2024 – 4th Quarter Report

Support for Conducting Systems & Performance Audits of Clean Air Status and Trends Network (CASTNET) Sites and National Atmospheric Deposition Program (NADP) Monitoring Stations - III

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List of Acronyms and Abbreviations

e e e e e e e e e e e e e e e e e e e	
% diff	percent difference
A/D	analog to digital converter
ARS	Air Resource Specialists, Inc.
ASTM	American Society for Testing and Materials
BLM	Bureau of Land Management
BLM-WSO	Bureau of Land Management – Wyoming State Office
CAL	Central Analytical Laboratory
CASTNET	Clean Air Status and Trends Network
CMAQ	Community Multiscale Air Quality
DAS	data acquisition system
deg	degree
DVM	digital voltmeter
ECCC	Environment and Climate Change Canada
EEMS	Environmental, Engineering & Measurement Services, Inc.
EPA	U.S. Environmental Protection Agency
ESC	Environmental Systems Corporation
FSA	Field Systems Audit
FSAD	Field Site Audit Database
GPS	geographical positioning system
HAL	Mercury Analytical Laboratory
LADCO	Lake Michigan Air Directors Consortium
lpm	liters per minute
ME DEP	Maine Department of Environmental Protection
MD DNR	Maryland Department of Natural Resources
MLM	Multilayer Model
MN PCA	Minnesota Pollution Control Agency
m/s	meters per second
mv	millivolt
NESCAUM	Northeast States for Coordinated Air Use Management
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NYDEC	New York Department of Conservation
NYSERDA	New York State Energy Research and Development Authority
OH EPA	Ohio Environmental Protection Agency
PE	Performance Evaluation
QAPP	Quality Assurance Project Plan
SLT	State, Local, and Tribal
SCDHEC	South Carolina Department of Health and Environmental Control
SFWMD	South Florida Water Management District
SOP	standard operating procedure
TDEP	Total Deposition
TEI	Thermo Environmental Instruments
USDA-FS	United States Department of Agriculture - Forest Service

United States Forest Service
United States Fish and Wildlife Service
United States Geological Survey
United States Naval Observatory
volts direct current
Wyoming Department of Environmental Quality
Wisconsin Department of Natural Resources
World Radiation Reference
Wisconsin State Laboratory of Hygiene

1.0 CASTNET Quarterly Report

1.1 Introduction

The Clean Air Status and Trends Network (CASTNET) is a national air monitoring program established in 1988 by the US EPA. Nearly all CASTNET sites measures weekly concentrations of acidic gases and particles to provide accountability for EPA's emission reduction programs. Most sites measure ground-level ozone as well as supplemental measurements such as meteorology and/or other trace gas concentrations.

Ambient concentrations 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 critical loads research.

Historically, CASTNET pollutant flux measurements have been reported as the aggregate product of weekly measured concentrations and model-estimated deposition velocities. The Multi-layer Model (MLM) was used to derive deposition velocity estimates from on-site meteorological parameters, land use types, and site characteristics. In 2011, EPA discontinued meteorological measurements at most EPA-sponsored CASTNET sites.

Currently, CASTNET pollutant flux estimates are calculated as the aggregate product of weekly measured chemical concentrations and gridded model-estimated deposition velocities. Total deposition is assessed using the NADP's Total Deposition Hybrid Method (TDEP; EPA, 2015c; Schwede and Lear, 2014), which combines data from established ambient monitoring networks and chemical-transport models. To estimate dry deposition, ambient measurement data from CASTNET and other networks were merged with dry deposition rates and flux output from the Community Multiscale Air Quality (CMAQ) modeling system.

Since 2011 nearly all CASTNET ozone monitors have adhered to the requirements for State, Local, and Tribal (SLT) air monitoring stations as specified by the EPA in 40 CFR Part 58. As such, the ozone data collected must meet the requirements in 40 CFR Part 58 Appendix A, which defines the quality assurance (QA) requirements for gaseous pollutant ambient air monitoring. The audits performed by EEMS under this contract fulfilled the requirement for annual performance evaluation audits of pollutant monitors in the network. The QA requirements can be found at: https://www.epa.gov/amtic/regulations-guidance-and-monitoring-plans

Currently more than 85 CASTNET sites measure ground-level ozone concentrations. Annual performance evaluation (PE), ozone audit data are submitted to the Air Quality System (AQS) database.

