	AXMC105LPM DPCV	unknown
6	3/7/2013	Infrastructure	Infrastructure	none	none	none
7	3/7/2013	Met tower	Universal Tower	06322	unknown	none
8	3/7/2013	Modem	Raven	06808	H4223-C	0934411667
9	3/7/2013	Ozone	ThermoElectron Inc	000613	49i A1NAA	1009241783
10	3/7/2013	Ozone Standard	ThermoElectron Inc	000214	49i A3NAA	0622717855
11	3/7/2013	Precipitation	Texas Electronics	06307	TR-525i-HT	41276-107
12	3/7/2013	Relative Humidity	Vaisala	06223	HMP50	B3220003
13	3/7/2013	Sample Tower	Aluma Tower	missing	B	AT-7200-582
14	3/7/2013	Shelter Temperature	Campbell	none	107-L	10755-148
15	3/7/2013	Shield (10 meter)	RM Young	06167	Aspirated 43408	none
16	3/7/2013	Shield (2 meter)	RM Young	06166	Aspirated 43408	none
17	3/7/2013	Siting Criteria	Siting Criteria	None	1	None
18	3/7/2013	Solar Radiation	Licor	06311	LI-200	PY55110
19	3/7/2013	Solar Radiation Translator	RM Young	06310	70101-X	none
20	3/7/2013	Surface Wetness	RM Young	06288	58101	none
21	3/7/2013	Temperature	RM Young	06303	41342VO	12542
22	3/7/2013	Temperature2meter	RM Young	06302	41342VO	12541
23	3/7/2013	Wind Direction	RM Young	03421	AQ05305	17101wdr
24	3/7/2013	Wind Speed	RM Young	03421	AQ05305	17101wsp
25	3/7/2013	Zero air pump	Werther International	06929	C 70/4	000829173

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2126	PAL190	Eric Hebert	03/07/2013	DAS	Primary

Das Date:	<input type="text" value="3 /7 /2013"/>	Audit Date	<input type="text" value="3 /7 /2013"/>
Das Time:	<input type="text" value="13:32:20"/>	Audit Time	<input type="text" value="13:32:20"/>
Das Day:	<input type="text" value="66"/>	Audit Day	<input type="text" value="66"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0000"/>	<input type="text" value="0.0002"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0002"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="4000392"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01321"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="86590148"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01310"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/27/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	0.0000	0.0000	V	V	0.0000
7	0.1000	0.1000	0.1000	V	V	0.0000
7	0.3000	0.3000	0.3000	V	V	0.0000
7	0.5000	0.5000	0.4999	V	V	-0.0001
7	0.7000	0.7000	0.7000	V	V	0.0000
7	0.9000	0.9000	0.9000	V	V	0.0000
7	1.0000	1.0001	0.9999	V	V	-0.0002

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	unknown		PAL190	Eric Hebert	03/07/2013	Flow Rate	000604

Mfg	BIOS	Parameter	Flow Rate
Serial Number	122974	Tfer Desc.	BIOS 220-H
Tfer ID	01416		
Slope	1.00000	Intercept	0.00000
Cert Date	1/8/2013	CorrCoff	1.00000

DAS 1:	DAS 2:	Cal Factor Zero	-0.04
A Avg % Diff:	A Max % Di	Cal Factor Full Scale	0.97
1.33%	1.43%	Rotometer Reading:	3.25

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	0.00	0.024	-0.02	l/m	l/m	
primary	leak check	0.000	0.000	0.02	0.038	0.00	l/m	l/m	
primary	test pt 1	0.000	2.958	3.00	3.007	3.00	l/m	l/m	1.43%
primary	test pt 2	0.000	2.960	3.00	3.007	3.00	l/m	l/m	1.36%
primary	test pt 3	0.000	2.965	3.00	3.007	3.00	l/m	l/m	1.19%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	135 deg	Status	pass
Sensor Component	Filter Depth	Condition	1.0 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	5.5 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241783		PAL190	Eric Hebert	03/07/2013	Ozone	000613

Slope:	0.98874	Slope:	0.00000
Intercept	0.63510	Intercept	0.00000
CorrCoff	1.00000	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg % Dif
A Max % Di	A Max % Di
0.5%	0.7%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	517112175	Tfer Desc.	Ozone primary stan
Tfer ID	01111		
Slope	0.99720	Intercept	0.18428
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.13	-0.31	0.32	ppb	
primary	2	35.07	34.98	35.24	ppb	0.74%
primary	3	51.97	51.93	52.04	ppb	0.21%
primary	4	77.86	77.89	77.51	ppb	-0.49%
primary	5	102.35	102.45	102.00	ppb	-0.44%

Sensor Component	Cell B Noise	Condition	1.3 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.10	Status	pass
Sensor Component	Span	Condition	1.001	Status	pass
Sensor Component	Cell B Freq.	Condition	92.5 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.65 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	32.1 C	Status	pass
Sensor Component	Cell A Pressure	Condition	648 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.6 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	99.8 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.64 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Wind Speed Data Form

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	17101wsp	PAL190	Eric Hebert	03/07/2013	Wind Speed	03421

Prop or Cups SN
Prop or Cups Torque to
Prop Correction Fact

Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind speed"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind speed motor (h"/>
Tfer ID	<input type="text" value="01262"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/13/2010"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind speed"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind speed motor (l"/>
Tfer ID	<input type="text" value="01261"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/13/2010"/>	CorrCoff	<input type="text" value="1.00000"/>

	DAS 1:		DAS 2:	
	Low Range	High Range	Low Range	High Range
Abs Avg Err	<input type="text" value="0.05"/>	<input type="text" value="0.00%"/>	<input type="text"/>	<input type="text"/>
Abs Max Er	<input type="text" value="0.20"/>	<input type="text" value="0.00%"/>	<input type="text"/>	<input type="text"/>

UseDescription:	InputDevice:	Input RPM:	Input m/s:	Output V:	DAS m/s:	Diff/ %Diff:	Difference:
primary	none	0	0.20	0.000	0.0		-0.20
primary	01262	200	1.02	0.000	1.0		0.00
primary	01262	400	2.05	0.000	2.1		0.00
primary	01262	800	4.10	0.000	4.1		0.00
primary	01262	1200	6.14	0.000	6.1	0.00%	
primary	01262	2400	12.29	0.000	12.3	0.00%	
primary	01262	4000	20.48	0.000	20.5	0.00%	
primary	01262	9400	48.13	0.000	48.1	0.00%	

Sensor Component	<input type="text" value="System Memo"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Plumb"/>	Condition	<input type="text" value="Plumb"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Heater"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Prop or Cups Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Torque"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>

Wind Direction Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	17101wdr		PAL190	Eric Hebert	03/07/2013	Wind Direction	03421

Vane SN: C. A. Align. deg. true:

Vane Torque to

Mfg	<input type="text" value="Ushikata"/>	Parameter	<input type="text" value="wind direction"/>
Serial Number	<input type="text" value="190037"/>	Tfer Desc.	<input type="text" value="transit"/>
Tfer ID	<input type="text" value="01265"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/4/2011"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="RM Young"/>	Parameter	<input type="text" value="wind direction"/>
Serial Number	<input type="text"/>	Tfer Desc.	<input type="text" value="wind direction wheel"/>
Tfer ID	<input type="text" value="01266"/>		

DAS 1:	DAS 2:		
Orientation	Linearity:	Orientation	Linearity:
Abs Avg Err	<input type="text" value="1.3"/>	<input type="text" value="1.0"/>	<input type="text"/>
Abs Max Er	<input type="text" value="3"/>	<input type="text" value="2"/>	<input type="text"/>

UseDescription:	TferID:	Input Raw:	Linearity	Output V:	Output Deg.:	Difference:	Change:	Error:
primary	01266	0	<input checked="" type="checkbox"/>	0.000	2	2	45	0
primary	01266	45	<input checked="" type="checkbox"/>	0.000	48	3	46	1
primary	01266	90	<input checked="" type="checkbox"/>	0.000	93	3	45	0
primary	01266	135	<input checked="" type="checkbox"/>	0.000	136	1	43	-2
primary	01266	180	<input checked="" type="checkbox"/>	0.000	180	0	44	-1
primary	01266	225	<input checked="" type="checkbox"/>	0.000	224	1	44	-1
primary	01266	270	<input checked="" type="checkbox"/>	0.000	270	0	46	1
primary	01266	315	<input checked="" type="checkbox"/>	0.000	317	2	47	2
primary	01265	90	<input type="checkbox"/>	0.000	93	3		3
primary	01265	180	<input type="checkbox"/>	0.000	180	0		0
primary	01265	270	<input type="checkbox"/>	0.000	270	0		0
primary	01265	360	<input type="checkbox"/>	0.000	2	2		2

Sensor Component	<input type="text" value="Mast"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Heater"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sensor Plumb"/>	Condition	<input type="text" value="Plumb"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Torque"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Vane Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="System Memo"/>	Condition	<input type="text"/>	Status	<input type="text" value="pass"/>

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	12542		PAL190	Eric Hebert	03/07/2013	Temperature	06303

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.04	0.07		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	-0.03	0.09	0.000	0.05	C	-0.04
primary	Temp Mid Range	26.20	26.13	0.000	26.11	C	-0.02
primary	Temp High Range	46.29	46.08	0.000	46.15	C	0.07

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	Functioning	Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass

2 Meter Temperature Data For

Calc. Difference

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	12541	PAL190	Eric Hebert	03/07/2013	Temperature2meter	06302

Mfg	Extech	Parameter	Temperature
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.04	0.07		

UseDescription:	Test type:	InputTmpRaw	InputTmpCorrected:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Rang	-0.03	0.09	0.000	0.04	C	-0.05
primary	Temp Mid Rang	26.20	26.13	0.000	26.14	C	0.01
primary	Temp High Ran	46.29	46.08	0.000	46.15	C	0.07

Sensor Component	Blower Status Switch	Condition	Functioning	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	Functioning	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	Shield	Condition	Clean	Status	pass

Humidity Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Vaisala	B3220003		PAL190	Eric Hebert	03/07/2013	Relative Humidity	06223

Mfg	Rotronic	Parameter	Relative Humidity
Serial Number	124432	Tfer Desc.	Hygroclip
Tfer ID	01225		
Slope	1.00000	Intercept	0.00000
Cert Date	1/29/2013	CorrCoff	1.00000

DAS 1:

DAS 2:

	Low Range	High Range	Low Range	High Range
Abs Avg Err	3.3	9.1		
Abs Max Er	4.9	9.1		

UseDesc.:	Test type:	Device:	Input RH:	GTL Raw:	RH Corr.:	DAS Volts:	DAS %RH:	Difference:
primary	RH Low Range	Hygroclip	32.8	35.0	32.8	0.000	34.4	1.6
primary	RH Low Range	Hygroclip	52.9	51.2	52.9	0.000	48.0	-4.9
primary	RH High Range	Hygroclip	93.6	90.8	93.6	0.000	84.5	-9.1

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Blower	Condition	N/A	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	RH Filter	Condition	Clean	Status	pass
Sensor Component	Shield	Condition	Clean	Status	pass