As of October 2024, the network is comprised of 92 active rural sampling sites across the United States and Canada, cooperatively operated by the Environmental Protection Agency (EPA), the National Park Service (NPS), Bureau of Land Management – Wyoming State Office (BLM-WSO) and several independent partners. WSP is responsible for operating the EPA sponsored sites, and Air Resource Specialists, Inc. (ARS) is responsible for operating the NPS and BLM-WSO 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 reported 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.

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)	$\leq \pm 0.5^{\circ} \mathrm{C}$
Temperature Difference	Accuracy	Comparison to station temperature sensor	$\leq \pm 0.50^{\circ} \mathrm{C}$

 Table 1. Performance Audit Challenge and Acceptance Criteria

Sensor	Parameter	Audit Challenge	Acceptance Criteria	
Shelter Temperature	Accuracy	Comparison to station temperature sensor	$\leq \pm 2.0^{\circ} \mathrm{C}$	
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	<pre>< 10 g-cm Climatronics; < 20 g-cm R.M. Young</pre>	
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	$0.9000 \le m \le 1.1000$	
Ozone	Intercept	test gas concentration as	-5.0 ppb ≤b ≤5.0 ppb	
Ozone	Correlation Coefficient	transfer standard	$0.9950 \le r$	
Ozone	Percent Difference	Comparison with Level 2 standard concentration	$\leq \pm 15.1\%$ of test gas concentration and $\leq \pm 0.0015$ ppm actual difference	
DAS Accuracy Compa		Comparison with certified standard	$\leq \pm 0.003 \text{ VDC}$	

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

Field site systems audits (FSA) 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 CASTNET Sites Visited Fourth Quarter 2024

This report consists of the systems and performance, and other audit results from the CASTNET sites visited during the fourth quarter (October through December) of 2024. The site locations, sponsor, visit dates, and parameters audited, are included in Table 2.

Site ID	Date	MET	FSA	O3 PE	SO2	со	NOy	FLOW	Sponsor
GRS420	10/8/2024			1			1		NPS
DEN417	10/9/2024		1	1				1	NPS
ESP127	10/20/2024		1	1				1	EPA
DIN431	10/31/2024		1	1				1	NPS
CAN407	11/1/2024		1	1				1	NPS
ZIO433	11/10/2024			1					NPS
STK138	11/11/2024			1					EPA
BVL130	11/12/2024	1	1	1	1	1	1	1	EPA
SAL133	11/15/2024		1	1				1	EPA
CTH110	11/17/2024		1	1				1	EPA
CAT175	11/18/2024		1					1	EPA
SPD111	11/24/2024		1	1				1	EPA

Table 2. CASTNET Site Audit Visits

Site ID	Date	MET	FSA	O3 PE	SO2	CO	NOy	FLOW	Sponsor
CHE185	12/5/2024			1					EPA
CKT136	12/7/2024			1					EPA
CND125	12/8/2024			1					EPA
COW137	12/9/2024		1	1				1	EPA
DUK008	12/17/2024		1	1				1	EPA
BFT142	12/19/2024			1					EPA
SHN418	12/20/2024			1					NPS
VPI120	12/20/2024			1					EPA
WSP144	12/21/2024			1					EPA

1.4 CASTNET Audit Results

The observations and results of the systems, performance, and Ozone PE audits are included in Appendix A, *CASTNET Audit Report Forms* by site, arranged by audit date. Photographs of site conditions are included within each system report where necessary. Copies of the spot reports that were sent following the audit of each site are included as Appendix B, *CASTNET Site Spot Report Forms*.

Results of the PE audits of the gaseous pollutant monitors other than ozone, were submitted immediately following the PE and are not included in this report. All TTP PE results of gaseous pollutant monitors are uploaded to AQS and are available there. All audit data and reports are available from the EPA CASTNET website: <u>https://www.epa.gov/castnet/documents-reports#QuarterlyQualityAssuranceReports</u>

2.0 NADP Quarterly Report

2.1 Introduction

The National Atmospheric Deposition Program (NADP) operates two 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 250 sites. The precipitation event-based Atmospheric Integrated Research Monitoring Network (AIRMoN) began operation in 1992, and as of July 2019 is no longer in operation. The Mercury Deposition Network (MDN) measures total mercury in precipitation samples from approximately 90 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 networks of the NADP are sponsored by several federal, state, and local agencies as well as private organizations.

The NADP Program Office (PO) operates and administers the two precipitation chemistry networks (NTN and MDN), two atmospheric concentration networks (AMNet and AMoN), and the NADP analytical laboratory (NAL) from the Wisconsin State Lab of Hygiene (WSLH) at the University of Wisconsin in Madison. The network equipment depot (NED) is also located at the WSLH.