Surface Wetness Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	none		PAL190	Eric Hebert	03/07/2013	Surface Wetness	06288

Mfg	Ohmite	Parameter	surface wetness
Serial Number	296-1200	Tfer Desc.	decade box
Tfer ID	01210		
Slope	1.00000	Intercept	0.00000
Cert Date	1/4/2011	CorrCoff	1.00000

Manual Test Pass

UseDescription:	Test Type:	Tfer kOhms:	OutputSignal:	DAS eng:	OutputSignalEngUni	TferUnits:	OutputSignalUnit
primary	wet	N/A	1.023	1.02	V	N/A	V
primary	dry	N/A	0.009	0.01	V	N/A	V
primary	Decade box on	210	1.022	1.02	V	kOhm	V
primary	Decade box off	220	0.009	0.01	V	kOhm	V

Sensor Component	Grid Orientation	Condition	northwest	Status	pass
Sensor Component	Grid Clean	Condition	Clean	Status	pass
Sensor Component	Grid Angle	Condition	about 45 deg	Status	pass
Sensor Component	Grid Condition	Condition	Fair	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Grid Type	Condition	Grid with holes	Status	pass

Precipitation Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Texas Electronics	41276-107		PAL190	Eric Hebert	03/07/2013	Precipitation	06307

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
1.0%	2.0%
A Avg %Dif	A Max % Di

Mfg	PMP	Parameter	Precipitation
Serial Number	EW-06134-50	Tfer Desc.	250ml graduate
Tfer ID	01250		
Slope	1.00000	Intercept	0.00000
Cert Date	9/5/2005	CorrCoff	1.00000

UseDesc.	Test type:	TferVolume:	Iteration:	TimePerTip:	Eq.Ht:	DAS eng:	Eq.HtUnit:	OSE Unit:	TferUnits:	PctDifference
primary	tip check	10 manual	1	2 sec	0.10	0.10	in	in	ml	
primary	test 1	231.5	1	8 sec	0.50	0.50	in	in	ml	0.0%
primary	test 2	231.5	2	8 sec	0.50	0.49	in	in	ml	-2.0%

Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sensor Heater	Condition	Functioning	Status	pass
Sensor Component	Properly Sited	Condition	Properly sited	Status	pass
Sensor Component	Gauge Drain Screen	Condition	Installed	Status	pass
Sensor Component	Level	Condition	Level	Status	pass
Sensor Component	Gauge Clean	Condition	Clean	Status	pass
Sensor Component	Funnel Clean	Condition	Clean	Status	pass
Sensor Component	Condition	Condition	Good	Status	pass
Sensor Component	Gauge Screen	Condition	Installed	Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Met One"/>	<input type="text" value="E-8109-26012-2"/>	<input type="text" value="720 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type B"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Fair"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	10755-148	PAL190	Eric Hebert	03/07/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.73	0.77		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232679	Tfer Desc.	RTD
Tfer ID	01228		
Slope	1.00732	Intercept	-0.12380
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	24.70	24.64	0.000	24.0	C	-0.68
primary	Temp Mid Range	19.78	19.76	0.000	20.5	C	0.75
primary	Temp Mid Range	23.38	23.33	0.000	22.6	C	-0.77

Field Systems Comments

1 Parameter: DasComments

The lower temperature sensor is mounted 1.75 meters above the ground and not 2 meters as stated in the QAPP. This condition was observed and reported during the two previous audit visits.

2 Parameter: SiteOpsProcedures

The ozone sample train is leak tested every two weeks.

3 Parameter: DocumentationCo

The site logbook is not used for routine weekly site visits.

4 Parameter: SitingCriteriaCom

The site is located 40 km southeast of Amarillo TX which has a population of approximately 178,000.

5 Parameter: ShelterCleanNotes

New shelter, in very good condition.

6 Parameter: MetSensorComme

The surface wetness sensor grid is inclined approximately 45 degrees and is oriented to the northwest.

7 Parameter: MetOpMaintCom

Temperature and 2 meter temperature blowers are functioning. The blower status can be observed on the computer screen when testing the blowers, however the data status cannot be verified in the DAS.

Field Systems Data Form

F-02058-1500-S1-rev001

Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Fortress Cliff"/>
Operating Group	<input type="text" value="TX A&M University"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="48-381-9991"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="R.M. Young"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text"/>
Deposition Measurement	<input type="text" value="dry, wet"/>	QAPP Longitude	<input type="text"/>
Land Use	<input type="text" value="agriculture"/>	QAPP Elevation Meters	<input type="text"/>
Terrain	<input type="text" value="complex"/>	QAPP Declination	<input type="text"/>
Conforms to MLM	<input type="text" value="Marginally"/>	QAPP Declination Date	<input type="text"/>
Site Telephone	<input type="text"/>	Audit Latitude	<input type="text" value="34.88061"/>
Site Address 1	<input type="text"/>	Audit Longitude	<input type="text" value="-101.664703"/>
Site Address 2	<input type="text"/>	Audit Elevation	<input type="text" value="1053"/>
County	<input type="text" value="Randall"/>	Audit Declination	<input type="text" value="6.6"/>
City, State	<input type="text" value="Canyon, TX"/>		
Zip Code	<input type="text" value="79015"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="No inspection date"/>
Time Zone	<input type="text" value="Central"/>	First Aid Kit <input checked="" type="checkbox"/>	<input type="text"/>
Primary Operator	<input type="text" value="Brent Auvermann"/>	Safety Glasses <input type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(806) 677-5663"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text" value="b-auvermann@tamu.edu"/>	Climbing Belt <input type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Jack Bush"/>	Security Fence <input type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text" value="(806) 677-5657"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text"/>	Stable Entry Step <input type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="Met One"/>	Model <input type="text" value="E-8109-26012-2"/>	Shelter Size <input type="text" value="720 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes <input type="text" value="New shelter, in very good condition."/>		
Site OK <input checked="" type="checkbox"/>	Notes <input type="text"/>		

Driving Directions From I27 take exit 99 and go east on Hungate road to the first stop sign. Turn right (south) onto Eastern which is a dirt road. At the next intersection turn left (east) on Lawrence (also dirt). Continue and follow sharp left turn onto Pullman. Continue and follow sharp right turn onto game lands. Continue through two gates and past storage building. Site will be visible on the left.

Field Systems Data Form

F-02058-1500-S2-rev001

Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

F-02058-1500-S3-rev001

Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|--------------------------|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | NW |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | Approximately 45 degrees |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The surface wetness sensor grid is inclined approximately 45 degrees and is oriented to the northwest.

Field Systems Data Form

F-02058-1500-S4-rev001

Site ID Technician Site Visit Date

- 1 Do all the meteorological sensors appear to be intact, in good condition, and well maintained?
- 2 Are all the meteorological sensors operational online, and reporting data?
- 3 Are the shields for the temperature and RH sensors clean?
- 4 Are the aspirated motors working?
- 5 Is the solar radiation sensor's lens clean and free of scratches?
- 6 Is the surface wetness sensor grid clean and undamaged?
- 7 Are the sensor signal and power cables intact, in good condition, and well maintained?
- 8 Are the sensor signal and power cable connections protected from the elements and well maintained?

Parameter	Manufacturer	Model	S/N	Client ID
Solar Radiation	Licor	LI-200	PY55110	06311
Surface Wetness	RM Young	58101	none	06288
Temperature	RM Young	41342VO	12542	06303
Temperature2meter	RM Young	41342VO	12541	06302
Shield (10 meter)	RM Young	Aspirated 43408	none	06167
Shield (2 meter)	RM Young	Aspirated 43408	none	06166
Wind Speed	RM Young	AQ05305	17101wsp	03421
Wind Direction	RM Young	AQ05305	17101wdr	03421
Precipitation	Texas Electronics	TR-525i-HT	41276-107	06307
Met tower	Universal Tower	unknown	none	06322
Relative Humidity	Vaisala	HMP50	B3220003	06223

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Temperature and 2 meter temperature blowers are functioning. The blower status can be observed on the computer screen when testing the blowers, however the data status cannot be verified in the DAS.

Field Systems Data Form

F-02058-1500-S5-rev001

Site ID

Technician

Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 12 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	B	AT-7200-582	missing
Ozone	ThermoElectron Inc	49i A1NAA	1009241783	000613
Filter pack flow pump	Thomas	107CA18B	12980000141	04286
Zero air pump	Werther International	C 70/4	000829173	06929

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S6-rev001

Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry?
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- Stable**

Grounded
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D520	unknown	000262
DAS	Campbell	CR3000	2126	000347
Modem	Raven	H4223-C	0934411667	06808
Solar Radiation Translator	RM Young	70101-X	none	06310

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The lower temperature sensor is mounted 1.75 meters above the ground and not 2 meters as stated in the QAPP. This condition was observed and reported during the two previous audit visits.

Field Systems Data Form

F-02058-1500-S7-rev001

Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Modem	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Solar radiation translator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	UPS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input checked="" type="checkbox"/>	Feb 2005	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2009	<input checked="" type="checkbox"/>
Field Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	Electronic copy	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current? Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S8-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed? Trained by backup operator
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed? Trained on site by MACTEC during site installation
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="As needed"/>	<input checked="" type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input checked="" type="checkbox"/>	<input type="text" value="As needed"/>	<input checked="" type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters? Unknown
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how? SSRF

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

F-02058-1500-S9-rev001

Site ID

Technician

Site Visit Date

Site operation procedures

1	Is the filter pack being changed every Tuesday as scheduled?	<input checked="" type="checkbox"/>	Filter changed morinings
2	Are the Site Status Report Forms being completed and filed correctly?	<input checked="" type="checkbox"/>	
3	Are data downloads and backups being performed as scheduled?	<input type="checkbox"/>	No longer required
4	Are general observations being made and recorded? How?	<input checked="" type="checkbox"/>	SSRF, logbook
5	Are site supplies on-hand and replenished in a timely fashion?	<input checked="" type="checkbox"/>	
6	Are sample flow rates recorded? How?	<input checked="" type="checkbox"/>	SSRF
7	Are samples sent to the lab on a regular schedule in a timely fashion?	<input checked="" type="checkbox"/>	
8	Are filters protected from contamination during handling and shipping? How?	<input checked="" type="checkbox"/>	Clean gloves on and off
9	Are the site conditions reported regularly to the field operations manager or staff?	<input checked="" type="checkbox"/>	

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> As needed	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>	
<i>CKT136-Sandy Grenville-03/09/2013</i>						
1	3/9/2013	Computer	Dell	000247	D520	unknown
2	3/9/2013	DAS	Campbell	000354	CR3000	2132
3	3/9/2013	Elevation	Elevation	None	1	None
4	3/9/2013	Filter pack flow pump	Thomas	02361	107CA18	0290006116
5	3/9/2013	Flow Rate	Apex	000468	AXMC105LPMDPCV	illegible
6	3/9/2013	Infrastructure	Infrastructure	none	none	none
7	3/9/2013	Modem	Raven	06585	H4223-C	0844381259
8	3/9/2013	Ozone	ThermoElectron Inc	000617	49i A1NAA	1009241780
9	3/9/2013	Ozone Standard	ThermoElectron Inc	000433	49i A3NAA	CM08200009
10	3/9/2013	Sample Tower	Aluma Tower	03512	A	none
11	3/9/2013	Shelter Temperature	Campbell	none	107-L	none
12	3/9/2013	Siting Criteria	Siting Criteria	None	1	None
13	3/9/2013	Temperature	RM Young	06500	41342VC	14605
14	3/9/2013	Zero air pump	Werther International	06902	PC70/4	000829157