2.2 **Project Objectives**

The objective of this project is to perform independent and unbiased evaluations of the sites and their operation. 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 audits 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 NADP Sites Visited Fourth Quarter 2024

This report presents the NADP sites audited during the fourth quarter (October through December) of 2024. The station locations, sponsors, network. and dates of the surveys are presented in Table 3.

Site ID	Date	NTN	MDN	AMoN	Site Sponsor	Site Name
TN01	10/8/2024			1	National Park Service - NIFA	Great Smoky Mountains NP - Look Rock
TN00	10/9/2024	1			NOAA-Fed 7	Walker Branch Watershed
TN07	10/20/2024			1	WSP - EPA	Edgar Evins
UT09	11/1/2024			1	National Park Service - NIFA	Canyonlands National Park- Island in the Sky
IL37	11/11/2024			1	WSP - EPA	Stockton
IL11	11/12/2024			1	WSP - EPA	Bondville
IN41	11/14/2024	1			Agronomy Center for Research and Extension	Purdue University
IN20	11/15/2024	1			Roush Lake	USGS - NIFA
OH52	11/16/2024		1		Ohio Environmental Protection Agency	South Bass Island
NY67	11/17/2024			1	WSP - EPA	Ithaca
NY91	11/18/2024			1	WSP - EPA	Claryville
NJ98	11/19/2024			1	WSP - EPA	Washington Crossing CASTNET
VA99	11/21/2024	1			USDA-Forest Service	Natural Bridge Station
VA13	11/22/2024	1		1	WSP - EPA	Horton's Station
KY29	11/23/2024			1	WSP - EPA	Crockett
KY22	11/24/2024	1			USGS - NIFA	Lilley Cornett Woods

Site ID	Date	NTN	MDN	AMoN	Site Sponsor	Site Name
TN04	11/24/2024			1	WSP - EPA	Speedwell
OK29	12/2/2024	1			USGS - NIFA	Goodwell Research Station
OK00	12/3/2024	1			USGS - NIFA	Salt Plains National Wildlife Refuge
OK31	12/4/2024		1		Oklahoma Department of Environmental Quality	Copan
OK99	12/5/2024		1	1	Cherokee Nation Environmental Programs / WSP-EPA	Stilwell
NC26	12/8/2024			1	WSP - EPA	Candor
NC25	12/9/2024			1	WSP - EPA	Coweeta
NC36	12/16/2024	1			USGS - NIFA	Jordan Creek
NC30	12/17/2024	1		1	WSP - EPA	Duke Forest
NC98	12/17/2024			1	WSP - EPA	Duke Forest – Flux Tower
NC35	12/18/2024	1		1	Clinton Crops Research Station	North Carolina State University
NC06	12/19/2024			1	WSP - EPA	Beaufort

2.4 NADP Audit Results

NADP site audit 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 audits (i.e. photographs) are uploaded to the EPA OneDrive account where the NADP PO and the U.S. EPA POs can access them and download them as needed.

Given the volume of data generated, and the fact that data is distributed and/or is available via the internet, no audit results are included in this report.

APPENDIX A

CASTNET Audit Report Forms

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
GRS4	420-Eric H	ebert-10/08/2024				
1	10/8/2024	DAS	Environmental Sys Corp	none	8832	unknown4
2	10/8/2024	Ozone	ThermoElectron Inc	none	49i A3NAA	1201557777
3	10/8/2024	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	1130450193
4	10/8/2024	Zero air pump	Werther International	none	PC70/4	531385