DAS Data Form

DAS Time Max Error:

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2132	CKT136	Sandy Grenville	03/09/2013	DAS	Primary

Das Date:	<input type="text" value="3/9/2013"/>	Audit Date	<input type="text" value="3/9/2013"/>
Das Time:	<input type="text" value="13:32:00"/>	Audit Time	<input type="text" value="13:32:00"/>
Das Day:	<input type="text" value="68"/>	Audit Day	<input type="text" value="68"/>

Low Channel:	High Channel:		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:
<input type="text" value="0.0002"/>	<input type="text" value="0.0003"/>	<input type="text" value="0.0002"/>	<input type="text" value="0.0003"/>

Mfg	<input type="text" value="Datel"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="15510194"/>	Tfer Desc.	<input type="text" value="Source generator (D"/>
Tfer ID	<input type="text" value="01320"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="2/13/2012"/>	CorrCoff	<input type="text" value="1.00000"/>
Mfg	<input type="text" value="Fluke"/>	Parameter	<input type="text" value="DAS"/>
Serial Number	<input type="text" value="95740135"/>	Tfer Desc.	<input type="text" value="DVM"/>
Tfer ID	<input type="text" value="01311"/>		
Slope	<input type="text" value="1.00000"/>	Intercept	<input type="text" value="0.00000"/>
Cert Date	<input type="text" value="1/26/2013"/>	CorrCoff	<input type="text" value="1.00000"/>

Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference
7	0.0000	-0.0001	0.0000	V	V	0.0001
7	0.1000	0.0998	0.1000	V	V	0.0002
7	0.3000	0.2997	0.2999	V	V	0.0002
7	0.5000	0.4996	0.4998	V	V	0.0002
7	0.7000	0.6996	0.6999	V	V	0.0003
7	0.9000	0.8995	0.8997	V	V	0.0002
7	1.0000	0.9994	0.9997	V	V	0.0003

Flow Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
Apex	illegible		CKT136	Sandy Grenville	03/09/2013	Flow Rate	000468

Mfg	BIOS	Parameter	Flow Rate
Serial Number	103471	Tfer Desc.	nexus
Tfer ID	01420		
Slope	1.00000	Intercept	0.00000
Cert Date	6/13/2012	CorrCoff	1.00000
Mfg	BIOS	Parameter	Flow Rate
Serial Number	103424	Tfer Desc.	BIOS cell
Tfer ID	01410		
Slope	1.00000	Intercept	0.00000
Cert Date	1/27/2012	CorrCoff	1.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Max % Di
1.27%	1.32%
A Avg %Dif	A Max % Di

Cal Factor Zero	-0.04
Cal Factor Full Scale	0.97
Rotometer Reading:	1.4

UseDescription:	Test type:	Input l/m:	Input STP:	MfcDisp.:	OutputSignal:	Output S E:	InputUnit:	OutputSignal:	PctDifference:
primary	pump off	0.000	0.000	0.01	0.005	-0.03	l/m	l/m	
primary	leak check	0.000	0.000	0.01	0.005	-0.03	l/m	l/m	
primary	test pt 1	1.545	1.520	1.53	1.528	1.50	l/m	l/m	-1.32%
primary	test pt 2	1.545	1.519	1.54	1.530	1.50	l/m	l/m	-1.25%
primary	test pt 3	1.545	1.519	1.54	1.528	1.50	l/m	l/m	-1.25%

Sensor Component	Leak Test	Condition		Status	pass
Sensor Component	Filter Azimuth	Condition	330 deg	Status	pass
Sensor Component	Filter Depth	Condition	1.4 cm	Status	pass
Sensor Component	Filter Position	Condition	Good	Status	pass
Sensor Component	Moisture Present	Condition	No moisture present	Status	pass
Sensor Component	Rotometer Condition	Condition	Clean and dry	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Tubing Condition	Condition	Good	Status	pass
Sensor Component	Filter Distance	Condition	4.7 cm	Status	pass

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241780		CKT136	Sandy Grenville	03/09/2013	Ozone	000617

Slope:	0.99158	Slope:	0.00000
Intercept	-0.26696	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
1.5%	2.4%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.10	0.28	0.18	ppb	
primary	2	36.89	37.02	36.14	ppb	-2.38%
primary	3	51.32	51.44	50.70	ppb	-1.44%
primary	4	80.11	80.19	79.45	ppb	-0.92%
primary	5	101.29	101.35	100.20	ppb	-1.13%

Sensor Component	Cell B Noise	Condition	0.8 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	< 1 %	Status	pass
Sensor Component	Offset	Condition	0.2	Status	pass
Sensor Component	Span	Condition	1.008	Status	pass
Sensor Component	Cell B Freq.	Condition	85.2 kHz	Status	pass
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.63 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	31.3 C	Status	pass
Sensor Component	Cell A Pressure	Condition	709 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	1.2 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	78.9 kHz	Status	Fail
Sensor Component	Cell A Flow	Condition	0.67 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Temperature Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
RM Young	14605		CKT136	Sandy Grenville	03/09/2013	Temperature	06500

Mfg	Extech	Parameter	Temperature
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.20	0.27		

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Low Range	0.10	0.18	0.000	0.4	C	0.23
primary	Temp Mid Range	24.93	24.91	0.000	25.0	C	0.09
primary	Temp High Range	49.10	48.97	0.000	48.7	C	-0.27

Sensor Component	Shield	Condition	Clean	Status	pass
Sensor Component	Blower Status Switch	Condition	N/A	Status	pass
Sensor Component	Blower	Condition	N/A	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Infrastructure Data For

Site ID Technician Site Visit Date

Shelter Make	Shelter Model	Shelter Size
<input type="text" value="Ekto"/>	<input type="text" value="8810 (s/n 2116-2)"/>	<input type="text" value="640 cuft"/>

Sensor Component	<input type="text" value="Shelter Roof"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower Type"/>	Condition	<input type="text" value="Type A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Met Tower"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Moisture Trap"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Power Cables"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Rotometer"/>	Condition	<input type="text" value="Installed"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Conduit"/>	Condition	<input type="text" value="N/A"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Tower"/>	Condition	<input type="text" value="Poor"/>	Status	<input type="text" value="Fail"/>
Sensor Component	<input type="text" value="Shelter Condition"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Floor"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Temp Control"/>	Condition	<input type="text" value="Functioning"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Signal Cable"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Tubing Type"/>	Condition	<input type="text" value="3/8 teflon"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Shelter Door"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>
Sensor Component	<input type="text" value="Sample Train"/>	Condition	<input type="text" value="Good"/>	Status	<input type="text" value="pass"/>

Shelter Temperature Data For

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	CKT136	Sandy Grenville	03/09/2013	Shelter Temperature	none

DAS 1:		DAS 2:	
Abs Avg Err	Abs Max Er	Abs Avg Err	Abs Max Er
0.42	0.42		

Mfg	Extech	Parameter	Shelter Temperatur
Serial Number	H232734	Tfer Desc.	RTD
Tfer ID	01227		
Slope	1.00435	Intercept	-0.08480
Cert Date	1/12/2013	CorrCoff	1.00000

UseDesc.:	Test type:	InputTmpRaw	InputTmpCorr.:	OutputTmpSignal:	OutputSignalEng:	OSE Unit:	Difference:
primary	Temp Mid Range	23.40	23.38	0.000	23.8	C	0.42
primary	Temp Mid Range	23.20	23.18	0.000	23.6	C	0.42
primary	Temp Mid Range	23.20	23.18	0.000	23.6	C	0.42

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Flow Rate	CKT136	Sandy Grenville	03/09/2013	Moisture Present	Apex	3721	<input type="checkbox"/>	<input type="checkbox"/>
The filter sample tubing has drops of moisture in low sections outside the shelter.								
Ozone	CKT136	Sandy Grenville	03/09/2013	Cell A Freq.	ThermoElectron	3464	<input type="checkbox"/>	<input checked="" type="checkbox"/>
This analyzer diagnostic check is outside the manufacturer's recommended value.								

Field Systems Comments

1 **Parameter:** SiteOpsProcComm

The filter is changed with the sample pump running while the tower is in the down position. This may be due to a mislabeled switch for the sample pump. This condition was also reported following the previous audit visit.

2 **Parameter:** ShelterCleanNotes

The shelter is very clean and well organized.

3 **Parameter:** PollAnalyzerCom

The meteorological tower has been removed. The sample tower is in poor condition. The upper section is bent, and the lower section will not align and lock in place. Wire ties are used to secure the tower in the upright position.

4 **Parameter:** MetOpMaintCom

The temperature sensor has been installed at approximately 8 meters from the ground on the sample tower in a naturally aspirated shield.

Field Systems Data Form

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Site ID Technician Site Visit Date

Site Sponsor (agency)	<input type="text" value="EPA"/>	USGS Map	<input type="text" value="Dingus"/>
Operating Group	<input type="text" value="private"/>	Map Scale	<input type="text"/>
AQS #	<input type="text" value="21-175-9991"/>	Map Date	<input type="text"/>
Meteorological Type	<input type="text" value="R.M. Young"/>		
Air Pollutant Analyzer	<input type="text" value="Ozone"/>	QAPP Latitude	<input type="text" value="37.9211"/>
Deposition Measurement	<input type="text" value="dry"/>	QAPP Longitude	<input type="text" value="-83.0658"/>
Land Use	<input type="text" value="woodland - mixed"/>	QAPP Elevation Meters	<input type="text" value="455"/>
Terrain	<input type="text" value="rolling"/>	QAPP Declination	<input type="text" value="5.9"/>
Conforms to MLM	<input type="text" value="Yes"/>	QAPP Declination Date	<input type="text" value="2/22/2006"/>
Site Telephone	<input type="text" value="(606) 522-3560"/>	Audit Latitude	<input type="text" value="37.92146"/>
Site Address 1	<input type="text" value="7687 Highway 437"/>	Audit Longitude	<input type="text" value="-83.066295"/>
Site Address 2	<input type="text"/>	Audit Elevation	<input type="text" value="376"/>
County	<input type="text" value="Morgan"/>	Audit Declination	<input type="text" value="-6.1"/>
City, State	<input type="text" value="West Liberty, KY"/>		
Zip Code	<input type="text" value="41472"/>	Present	
Time Zone	<input type="text" value="Eastern"/>	Fire Extinguisher <input checked="" type="checkbox"/>	<input type="text" value="Inspected May 1993"/>
Primary Operator	<input type="text" value="Carolyn Montgomery"/>	First Aid Kit <input type="checkbox"/>	<input type="text"/>
Primary Op. Phone #	<input type="text" value="(606) 522-4318"/>	Safety Glasses <input checked="" type="checkbox"/>	<input type="text"/>
Primary Op. E-mail	<input type="text"/>	Safety Hard Hat <input checked="" type="checkbox"/>	<input type="text"/>
Backup Operator	<input type="text" value="Mason Montgomery"/>	Climbing Belt <input type="checkbox"/>	<input type="text"/>
Backup Op. Phone #	<input type="text" value="(606) 522-4318"/>	Security Fence <input checked="" type="checkbox"/>	<input type="text"/>
Backup Op. E-mail	<input type="text"/>	Secure Shelter <input checked="" type="checkbox"/>	<input type="text"/>
		Stable Entry Step <input checked="" type="checkbox"/>	<input type="text"/>
Shelter Working Room <input checked="" type="checkbox"/>	Make <input type="text" value="Ekto"/>	Model <input type="text" value="8810 (s/n 2116-2)"/>	Shelter Size <input type="text" value="640 cuft"/>
Shelter Clean <input checked="" type="checkbox"/>	Notes <input type="text" value="The shelter is very clean and well organized."/>		
Site OK <input checked="" type="checkbox"/>	Notes <input type="text"/>		

Driving Directions From I-64 in Morehead go south on route 519 to West Liberty. At the first traffic light in West Liberty, turn left (east) onto route 460. Continue approximately 1 mile and turn left onto route 172. continue approximately 8 miles and then turn right onto route 437. Continue approximately 8 miles staying on 437. The road will climb a hill, turn left onto a dirt road at the top of the hill before the closed gas station). There is a sign for "KY Ridgerunners". The site is approximately 1/2 mile on the left.

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Site ID

Technician

Site Visit Date

Potential Interferent	Minimum Distance From Measurement Apparatus	Distance	Pass = Checked
Large Point Source of SO2 or NOx	20 to 40 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major industrial complex	10 to 20 km	<input type="text"/>	<input checked="" type="checkbox"/>
City > 50,000 population	40 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 10,000 to 50,000 population	10 km	<input type="text"/>	<input checked="" type="checkbox"/>
City 1,000 to 10,000 population	5 km	<input type="text"/>	<input checked="" type="checkbox"/>
Major highway, airport or rail yard	2 km	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, heavily traveled	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Secondary road, lightly traveled	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Feedlot operations	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Intensive agricultural ops (including aerial spraying)	500 m	<input type="text"/>	<input checked="" type="checkbox"/>
Limited agricultural operations	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Large parking lot	200 m	<input type="text"/>	<input checked="" type="checkbox"/>
Small parking lot	100 m	<input type="text"/>	<input checked="" type="checkbox"/>
Tree line	50 m	<input type="text"/>	<input checked="" type="checkbox"/>
Obstacles to wind	10 times obstacle height	<input type="text"/>	<input checked="" type="checkbox"/>

Siting Distances OK

Siting Criteria Comment

Field Systems Data Form

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Site ID

Technician

Site Visit Date

- | | | | |
|----|--|-------------------------------------|-----|
| 1 | Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? | <input checked="" type="checkbox"/> | N/A |
| 2 | Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) | <input checked="" type="checkbox"/> | N/A |
| 3 | Are the tower and sensors plumb? | <input checked="" type="checkbox"/> | N/A |
| 4 | Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? | <input checked="" type="checkbox"/> | |
| 5 | Are temperature and RH sensors sited to avoid unnatural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) | <input checked="" type="checkbox"/> | |
| 6 | Is the solar radiation sensor plumb? | <input checked="" type="checkbox"/> | N/A |
| 7 | Is it sited to avoid shading, or any artificial or reflected light? | <input checked="" type="checkbox"/> | N/A |
| 8 | Is the rain gauge plumb? | <input checked="" type="checkbox"/> | N/A |
| 9 | Is it sited to avoid sheltering effects from buildings, trees, towers, etc? | <input checked="" type="checkbox"/> | N/A |
| 10 | Is the surface wetness sensor sited with the grid surface facing north? | <input checked="" type="checkbox"/> | N/A |
| 11 | Is it inclined approximately 30 degrees? | <input checked="" type="checkbox"/> | N/A |

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

1	Do all the meteorological sensors appear to be intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	Temperature only
2	Are all the meteorological sensors operational online, and reporting data?	<input checked="" type="checkbox"/>	Temperature only
3	Are the shields for the temperature and RH sensors clean?	<input checked="" type="checkbox"/>	
4	Are the aspirated motors working?	<input checked="" type="checkbox"/>	N/A
5	Is the solar radiation sensor's lens clean and free of scratches?	<input checked="" type="checkbox"/>	N/A
6	Is the surface wetness sensor grid clean and undamaged?	<input checked="" type="checkbox"/>	N/A
7	Are the sensor signal and power cables intact, in good condition, and well maintained?	<input checked="" type="checkbox"/>	
8	Are the sensor signal and power cable connections protected from the elements and well maintained?	<input checked="" type="checkbox"/>	

Parameter	Manufacturer	Model	S/N	Client ID
Temperature	RM Young	41342VC	14605	06500

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The temperature sensor has been installed at approximately 8 meters from the ground on the sample tower in a naturally aspirated shield.

Field Systems Data Form

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Site ID Technician Site Visit Date

Siting Criteria: Are the pollutant analyzers and deposition equipment sited in accordance with 40 CFR 58, Appendix E

- 1 Do the sample inlets have at least a 270 degree arc of unrestricted airflow?
- 2 Are the sample inlets 3 - 15 meters above the ground?
- 3 Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?

Pollutant analyzers and deposition equipment operations and maintenance

- 1 Do the analyzers and equipment appear to be in good condition and well maintained?
- 2 Are the analyzers and monitors operational, on-line, and reporting data?
- 3 Describe ozone sample tube. 1/4 teflon by 15 meters
- 4 Describe dry dep sample tube. 3/8 teflon by 12 meters
- 5 Are in-line filters used in the ozone sample line? (if yes indicate location) At inlet only
- 6 Are sample lines clean, free of kinks, moisture, and obstructions?
- 7 Is the zero air supply desiccant unsaturated?
- 8 Are there moisture traps in the sample lines?
- 9 Is there a rotometer in the dry deposition filter line, and is it clean? Clean and dry

Parameter	Manufacturer	Model	S/N	Client ID
Sample Tower	Aluma Tower	A	none	03512
Ozone	ThermoElectron Inc	49i A1NAA	1009241780	000617
Filter pack flow pump	Thomas	107CA18	0290006116	02361
Zero air pump	Werther International	PC70/4	000829157	06902

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The meteorological tower has been removed. The sample tower is in poor condition. The upper section is bent, and the lower section will not align and lock in place. Wire ties are used to secure the tower in the upright position.

Field Systems Data Form

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Site ID Technician Site Visit Date

DAS, sensor translators, and peripheral equipment operations and maintenance

- 1 Do the DAS instruments appear to be in good condition and well maintained?
 - 2 Are all the components of the DAS operational? (printers, modem, backup, etc)
 - 3 Do the analyzer and sensor signal leads pass through lightning protection circuitry? Met sensors only
 - 4 Are the signal connections protected from the weather and well maintained?
 - 5 Are the signal leads connected to the correct DAS channel?
 - 6 Are the DAS, sensor translators, and shelter properly grounded?
 - 7 Does the instrument shelter have a stable power source?
 - 8 Is the instrument shelter temperature controlled?
- 9 Is the met tower stable and grounded?
- 10 Is the sample tower stable and grounded?
- 11 Tower comments?

Stable	Grounded
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	D520	unknown	000247
DAS	Campbell	CR3000	2132	000354
Modem	Raven	H4223-C	0844381259	06585

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID

Technician

Site Visit Date

Documentation

Does the site have the required instrument and equipment manuals?

	Yes	No	N/A		Yes	No	N/A
Wind speed sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wind direction sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Data logger	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strip chart recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Relative humidity sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Computer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar radiation sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Modem	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surface wetness sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wind sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Zero air pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Temperature translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Filter flow pump	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Humidity sensor translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Surge protector	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar radiation translator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	UPS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tipping bucket rain gauge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lightning protection device	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ozone analyzer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shelter heater	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack flow controller	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelter air conditioner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Filter pack MFC power supply	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Does the site have the required and most recent QC documents and report forms?

	Present		Current
Station Log	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
SSRF	<input checked="" type="checkbox"/>	<input type="text"/>	<input checked="" type="checkbox"/>
Site Ops Manual	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
HASP	<input checked="" type="checkbox"/>	Nov 2001	<input checked="" type="checkbox"/>
Field Ops Manual	<input checked="" type="checkbox"/>	Oct 2001	<input type="checkbox"/>
Calibration Reports	<input checked="" type="checkbox"/>	Electronic copy	<input checked="" type="checkbox"/>
Ozone z/s/p Control Charts	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Preventive maintenance schedul	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

- 1 Is the station log properly completed during every site visit?
- 2 Are the Site Status Report Forms being completed and current?
- 3 Are the chain-of-custody forms properly used to document sample transfer to and from lab?
- 4 Are ozone z/s/p control charts properly completed and current? Control charts not used

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

Site operation procedures

- 1 Has the site operator attended a formal CASTNET training course? If yes, when and who instructed?
- 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?
- 3 Is the site visited regularly on the required Tuesday schedule?
- 4 Are the standard CASTNET operational procedures being followed by the site operator?
- 5 Is the site operator(s) knowledgeable of, and able to perform the required site activities? (including documentation)

Are regular operational QA/QC checks performed on meteorological instruments?

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Visual Inspections	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Translator Zero/Span Tests (climatronics)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Manual Rain Gauge Test	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Confirm Reasonableness of Current Values	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Test Surface Wetness Response	<input checked="" type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>

Are regular operational QA/QC checks performed on the ozone analyzer?

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	<input checked="" type="checkbox"/>	<input type="text" value="Semiannually"/>	<input checked="" type="checkbox"/>
Automatic Zero/Span Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Zero/Span Tests	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Automatic Precision Level Tests	<input checked="" type="checkbox"/>	<input type="text" value="Daily"/>	<input checked="" type="checkbox"/>
Manual Precision Level Test	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
Analyzer Diagnostics Tests	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at inlet)	<input checked="" type="checkbox"/>	<input type="text" value="Every 2 weeks"/>	<input checked="" type="checkbox"/>
In-line Filter Replacement (at analyze)	<input type="checkbox"/>	<input type="text" value="N/A"/>	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>
Zero Air Desiccant Check	<input checked="" type="checkbox"/>	<input type="text" value="Weekly"/>	<input checked="" type="checkbox"/>

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- 2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?
- 3 Are the automatic and manual z/s/p checks monitored and reported? If yes, how?