Ozone Data Form

Mfg	Serial Number	r Tag Site	Т	echnician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1201557777	GRS420	D	Eric Hebert	10/08/2024	Ozone	none
Slope: Intercept CorrCoff:	0.99777 Slope 0.09345 Inter 1.00000 Corr	e: () cept () Coff: ()	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Paramete	er ozone c. Ozone primary stan
DAS 1.	DA	NS 2.			0.0007		0.04740
DAS 1: A Avg % Diff: A N	DA /ax % Dif A	AS 2: Avg %Diff A	Max % Dif	Slope	0.9997	0 Intercept	0.31710
0.0%	0.0%			Cert Date	2/14/202	²⁴ CorrCoff	1.00000
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.57	0.25	0.28	ppb		0.03
primary	2	16.47	16.17	15.91	ppb	0.71	-0.26
primary	3	35.73	35.45	35.20	ppb	-0.71	
primary	4	109.76	109.56	109.20	ppb	-0.21	
Sensor Compone	ent Audit Pressu	ire	Condi	tion 702.5 mmHg	ppo	Status pass	
Sensor Compone	ent 26.6 degree	unobstructed ru	le Condi	t <mark>ion</mark> True		Status pass	
Sensor Compone	nt Tree dewline	e >10m or below	inlet Condi	t <mark>ion</mark> True		Status pass	
Sensor Compone	ent ADT 1000-10	0000 vehicles fu	rther t Condi	tion True		Status pass	
Sensor Compone	ent ADT <1000 v	vehicles further	than 5 Condit	t <mark>ion</mark> True		Status pass	
Sensor Compone	ent Sample Trail	n	Condi	tion Good		Status pass	
Sensor Compone	Inlet Filter Co	ondition	Condi	t <mark>ion</mark> Clean		Status pass	
Sensor Compone	ent Offset		Condi	tion -0.2		Status pass	
Sensor Compone	ent Span		Condi	tion 1.003		Status pass	
Sensor Compone	ent Zero Voltage)	Condi	tion 0.0027		Status pass	
Sensor Compone	ent Fullscale Vol	ltage	Condi	tion 1.0022		Status pass	
Sensor Compone	ent Cell A Freq.		Condi	tion 57.8 kHz		Status Fail	
Sensor Compone	ent Cell A Noise		Condi	tion Not tested		Status pass	
Sensor Compone	ent Cell A Flow		Condi	tion 0.64 lpm		Status pass	
Sensor Compone	ent Cell A Press	ure	Condi	tion 669.5 mmHg		Status pass	
Sensor Compone	ent Cell A Tmp.		Condi	tion 32.1 C		Status pass	
Sensor Compone	ent Cell B Freq.		Condi	tion 43.3 kHz		Status Fail	
Sensor Compone	ent Cell B Noise		Condi	tion Not tested		Status Pass	
Sensor Compone	ent Cell B Flow		Condi	tion 0.68 lpm		Status pass	
Sensor Compone	ent Cell B Press	ure	Condi	tion 670.1 mmHg		Status pass	
Sensor Compone	ent Nafion dryer	installed	Condi	tion False		Status pass	
Sensor Compone	ent System Men	10	Condi	tion		Status pass	

Site Inventory by Site Visit

Site V	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
DEN	417-Martin	1 Valvur-10/09/2024				
1	10/9/2024	Computer	Hewlett Packard	none	ProBook	5C08296J4J
2	10/9/2024	DAS	Campbell	none	CR1000X	32017
3	10/9/2024	Elevation	Elevation	None	1	None
4	10/9/2024	Filter pack flow pump	Thomas	none	107CAB18	012100069810
5	10/9/2024	Flow Rate	Tylan	90966	FC280SAV	AW9706011
6	10/9/2024	Infrastructure	Infrastructure	none	none	none
7	10/9/2024	Met tower	Glen Martin Engineering	none	unknown	none
8	10/9/2024	MFC power supply	Tylan	90967	RO-32	FP9706004
9	10/9/2024	Ozone	Teledyne	none	T400	7457
10	10/9/2024	Ozone Standard	ThermoElectron Inc	none	49i A3NAA	1201557778
11	10/9/2024	Printer	Canon	none	PC425	unknown
12	10/9/2024	Sample Tower	Aluma Tower	none	В	AT-71102-7I-5
13	10/9/2024	Shelter Temperature	Campbell	none	103	none
14	10/9/2024	Siting Criteria	Siting Criteria	None	1	None
15	10/9/2024	Temperature	Vaisala	none	WTX536	V920369
16	10/9/2024	Zero air pump	Werther International	none	PC70/4	526281