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

Field Systems Data Form

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Site ID Technician Site Visit Date

Site operation procedures

- | | | | |
|---|--|-------------------------------------|------------------------------|
| 1 | Is the filter pack being changed every Tuesday as scheduled? | <input checked="" type="checkbox"/> | Filter changed various times |
| 2 | Are the Site Status Report Forms being completed and filed correctly? | <input checked="" type="checkbox"/> | |
| 3 | Are data downloads and backups being performed as scheduled? | <input type="checkbox"/> | No longer required |
| 4 | Are general observations being made and recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook |
| 5 | Are site supplies on-hand and replenished in a timely fashion? | <input checked="" type="checkbox"/> | |
| 6 | Are sample flow rates recorded? How? | <input checked="" type="checkbox"/> | SSRF, logbook, call-in |
| 7 | Are samples sent to the lab on a regular schedule in a timely fashion? | <input checked="" type="checkbox"/> | |
| 8 | Are filters protected from contamination during handling and shipping? How? | <input checked="" type="checkbox"/> | Clean gloves on and off |
| 9 | Are the site conditions reported regularly to the field operations manager or staff? | <input checked="" type="checkbox"/> | |

QC Check Performed	Frequency	Compliant
Multi-point MFC Calibrations	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Flow System Leak Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Filter Pack Inspection	<input type="checkbox"/>	<input type="checkbox"/>
Flow Rate Setting Checks	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
Visual Check of Flow Rate Rotometer	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>
In-line Filter Inspection/Replacement	<input checked="" type="checkbox"/> Semiannually	<input checked="" type="checkbox"/>
Sample Line Check for Dirt/Water	<input checked="" type="checkbox"/> Weekly	<input checked="" type="checkbox"/>

Provide any additional explanation (photograph or sketch if necessary) regarding conditions listed above, or any other features, natural or man-made, that may affect the monitoring parameters:

The filter is changed with the sample pump running while the tower is in the down position. This may be due to a mislabeled switch for the sample pump. This condition was also reported following the previous audit visit.

APPENDIX B

CASTNET Site Spot Report Forms

EEMS Spot Report

Data Compiled: 5/25/2013 3:48:13 PM

SiteVisitDate	Site	Technician
02/13/2013	CVL151	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	6	0.16	c	P
2	Temperature max error	P	4	0.5	6	0.38	c	P
3	Ozone Slope	P	0	1.1	4	1.00458	unitless	P
4	Ozone Intercept	P	0	5	4	-0.04842	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
6	Ozone % difference avg	P	7	10	4	0.5	%	P
7	Ozone % difference max	P	7	10	4	0.6	%	P
8	Flow Rate average % difference	P	10	5	6	1.53	%	P
9	Flow Rate max % difference	P	10	5	6	1.7	%	P
10	DAS Time maximum error	P	0	5	1	0.00	min	P
11	DAS Voltage average error	P	7	0.003	28	0.0001	V	P
12	Shelter Temperature average error	P	5	1	3	0.06	c	P
13	Shelter Temperature max error	P	5	1	3	0.10	c	P

Field Performance Comments

1 **Parameter:** Flow Rate **SensorComponent:** Moisture Present **CommentCode** 72
The filter sample tubing has drops of moisture in low sections outside the shelter.

Field Systems Comments

- Parameter:** DocumentationCo
The site operations manual does not apply to the currently installed instrumentation.
- Parameter:** SitingCriteriaCom
The site is located in a Pine forest on USFS managed land. The tree line has been cut back to at least 17 meters from the site.
- Parameter:** ShelterCleanNotes
The shelter is somewhat cluttered. The floor and lower walls are beginning to rot.

EEMS Spot Report

Data Compiled: 5/25/2013 4:35:44 PM

SiteVisitDate	Site	Technician
02/14/2013	CAD150	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	6	0.08	c	P
2	Temperature max error	P	4	0.5	6	0.13	c	P
3	Ozone Slope	P	0	1.1	4	0.98806	unitless	P
4	Ozone Intercept	P	0	5	4	0.40998	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99997	unitless	P
6	Ozone % difference avg	P	7	10	4	0.8	%	P
7	Ozone % difference max	P	7	10	4	1.0	%	P
8	Flow Rate average % difference	P	10	5	6	2.02	%	P
9	Flow Rate max % difference	P	10	5	6	2.15	%	P
10	DAS Time maximum error	P	0	5	1	0.05	min	P
11	DAS Voltage average error	P	7	0.003	28	0.0002	V	P
12	Shelter Temperature average error	P	5	1	3	0.07	c	P
13	Shelter Temperature max error	P	5	1	3	0.14	c	P

Field Systems Comments

1 Parameter: SiteOpsProcedures

The ozone analyzer sample train is leak checked by capping the inlet every two weeks.

2 Parameter: ShelterCleanNotes

The bottom of the shelter walls are very badly deteriorated. The floor and ceiling have been repaired.

3 Parameter: PollAnalyzerCom

Both the filter pack flow tubing and ozone sample line fold tightly against the tower hinge when the tower is lowered. This could eventually cause damage to the tubing.

EEMS Spot Report

Data Compiled: 5/27/2013 3:04:11 PM

SiteVisitDate	Site	Technician
02/15/2013	ALC188	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	3	0.31	c	P
2	Temperature max error	P	4	0.5	3	0.36	c	P
3	Ozone Slope	P	0	1.1	4	1.01151	unitless	P
4	Ozone Intercept	P	0	5	4	-0.34553	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99998	unitless	P
6	Ozone % difference avg	P	7	10	4	0.8	%	P
7	Ozone % difference max	P	7	10	4	1.1	%	P
8	Flow Rate average % difference	P	10	5	2	3.75	%	P
9	Flow Rate max % difference	P	10	5	2	3.87	%	P
10	DAS Time maximum error	P	0	5	1	0.00	min	P
11	DAS Voltage average error	P	7	0.003	28	0.0001	V	P
12	Shelter Temperature average error	P	5	1	3	0.43	c	P
13	Shelter Temperature max error	P	5	1	3	0.93	c	P

Field Systems Comments

1 Parameter: SiteOpsProcComm

The site operator uses the same gloves to remove and install the filter pack.

2 Parameter: SitingCriteriaCom

The site is well located with respect to CASTNET siting criteria, however there is a small campground 0.5 km to the northwest which may be a source of smoke.

3 Parameter: ShelterCleanNotes

The site is clean and neat.

4 Parameter: PollAnalyzerCom

The site was revisited on 3/3/2013 to complete the ozone performance evaluation. The level 2 ozone standard malfunctioned during the audit visit performed on 2/15/213.

5 Parameter: MetSensorComme

The temperature shield is pointing south and not north as stated in the QAPP. This condition was observed and reported during the previous site audit visits in February 2009 and 2011.

EEMS Spot Report

Data Compiled: 5/27/2013 2:50:58 PM

SiteVisitDate	Site	Technician
02/17/2013	SUM156	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	0.98315	unitless	P
2	Ozone Intercept	P	0	5	4	-0.12501	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99995	unitless	P
4	Ozone % difference avg	P	7	10	4	1.7	%	P
5	Ozone % difference max	P	7	10	4	2.4	%	P

EEMS Spot Report

Data Compiled: 5/27/2013 1:59:56 PM

Site Visit Date	Site	Technician
02/28/2013	SND152	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.00643	unitless	P
2	Ozone Intercept	P	0	5	4	-0.28276	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
4	Ozone % difference avg	P	7	10	4	0.2	%	P
5	Ozone % difference max	P	7	10	4	0.4	%	P

EEMS Spot Report

Data Compiled: 5/27/2013 1:47:10 PM

SiteVisitDate	Site	Technician
02/28/2013	GAS153	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.01205	unitless	P
2	Ozone Intercept	P	0	5	4	-0.25812	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99998	unitless	P
4	Ozone % difference avg	P	7	10	4	1.0	%	P
5	Ozone % difference max	P	7	10	4	1.8	%	P

Field Performance Comments

- Parameter:** Ozone **SensorComponent:** Cell B Freq. **CommentCode** 99
This analyzer diagnostic check is outside the manufacturer's recommended value.
- Parameter:** Ozone **SensorComponent:** Cell A Freq. **CommentCode** 99
This analyzer diagnostic check is outside the manufacturer's recommended value.

EEMS Spot Report

Data Compiled: 5/27/2013 1:33:00 PM

SiteVisitDate	Site	Technician
02/20/2013	IRL141	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.00192	unitless	P
2	Ozone Intercept	P	0	5	4	-0.84313	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99996	unitless	P
4	Ozone % difference avg	P	7	10	4	0.8	%	P
5	Ozone % difference max	P	7	10	4	1.1	%	P

EEMS Spot Report

Data Compiled: 5/27/2013 3:35:21 PM

Site Visit Date Site Technician

03/01/2013 MAC426 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature 2 meter average error	P	5	0.5	3	0.33	c	P
2	Temperature 2 meter max error	P	5	0.5	3	0.43	c	P
3	Wind Speed average error below 5 m/s in m/s	P	3	0.5	4	0.01	m/s	P
4	Wind Speed max error below 5 m/s in m/s	P	3	0.5	4	0.03	m/s	P
5	Wind Speed average % difference above 5 m/s	P	3	5	4	0.1	%	P
6	Wind Speed max % difference above 5 m/s	P	3	5	4	0.3	%	P
7	Wind Speed Torque average error	P	3	0.5	1	0.20	g-cm	P
8	Wind Speed Torque max error	P	3	0.5	1	0.2	g-cm	P
9	Wind Direction Input Deg True average error (deg)	P	2	5	10	1.4	degrees	P
10	Wind Direction Input Deg True max error (deg)	P	2	5	10	2	degrees	P
11	Wind Direction Linearity average error (deg)	P	2	5	16	1.5	degrees	P
12	Wind Direction Linearity max error (deg)	P	2	5	16	5	degrees	P
13	Wind Direction Torque average error	P	2	20	1	6	g-cm	P
14	Wind Direction Torque max error	P	2	20	1	7	g-cm	P
15	Temperature average error	P	4	0.5	3	0.31	c	P
16	Temperature max error	P	4	0.5	3	0.34	c	P
17	Relative Humidity average above 85%	P	6	10	2	2.2	%	P
18	Relative Humidity max above 85%	P	6	10	2	2.2	%	P
19	Relative Humidity average below 85%	P	6	10	4	14.9	%	Fail
20	Relative Humidity max below 85%	P	6	10	4	27.4	%	Fail
21	Solar Radiation % diff of avg	P	3	10	18	6.8	%	P
22	Solar Radiation % diff of max STD value	P	3	10	18	9.2	%	P
23	Precipitation average % difference	P	1	10	2	6.0	%	P
24	Precipitation max % difference	P	1	10	2	8.0	%	P
25	Ozone Slope	P	0	1.1	4	1.03139	unitless	P
26	Ozone Intercept	P	0	5	4	1.44173	ppb	P
27	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
28	Ozone % difference avg	P	7	10	4	5.4	%	P
29	Ozone % difference max	P	7	10	4	6.7	%	P
30	Flow Rate average % difference	P	10	5	2	0.84	%	P
31	Flow Rate max % difference	P	10	5	2	0.94	%	P
32	DAS Time maximum error	P	0	5	1	0.45	min	P
33	DAS Voltage average error	P	13	0.003	21	0.0001	V	P
34	DAS Voltage average error	P	8	0.003	21	0.0002	V	P

SiteVisitDate	Site	Technician							
03/01/2013	MAC426	Eric Hebert							
35	Shelter Temperature average error	P	5	1	6	0.98	c	P	
36	Shelter Temperature max error	P	5	1	6	1.4	c	Fail	

Field Performance Comments

- 1 **Parameter:** Flow Rate **SensorComponent:** Filter Position **CommentCode** 202

The filter attachment plate is mounted too high in the enclosure resulting in the filter being recessed in the enclosure and not exposed in the standard geometric orientation.

- 2 **Parameter:** Precipitation **SensorComponent:** Properly Sited **CommentCode** 193

Objects violate the 45 degree rule for the tipping bucket rain gage.

Field Systems Comments

- 1 **Parameter:** SiteOpsProcComm

The site operators are very knowledgeable with air quality monitoring. They are doing a very good job with site activities and filter handling.

- 2 **Parameter:** SitingCriteriaCom

Bowling Green is within 40 km of the site. The site is in a hay field which is harvested twice per year. The area to the west and south is comprised of livestock farms including cattle and poultry. The coordinates provided in the QAPP are incorrect.

- 3 **Parameter:** ShelterCleanNotes

The shelter is well maintained, clean, neat, and well organized.

EEMS Spot Report

Data Compiled: 5/26/2013 4:28:14 PM

Site Visit Date Site Technician

03/03/2013 CHE185 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature 2 meter average error	P	5	0.5	3	0.15	c	P
2	Temperature 2 meter max error	P	5	0.5	3	0.17	c	P
3	Wind Speed average error below 5 m/s in m/s	P	3	0.5	8	0.12	m/s	P
4	Wind Speed max error below 5 m/s in m/s	P	3	0.5	8	0.30	m/s	P
5	Wind Speed average % difference above 5 m/s	P	3	5	8	0.5	%	P
6	Wind Speed max % difference above 5 m/s	P	3	5	8	0.7	%	P
7	Wind Speed Torque average error	P	3	0.5	1	1.00	g-cm	Fail
8	Wind Speed Torque max error	P	3	0.5	1	1.1	g-cm	Fail
9	Wind Direction Input Deg True average error (deg)	P	2	5	8	0.5	degrees	P
10	Wind Direction Input Deg True max error (deg)	P	2	5	8	2	degrees	P
11	Wind Direction Linearity average error (deg)	P	2	5	16	1.0	degrees	P
12	Wind Direction Linearity max error (deg)	P	2	5	16	3	degrees	P
13	Wind Direction Torque average error	P	2	20	1	22	g-cm	Fail
14	Wind Direction Torque max error	P	2	20	1	30	g-cm	Fail
15	Temperature average error	P	4	0.5	3	0.13	c	P
16	Temperature max error	P	4	0.5	3	0.24	c	P
17	Relative Humidity average above 85%	P	6	10	1	1.5	%	P
18	Relative Humidity max above 85%	P	6	10	1	1.5	%	P
19	Relative Humidity average below 85%	P	6	10	2	7.2	%	P
20	Relative Humidity max below 85%	P	6	10	2	8.1	%	P
21	Solar Radiation % diff of avg	P	9	10	10	1.41	%	P
22	Solar Radiation % diff of max STD value	P	9	10	10	1.7	%	P
23	Precipitation average % difference	P	1	10	2	2.0	%	P
24	Precipitation max % difference	P	1	10	2	4.0	%	P
25	Ozone Slope	P	0	1.1	4	0.99014	unitless	P
26	Ozone Intercept	P	0	5	4	2.2714	ppb	P
27	Ozone correlation	P	0	0.995	4	0.99990	unitless	P
28	Ozone % difference avg	P	7	10	4	3.4	%	P
29	Ozone % difference max	P	7	10	4	6.5	%	P
30	Flow Rate average % difference	P	10	5	2	1.38	%	P
31	Flow Rate max % difference	P	10	5	2	1.65	%	P
32	DAS Time maximum error	P	0	5	1	0.03	min	P
33	DAS Voltage average error	P	6	0.003	7	0.0010	V	P
34	Surface Wetness Sensitivity test on	P	9	10000	1	230	k ohms	P

Site	VisitDate	Site	Technician						
03/03/2013		CHE185	Eric Hebert						
35	Surface Wetness Sensitivity test off		P	9	10000	1	240	k ohms	P
36	Surface Wetness Response		P	9	0.5	1	1.05		P
37	Shelter Temperature average error		P	5	1	9	0.58	c	P
38	Shelter Temperature max error		P	5	1	9	0.82	c	P

Field Performance Comments

1 **Parameter:** Flow Rate **SensorComponent:** Filter Position **CommentCode** 71

The filter attachment plate is mounted too low in the enclosure resulting in the filter being exposed to wind-driven rain and in the standard geometric orientation.

Field Systems Comments

1 **Parameter:** SiteOpsProcComm

The site is well maintained and operated. Very good sample change out procedures are being used by the site operator.

2 **Parameter:** SitingCriteriaCom

The site is located in a pasture with grazing cattle sometimes as close as 5 meters.

3 **Parameter:** ShelterCleanNotes

The shelter is in very good condition, clean, neat, and well organized.

4 **Parameter:** PollAnalyzerCom

The ozone analyzer response to audit gas was observed to be very slow. This was discussed with the site operator, and it was recommended that the monitor averaging interval be changed to a shorter period. It was also suggested that the sample line be changed from 3/8 inch tubing to 1/4 inch tubing.

EEMS Spot Report

Data Compiled: 5/26/2013 5:11:24 PM

SiteVisitDate	Site	Technician
03/05/2013	CDZ171	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	6	0.13	c	P
2	Temperature max error	P	4	0.5	6	0.21	c	P
3	Ozone Slope	P	0	1.1	4	1.01314	unitless	P
4	Ozone Intercept	P	0	5	4	-1.30738	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99996	unitless	P
6	Ozone % difference avg	P	7	10	4	0.7	%	P
7	Ozone % difference max	P	7	10	4	1.3	%	P
8	Flow Rate average % difference	P	10	5	3	2.95	%	P
9	Flow Rate max % difference	P	10	5	3	3.18	%	P
10	DAS Time maximum error	P	0	5	1	0.00	min	P
11	DAS Voltage average error	P	7	0.003	35	0.0001	V	P
12	Shelter Temperature average error	P	5	1	3	1.1	c	Fail
13	Shelter Temperature max error	P	5	1	3	1.23	c	Fail

Field Systems Comments

1 Parameter: SiteOpsProcComm

Tower is lowered and filter changed without downing ozone channel.

2 Parameter: SitingCriteriaCom

The site is in a corn field with limited agricultural operations within 15 meters.

3 Parameter: ShelterCleanNotes

The shelter floor and door have been repaired since the previous audit visit. The shelter is still cluttered and dirty.

4 Parameter: MetSensorComme

The temperature sensor has been installed in a naturally aspirated shield on the sample tower.

EEMS Spot Report

Data Compiled: 5/26/2013 10:36:19 PM

Site Visit Date Site Technician

03/06/2013 BBE401 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Wind Speed average error below 5m/s in m/s	P	3	0.5	4	0.01	m/s	P
2	Wind Speed max error below 5m/s in m/s	P	3	0.5	4	0.03	m/s	P
3	Wind Speed average % difference above 5 m/s	P	3	5	4	0.2	%	P
4	Wind Speed max % difference above 5 m/s	P	3	5	4	0.4	%	P
5	Wind Speed Torque average error	P	3	0.5	1	0.25	g-cm	P
6	Wind Speed Torque max error	P	3	0.5	1	0.3	g-cm	P
7	Wind Direction Input Deg True average error (de	P	2	5	12	1.8	degrees	P
8	Wind Direction Input Deg True max error (deg)	P	2	5	12	3	degrees	P
9	Wind Direction Linearity average error (deg)	P	2	5	24	0.8	degrees	P
10	Wind Direction Linearity max error (deg)	P	2	5	24	2	degrees	P
11	Wind Direction Torque average error	P	2	20	1	10	g-cm	P
12	Wind Direction Torque max error	P	2	20	1	10	g-cm	P
13	Temperature average error	P	4	0.5	9	0.16	c	P
14	Temperature max error	P	4	0.5	9	0.22	c	P
15	Relative Humidity average above 85%	P	6	10	2	2.0	%	P
16	Relative Humidity max above 85%	P	6	10	2	2.0	%	P
17	Relative Humidity average below 85%	P	6	10	4	1.8	%	P
18	Relative Humidity max below 85%	P	6	10	4	2.5	%	P
19	Solar Radiation % diff of avg	P	9	10	15	8.95	%	P
20	Solar Radiation % diff of max STD value	P	9	10	15	8.7	%	P
21	Precipitation average % difference	P	1	10	2	3.0	%	P
22	Precipitation max % difference	P	1	10	2	4.0	%	P
23	Ozone Slope	P	0	1.1	4	0.98260	unitless	P
24	Ozone Intercept	P	0	5	4	2.099	ppb	P
25	Ozone correlation	P	0	0.995	4	0.99991	unitless	P
26	Ozone % difference avg	P	7	10	4	2.0	%	P
27	Ozone % difference max	P	7	10	4	3.5	%	P
28	Flow Rate average % difference	P	10	5	6	0.43	%	P
29	Flow Rate max % difference	P	10	5	6	0.70	%	P
30	DAS Time maximum error	P	0	5	1	0.02	min	P
31	DAS Voltage average error	P	10	0.003	35	0.0000	V	P
32	DAS Voltage average error	P	2	0.003	35	0.0000	V	P
33	Shelter Temperature average error	P	5	1	6	0.44	c	P
34	Shelter Temperature max error	P	5	1	6	0.61	c	P

Field Systems Comments

1 Parameter: SiteOpsProcedures

The ozone sample line is leak tested every month when the inlet filter is replaced.

2 Parameter: ShelterCleanNotes

The shelter is clean, neat, and well organized.

3 Parameter: MetOpMaintCom

The signal cables are showing signs of wear. The precipitation gage signal cable is in poor condition.

EEMS Spot Report

Data Compiled: 5/27/2013 9:39:16 AM

SiteVisitDate	Site	Technician
03/06/2013	MCK131	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	6	0.08	c	P
2	Temperature max error	P	4	0.5	6	0.12	c	P
3	Ozone Slope	P	0	1.1	4	1.016	unitless	P
4	Ozone Intercept	P	0	5	4	-0.62386	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
6	Ozone % difference avg	P	7	10	4	0.5	%	P
7	Ozone % difference max	P	7	10	4	1.2	%	P
8	Flow Rate average % difference	P	10	5	3	0.24	%	P
9	Flow Rate max % difference	P	10	5	3	0.40	%	P
10	DAS Time maximum error	P	0	5	1	0.02	min	P
11	DAS Voltage average error	P	7	0.003	7	0.0001	V	P
12	Shelter Temperature average error	P	5	1	3	1.53	c	Fail
13	Shelter Temperature max error	P	5	1	3	1.7	c	Fail

Field Systems Comments

1 Parameter: ShelterCleanNotes

The shelter is neat, clean, and well organized.