DAS Time Max Error: 0

DAS Data Form

Mfg	Serial N	lumber Si	te T	echnician	Site Visit Date	Parameter	Use Desc.
Campbell	32017	D	EN417	Martin Valvur	10/09/2024	DAS	Primary
Das Date: Das Time: Das Day: Completing Das Day: Completing Das Day: Completing Completi	10/9 /2024 9:36:00 283 Max Diff: 0.000	Audit Date Audit Tim Audit Day High Chan Avg Diff:	e <u>10/9 /2024</u> e <u>9:36:00</u> 283 nel: Max Diff: 000 0.0000	Mfg Serial Number Tfer ID Slope Cert Date Mfg Serial Number	HY 12010039329 01322 1.0000 6/15/201 Fluke 95740243	Parameter Tfer Desc. Intercept CorrCoff Parameter Tfer Desc.	DAS Source generator (D 0.00000 1.00000 DAS DVM
				Tfer ID	01312		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.0000	V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	rial Number Tag Site Technician		Site Visit Date Parameter			Owner ID		
Tylan	AW970601	1	DEN417	Ma	artin Valvur	10/09/2024	Flow F	Rate	90966
Mfg	Tylan				Mfg	BIOS	Ι	arameter Flo	w Rate
SN/Owner ID	FP9706004	90967			Serial Number	152253	152253 Tfer Desc. BIC		
Parameter:	eter: MFC power supply				Tfer ID	15225			
-					Slope	1.(00000 Int	ercept	0.00000
					Cert Date	5/2	2/2022 Co	rrCoff	1.00000
DAS 1:		DAS 2:			Cal Factor Z	ero	0.1	31	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	% Dif	Cal Factor F	ull Scale	1.09	42	
2.21%	2.37%				Rotometer R	eading:	3.	05	
Desc.	Test type	Input l/m	Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignal	PctDifference
primary	pump off	0.000	0.000	-0.23	0.000	-0.08	l/m	l/m	
primary	leak check	0.000	0.000	-0.24	0.000	-0.09	l/m	l/m	
primary	test pt 1	2.994	2.990	2.55	0.000	2.93	l/m	l/m	-1.97%
primary	test pt 2	3.002	3.000	2.55	0.000	2.93	l/m	l/m	-2.30%
primary	test pt 3	3.001	3.000	2.55	0.000	2.93	l/m	l/m	-2.37%
Sensor Comp	<mark>onent</mark> Leak Tes	it		Conditio	n		Statu	<mark>s</mark> pass	
Sensor Comp	onent Tubing C	ondition		Conditio	n Good		Statu	s pass	
Sensor Comp	onent Filter Pos	sition		Conditio	Poor		Statu	<mark>s</mark> fail	
Sensor Comp	onent Rotomete	er Conditio	n	Conditio	Clean and dry		Statu	s pass	
Sensor Comp	onent Moisture	Present		Conditio	n No moisture pr	resent	Statu	s pass	
Sensor Comp	onent Filter Dis ^t	tance		Conditio	n 5.5 cm		Statu	s pass	
Sensor Comp	onent Filter Dep	oth		Conditio	ondition -0.5 cm			s pass	
Sensor Comp	onent Filter Azir	muth		Conditio	lition Not tested			s pass	
Sensor Component System Memo			Conditio	Condition See comments			s pass		

Ozone Data Form

Mfg	Serial Numb	er Tag Site	Те	echnician	Site Visit Date	Parameter	Owner ID
Teledyne	7457	DEN41	7 M	lartin Valvur	10/09/2024	Ozone	none
Slope: Intercept CorrCoff:	0.99164 Slo 0.24815 Into 0.99999 Cor	pe: ercept rrCoff:	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron CM23147126 01116	Inc Parameter	er ozone c. Ozone primary stan
DAS 1:	D	AS 2:		Slope	0 9926	0 Intercent	0.04790
A Avg % Diff:	A Max % Dif A	Avg %Diff A	Max % Dif	Slope	0.0020	intercept	0.04730
0.0%	0.0%			Cert Date	4/10/202	24 CorrCoff	0.99999
UseDescription	n ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	-0.11	-0.15	0.32	ppb		0.47
primary	2	15.10	15.06	14.89	ppb	0.27	-0.17
primary	3	34.89	34.86	<u> </u>	ppb	-0.37	
primary	5	115.00	115.02	114 25	ppo	-0.12	
Sensor Comp	onent Audit Press	sure	Conditi	ion 688 mmHg		Status pass	
Sensor Comp	onent 26.6 degre	e unobstructed ru	le Conditi	ion True		Status pass	
Sensor Comp	onent Tree dewlir	ne >10m or belov	v inlet Conditi	ion True		Status pass	
Sensor Comp	onent ADT 1000-	10000 vehicles fi	urther t Condit	ion True		Status pass	
Sensor Comp	onent ADT <1000) vehicles further	than 5 Condit	ion True		Status pass	
Sensor Comp	onent Sample Tra	ain	Conditi	ion Good		Status pass	
Sensor Comp	onent Inlet Filter (Condition	Conditi	ion Not tested		Status pass	
Sensor Comp	onent Offset		Conditi	ion 0.5		Status pass	
Sensor Comp	onent Span		Conditi	ion 0.996		Status pass	
Sensor Comp	onent Zero Voltaç	je	Conditi	ion N/A		Status pass	
Sensor Comp	onent Fullscale V	oltage	Conditi	ion N/A		Status pass	
Sensor Comp	onent Cell A Freq		Conditi	ion N/A		Status pass	
Sensor Comp	onent Cell A Nois	e	Conditi	ion N/A		Status pass	
Sensor Comp	onent Cell A Flow	1	Conditi	ion 0.98 lpm		Status pass	
Sensor Comp	onent Cell A Pres	sure	Conditi	ion 25.2 inches		Status pass	
Sensor Comp	onent Cell A Tmp		Conditi	ion 25.1 C		Status pass	
Sensor Comp	onent Cell B Freq	l.	Conditi	ion N/A		Status pass	
Sensor Comp	onent Cell B Nois	e	Conditi	ion N/A		Status pass	
Sensor Comp	onent Cell B Flow	1	Conditi	ion N/A		Status pass	
Sensor Comp	onent Cell B Pres	sure	Conditi	ion N/A		Status pass	
Sensor Comp	onent Nafion drye	er installed	Conditi	ion False		Status pass	
Sensor Comp	onent System Me	emo	Conditi	ion		Status pass	