EEMS Spot Report

Data Compiled: 5/27/2013 10:48:55 AM

SiteVisitDate	Site	Technician
03/06/2013	MCK231	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	6	0.15	c	P
2	Temperature max error	P	4	0.5	6	0.30	c	P
3	Ozone Slope	P	0	1.1	4	0.86335	unitless	Fail
4	Ozone Intercept	P	0	5	4	-1.19057	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99997	unitless	P
6	Ozone % difference avg	P	7	10	4	15.7	%	Fail
7	Ozone % difference max	P	7	10	4	17.1	%	Fail
8	Flow Rate average % difference	P	10	5	4	2.81	%	P
9	Flow Rate max % difference	P	10	5	4	2.98	%	P
10	DAS Time maximum error	P	0	5	1	0.00	min	P
11	DAS Voltage average error	P	7	0.003	28	0.0001	V	P
12	Shelter Temperature average error	P	5	1	3	1.11	c	Fail
13	Shelter Temperature max error	P	5	1	3	1.25	c	Fail

Field Systems Comments

1 Parameter: ShelterCleanNotes

The site instruments are located in the MCK131 shelter. The same site operator is servicing both sites.

2 Parameter: PollAnalyzerCom

The ozone analyzer failed the performance evaluation. The field operations staff at AMEC were aware of the problem and had sent a replacement ozone monitor to the site operator for installation. The site operator had not been informed of the problem and had not replaced the site monitor prior to the audit visit. The site will be revisited for an ozone PE following the replacement of the site ozone analyzer.

EEMS Spot Report

Data Compiled: 5/27/2013 8:55:27 AM

Site Visit Date Site Technician

03/07/2013 PAL190 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature 2 meter average error	P	5	0.5	3	0.04	c	P
2	Temperature 2 meter max error	P	5	0.5	3	0.07	c	P
3	Wind Speed average error below 5 m/s in m/s	P	3	0.5	8	0.05	m/s	P
4	Wind Speed max error below 5 m/s in m/s	P	3	0.5	8	0.20	m/s	P
5	Wind Speed average % difference above 5 m/s	P	3	5	8	0.0	%	P
6	Wind Speed max % difference above 5 m/s	P	3	5	8	0.0	%	P
7	Wind Speed Torque average error	P	3	0.5	1	0.35	g-cm	P
8	Wind Speed Torque max error	P	3	0.5	1	0.4	g-cm	P
9	Wind Direction Input Deg True average error (deg)	P	2	5	8	1.2	degrees	P
10	Wind Direction Input Deg True max error (deg)	P	2	5	8	3	degrees	P
11	Wind Direction Linearity average error (deg)	P	2	5	16	1.0	degrees	P
12	Wind Direction Linearity max error (deg)	P	2	5	16	2	degrees	P
13	Wind Direction Torque average error	P	2	20	1	15	g-cm	P
14	Wind Direction Torque max error	P	2	20	1	18	g-cm	P
15	Temperature average error	P	4	0.5	9	0.04	c	P
16	Temperature max error	P	4	0.5	9	0.07	c	P
17	Relative Humidity average above 85%	P	6	10	2	9.1	%	P
18	Relative Humidity max above 85%	P	6	10	2	9.1	%	P
19	Relative Humidity average below 85%	P	6	10	4	3.3	%	P
20	Relative Humidity max below 85%	P	6	10	4	4.9	%	P
21	Solar Radiation % diff of avg	P	9	10	12	1.52	%	P
22	Solar Radiation % diff of max STD value	P	9	10	12	0.90	%	P
23	Precipitation average % difference	P	1	10	2	1.0	%	P
24	Precipitation max % difference	P	1	10	2	2.0	%	P
25	Ozone Slope	P	0	1.1	4	0.98874	unitless	P
26	Ozone Intercept	P	0	5	4	0.63510	ppb	P
27	Ozone correlation	P	0	0.995	4	1.00000	unitless	P
28	Ozone % difference avg	P	7	10	4	0.5	%	P
29	Ozone % difference max	P	7	10	4	0.7	%	P
30	Flow Rate average % difference	P	10	5	3	1.33	%	P
31	Flow Rate max % difference	P	10	5	3	1.43	%	P
32	DAS Time maximum error	P	0	5	1	0.00	min	P
33	DAS Voltage average error	P	7	0.003	35	0.0000	V	P
34	Surface Wetness Sensitivity test on	P	12	10000	1	210	k ohms	P

SiteVisitDate	Site	Technician							
03/07/2013	PAL190	Eric Hebert							
35	Surface Wetness Sensitivity test off	P	12	10000	1	220	k ohms	P	
36	Surface Wetness Response	P	12	0.5	1	1.02		P	
37	Shelter Temperature average error	P	5	1	9	0.73	c	P	
38	Shelter Temperature max error	P	5	1	9	0.77	c	P	

Field Systems Comments

1 Parameter: DasComments

The lower temperature sensor is mounted 1.75 meters above the ground and not 2 meters as stated in the QAPP. This condition was observed and reported during the two previous audit visits.

2 Parameter: SiteOpsProcedures

The ozone sample train is leak tested every two weeks.

3 Parameter: DocumentationCo

The site logbook is not used for routine weekly site visits.

4 Parameter: SitingCriteriaCom

The site is located 40 km southeast of Amarillo TX which has a population of approximately 178,000.

5 Parameter: ShelterCleanNotes

New shelter, in very good condition.

6 Parameter: MetSensorComme

The surface wetness sensor grid is inclined approximately 45 degrees and is oriented to the northwest.

7 Parameter: MetOpMaintCom

Temperature and 2 meter temperature blowers are functioning. The blower status can be observed on the computer screen when testing the blowers, however the data status cannot be verified in the DAS.

EEMS Spot Report

Data Compiled: 5/27/2013 1:12:17 PM

Site Visit Date Site Technician
03/09/2013 CKT136 Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	P	4	0.5	3	0.20	c	P
2	Temperature max error	P	4	0.5	3	0.27	c	P
3	Ozone Slope	P	0	1.1	4	0.99158	unitless	P
4	Ozone Intercept	P	0	5	4	-0.26696	ppb	P
5	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
6	Ozone % difference avg	P	7	10	4	1.5	%	P
7	Ozone % difference max	P	7	10	4	2.4	%	P
8	Flow Rate average % difference	P	10	5	2	1.27	%	P
9	Flow Rate max % difference	P	10	5	2	1.32	%	P
10	DAS Time maximum error	P	0	5	1	0.00	min	P
11	DAS Voltage average error	P	7	0.003	14	0.0002	V	P
12	Shelter Temperature average error	P	5	1	9	0.42	c	P
13	Shelter Temperature max error	P	5	1	9	0.42	c	P

Field Performance Comments

- Parameter:** Flow Rate **SensorComponent:** Moisture Present **CommentCode** 72
The filter sample tubing has drops of moisture in low sections outside the shelter.
- Parameter:** Ozone **SensorComponent:** Cell A Freq. **CommentCode** 99
This analyzer diagnostic check is outside the manufacturer's recommended value.

Field Systems Comments

- Parameter:** SiteOpsProcComm
The filter is changed with the sample pump running while the tower is in the down position. This may be due to a mislabeled switch for the sample pump. This condition was also reported following the previous audit visit.
- Parameter:** ShelterCleanNotes
The shelter is very clean and well organized.
- Parameter:** PollAnalyzerCom
The meteorological tower has been removed. The sample tower is in poor condition. The upper section is bent, and the lower section will not align and lock in place. Wire ties are used to secure the tower in the upright position.
- Parameter:** MetOpMaintCom
The temperature sensor has been installed at approximately 8 meters from the ground on the sample tower in a naturally aspirated shield.

EEMS Spot Report

Data Compiled: 5/27/2013 7:51:17 PM

SiteVisitDate	Site	Technician
03/29/2013	COW137	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.02623	unitless	P
2	Ozone Intercept	P	0	5	4	-0.19778	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
4	Ozone % difference avg	P	7	10	4	2.5	%	P
5	Ozone % difference max	P	7	10	4	2.8	%	P

EEMS Spot Report

Data Compiled: 5/27/2013 8:04:59 PM

SiteVisitDate	Site	Technician
03/30/2013	ESP127	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.00977	unitless	P
2	Ozone Intercept	P	0	5	4	-0.33906	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99999	unitless	P
4	Ozone % difference avg	P	7	10	4	0.6	%	P
5	Ozone % difference max	P	7	10	4	0.6	%	P

EEMS Spot Report

Data Compiled: 5/27/2013 8:19:25 PM

SiteVisitDate	Site	Technician
03/30/2013	SPD111	Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	P	0	1.1	4	1.0111	unitless	P
2	Ozone Intercept	P	0	5	4	-0.20253	ppb	P
3	Ozone correlation	P	0	0.995	4	0.99995	unitless	P
4	Ozone % difference avg	P	7	10	4	1.0	%	P
5	Ozone % difference max	P	7	10	4	2.1	%	P

APPENDIX C

CASTNET Ozone Performance Evaluation Forms

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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SUM156-Sandy Grenville-02/17/2013

1	2/17/2013	DAS	Campbell	000335	CR3000	2114
2	2/17/2013	Ozone	ThermoElectron Inc	00823	49i A1NAA	1009241790
3	2/17/2013	Ozone Standard	ThermoElectron Inc	000453	49i A3NAA	CM08200027
4	2/17/2013	Zero air pump	Werther International	06876	C 70/4	000814286

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241790		SUM156	Sandy Grenville	02/17/2013	Ozone	00823

Slope:	0.98315	Slope:	0.00000
Intercept	-0.12501	Intercept	0.00000
CorrCoff	0.99995	CorrCoff	0.00000

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
1.7%	2.4%		

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.25	0.43	0.14	ppb	
primary	2	46.96	47.08	46.79	ppb	-0.62%
primary	3	65.34	65.44	63.88	ppb	-2.38%
primary	4	85.70	85.78	83.90	ppb	-2.19%
primary	5	109.55	109.60	107.80	ppb	-1.64%

Sensor Component	Cell B Noise	Condition	1.0 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.3	Status	pass
Sensor Component	Span	Condition	1.032	Status	pass
Sensor Component	Cell B Freq.	Condition	111.3 IHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.69 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	39.2 C	Status	pass
Sensor Component	Cell A Pressure	Condition	745 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	105.8 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.68 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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IRL141-Sandy Grenville-02/20/2013

1	2/20/2013	Computer	Dell	000245	D520	unknown
2	2/20/2013	DAS	Campbell	000340	CR3000	2119
3	2/20/2013	Modem	Raven	06384	H4222-C	0802310499
4	2/20/2013	Ozone	ThermoElectron Inc	000724	49i A1NAA	1105347328
5	2/20/2013	Ozone Standard	ThermoElectron Inc	000694	49i A3NAA	1030244815
6	2/20/2013	Sample Tower	Aluma Tower	000020	B	AT-61152-A-H8-F
7	2/20/2013	UPS	APC	06790	RS900	unknown
8	2/20/2013	Zero air pump	Werther International	06898	C 70/4	000821905

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1105347328		IRL141	Sandy Grenville	02/20/2013	Ozone	000724

Slope:	1.00192	Slope:	0.00000
Intercept	-0.84313	Intercept	0.00000
CorrCoff	0.99996	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
0.8%	1.1%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.14	0.32	-0.93	ppb	
primary	2	35.57	35.71	35.32	ppb	-1.09%
primary	3	66.02	66.12	65.72	ppb	-0.60%
primary	4	85.84	85.91	85.30	ppb	-0.71%
primary	5	111.65	111.69	110.70	ppb	-0.89%

Sensor Component	Cell B Noise	Condition	1.4 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	-0.10	Status	pass
Sensor Component	Span	Condition	1.011	Status	pass
Sensor Component	Cell B Freq.	Condition	91.7 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.73 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	30.4 C	Status	pass
Sensor Component	Cell A Pressure	Condition	736 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	1.1 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	89.5 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.74 lpm	Status	pass
Sensor Component	Battery Backup	Condition	Functioning	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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SND152-Sandy Grenville-02/28/2013

1	2/28/2013	Computer	Dell	000260	D520	unknown
2	2/28/2013	DAS	Campbell	000357	CR3000	2135
3	2/28/2013	Modem	Raven	06458	V4221-V	0808337422
4	2/28/2013	Ozone	ThermoElectron Inc	000619	49i A1NAA	1009241791
5	2/28/2013	Ozone Standard	ThermoElectron Inc	000215	49i A3NAA	0622717856
6	2/28/2013	Sample Tower	Aluma Tower	000148	B	none
7	2/28/2013	Zero air pump	Werther International	06867	C 70/4	000814279

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241791		SND152	Sandy Grenville	02/28/2013	Ozone	000619

Slope:	1.00643	Slope:	0.00000
Intercept	-0.28276	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg % Dif
A Max % Di	A Max % Di
0.2%	0.4%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.08	0.10	-0.29	ppb	
primary	2	30.69	30.83	30.86	ppb	0.10%
primary	3	50.66	50.78	50.97	ppb	0.37%
primary	4	79.72	79.80	79.82	ppb	0.03%
primary	5	102.01	102.07	102.50	ppb	0.42%

Sensor Component	Cell B Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.000	Status	pass
Sensor Component	Span	Condition	1.04	Status	pass
Sensor Component	Cell B Freq.	Condition	99.0 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.70 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	34.8 C	Status	pass
Sensor Component	Cell A Pressure	Condition	711 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	108.9 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.72 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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GAS153-Sandy Grenville-02/28/2013

1	2/28/2013	DAS	Campbell	000635	CR3000	4934
2	2/28/2013	Modem	Raven	06805	H4222-C	0934411884
3	2/28/2013	Ozone	ThermoElectron Inc	000729	49i A1NAA	1105347323
4	2/28/2013	Ozone Standard	ThermoElectron Inc	000697	49i A3NAA	1030244814
5	2/28/2013	Sample Tower	Aluma Tower	000138	B	none
6	2/28/2013	UPS	APC	missing	BP6505	NB0009260535
7	2/28/2013	Zero air pump	Werther International	06865	C 70/4	000814277

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1105347323		GAS153	Sandy Grenville	02/28/2013	Ozone	000729

Slope:	1.01205	Slope:	0.00000
Intercept	-0.25812	Intercept	0.00000
CorrCoff	0.99998	CorrCoff	0.00000

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

DAS 1:	DAS 2:		
A Avg % Diff:	A Max % Di	A Avg %Dif	A Max % Di
1.0%	1.8%		

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.01	0.17	-0.39	ppb	
primary	2	30.70	30.84	31.39	ppb	1.78%
primary	3	49.84	49.96	50.32	ppb	0.72%
primary	4	80.64	80.72	81.40	ppb	0.84%
primary	5	99.81	99.87	100.70	ppb	0.83%

Sensor Component	Cell B Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	-0.60	Status	pass
Sensor Component	Span	Condition	1.016	Status	pass
Sensor Component	Cell B Freq.	Condition	78.6 khz	Status	Fail
Sensor Component	System Memo	Condition	See comments	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.73 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	30.9 C	Status	pass
Sensor Component	Cell A Pressure	Condition	716 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.8 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	79.8 kHz	Status	Fail
Sensor Component	Cell A Flow	Condition	0.74 lpm	Status	pass
Sensor Component	Battery Backup	Condition	Not functioning	Status	Fail
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Ozone	GAS153	Sandy Grenville	02/28/2013	Cell B Freq.	ThermoElectron	3537	<input type="checkbox"/>	<input checked="" type="checkbox"/>
This analyzer diagnostic check is outside the manufacturer's recommended value.								
Ozone	GAS153	Sandy Grenville	02/28/2013	Cell A Freq.	ThermoElectron	3537	<input type="checkbox"/>	<input checked="" type="checkbox"/>
This analyzer diagnostic check is outside the manufacturer's recommended value.								

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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COW137-Sandy Grenville-03/29/2013

1	3/29/2013	DAS	Campbell	000401	CR3000	2529
2	3/29/2013	Ozone	ThermoElectron Inc	000622	49i A1NAA	1009241785
3	3/29/2013	Ozone Standard	ThermoElectron Inc	000686	49i A3NAA	1030244818
4	3/29/2013	UPS	APC	06744	RS900	unknown
5	3/29/2013	Zero air pump	Werther International	06878	C 70/4	000815254

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241785		COW137	Sandy Grenville	03/29/2013	Ozone	000622

Slope:	1.02623	Slope:	0.00000
Intercept	-0.19778	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
2.5%	2.8%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	0.09	0.27	-0.12	ppb	
primary	2	30.59	30.73	31.59	ppb	2.80%
primary	3	49.81	49.93	51.09	ppb	2.32%
primary	4	81.19	81.27	83.20	ppb	2.37%
primary	5	100.79	100.85	103.20	ppb	2.33%

Sensor Component	Cell B Noise	Condition	0.6 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Moderately clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	-0.10	Status	pass
Sensor Component	Span	Condition	1.044	Status	pass
Sensor Component	Cell B Freq.	Condition	93.1 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.65 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	32.4 C	Status	pass
Sensor Component	Cell A Pressure	Condition	685 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	109.0 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.67 lpm	Status	pass
Sensor Component	Battery Backup	Condition	Not functioning	Status	Fail
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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ESP127-Sandy Grenville-03/30/2013

1	3/30/2013	DAS	Campbell	illegible	CR3000	3817
2	3/30/2013	Ozone	ThermoElectron Inc	000699	49i A1NAA	1030244804
3	3/30/2013	Ozone Standard	ThermoElectron Inc	000687	49i A3NAA	1030244809
4	3/30/2013	Zero air pump	Werther International	06909	C 70/4	000829161

Ozone Data Form

Mfg	Serial Number	Ta	Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244804		ESP127	Sandy Grenville	03/30/2013	Ozone	000699

Slope:	1.00977	Slope:	0.00000
Intercept	-0.33906	Intercept	0.00000
CorrCoff	0.99999	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg % Dif
A Max % Di	A Max % Di
0.6%	0.7%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.08	0.10	-0.47	ppb	
primary	2	30.02	30.16	30.33	ppb	0.56%
primary	3	50.31	50.43	50.72	ppb	0.58%
primary	4	80.10	80.18	80.70	ppb	0.65%
primary	5	99.60	99.66	100.10	ppb	0.44%

Sensor Component	Cell B Noise	Condition	1.1 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	-0.20	Status	pass
Sensor Component	Span	Condition	1.009	Status	pass
Sensor Component	Cell B Freq.	Condition	84.7 kHz	Status	pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.70 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	30.1 C	Status	pass
Sensor Component	Cell A Pressure	Condition	715 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	1.3 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	91.8 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.68 lpm	Status	pass
Sensor Component	Battery Backup	Condition	N/A	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass

Site Inventory by Site Visit

<i>Site Visit Date</i>	<i>Parameter</i>	<i>Mfg</i>	<i>Owner ID</i>	<i>Model Number</i>	<i>Serial Number</i>
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SPD111-Sandy Grenville-03/30/2013

1	3/30/2013	DAS	Campbell	000342	CR3000	2121
2	3/30/2013	Ozone	ThermoElectron Inc	000676	49i A1NAA	1030244794
3	3/30/2013	Ozone Standard	ThermoElectron Inc	000515	49i A3NAA	0922236891
4	3/30/2013	UPS	APC	06096	RS800	080331133278
5	3/30/2013	Zero air pump	Werther International	06916	C 70/4	000829158

Ozone Data Form

Mfg	Serial Number	Ta Site	Technician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244794	SPD111	Sandy Grenville	03/30/2013	Ozone	000676

Slope:	1.01110	Slope:	0.00000
Intercept	-0.20253	Intercept	0.00000
CorrCoff	0.99995	CorrCoff	0.00000

DAS 1:	DAS 2:
A Avg % Diff:	A Avg %Dif
A Max % Di	A Max % Di
1.0%	2.1%

Mfg	ThermoElectron Inc	Parameter	ozone
Serial Number	49C-73104-373	Tfer Desc.	Ozone transfer
Tfer ID	01100		
Slope	1.00121	Intercept	-0.18383
Cert Date	1/2/2013	CorrCoff	1.00000

UseDescription:	ConcGroup:	Tfer Raw:	Tfer Corr:	Site:	Site Unit:	PctDifference:
primary	1	-0.05	0.13	-0.39	ppb	
primary	2	30.63	30.77	30.91	ppb	0.45%
primary	3	49.80	49.92	50.95	ppb	2.06%
primary	4	79.84	79.92	80.50	ppb	0.73%
primary	5	99.69	99.75	100.40	ppb	0.65%

Sensor Component	Cell B Noise	Condition	0.9 ppb	Status	pass
Sensor Component	Cell B Tmp.	Condition		Status	pass
Sensor Component	Fullscale Voltage	Condition	N/A	Status	pass
Sensor Component	Inlet Filter Condition	Condition	Clean	Status	pass
Sensor Component	Line Loss	Condition	Not tested	Status	pass
Sensor Component	Offset	Condition	0.20	Status	pass
Sensor Component	Span	Condition	1.021	Status	pass
Sensor Component	Cell B Freq.	Condition	88.0 kHz	Status	Pass
Sensor Component	System Memo	Condition		Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	Cell B Pressure	Condition		Status	pass
Sensor Component	Cell B Flow	Condition	0.62 lpm	Status	pass
Sensor Component	Cell A Tmp.	Condition	30.1 C	Status	pass
Sensor Component	Cell A Pressure	Condition	704 mmHg	Status	pass
Sensor Component	Cell A Noise	Condition	1.4 ppb	Status	pass
Sensor Component	Cell A Freq.	Condition	89.9 kHz	Status	pass
Sensor Component	Cell A Flow	Condition	0.61 lpm	Status	pass
Sensor Component	Battery Backup	Condition	Functioning	Status	pass
Sensor Component	Zero Voltage	Condition	N/A	Status	pass