Temperature Data Form

Mfg	Serial Number	Tag Site	Т	echni	ician	Site V	isit Date	Param	eter	Owner ID	
Vaisala	V920369	DEN417		Martin	Valvur	10/09	/2024	Temper	ature	none	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Ser	ial Number	32751	43	Tf	er Desc. R	D	
				Tfe	er ID	01229					
DAS 1: DAS 2:				Slo	ре		1.0002	2 Inte	rcept	-0.00505	5
Abs Avg Err	Abs Max Err Abs	Avg Err Abs	Max Err	Cer	rt Date		2/12/202	4 Cor	rCoff	1.00000	C
0.48	3 0.74										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	-1.57	-1.56		0.000		-1.	9	С	-0.34	
primary	Temp Low Range	-1.44	-1.43		0.000		-1.	8	С	-0.37	
primary	Temp Low Range	-1.07	-1.06		0.000		-1.	8	С	-0.74	
Sensor Con	nponent Shield		Condi	tion C	Clean			Status	pass		
Sensor Con	Sensor Component Blower Co				Condition N/A			Status	pass		
Sensor Component Properly Sited				Condition Properly sited				Status	pass		
Sensor Con	nponent System Memo	•	Condi	Condition See comments				Status	pass		

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	DEN417	Martin Valvur	10/09/2024	Shelter Temperatur	e none
DAS 1:	DAS 2:		Mfg	Fluke	Parameter S	helter Temperature
Abs Avg Err Abs	Max Err Abs Avg 1.03	Err Abs Max Err	Serial Number	3275143	Tfer Desc. R	TD
			Tfer ID	01229		
			Slope	1.0002	22 Intercept	-0.00505
			Cert Date	2/12/202	24 CorrCoff	1.00000

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	24.10	24.10	0.000	23.1	С	-1.03
primary	Temp Mid Range	23.48	23.48	0.000	22.7	С	-0.79
primary	Temp Mid Range	23.19	23.19	0.000	22.2	С	-0.96
Sensor Component System Memo Condition Status pass							

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	DEN417	Technician Mar	tin Valvur Site Visit Date 10/09/2024
Shelter M	lake	Shelter Model	Shelter Size
Ekto		8814	896 cuft

Sensor Component Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component Conduit	Condition	Good	Status	pass
Sensor Component Met Tower	Condition	Good	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Good	Status	pass
Sensor Component Shelter Condition	Condition	Good	Status	pass
Sensor Component Shelter Door	Condition	Good	Status	pass
Sensor Component Shelter Roof	Condition	Good	Status	pass
Sensor Component Shelter Floor	Condition	Good	Status	pass
Sensor Component Shelter walls	Condition	Good	Status	pass
Sensor Component Excessive mold present	Condition	Good	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

Field Systems Comments

1 Parameter: SiteOpsProcComm

The site operator uses one gloved hand, and the same glove, to remove and install the filter pack. Leak checks are performed when the ambient temperature is above -10 C.

2 Parameter: ShelterCleanNotes

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

3 Parameter: MetOpMaintCom

The temperature sensor has been replaced with an "all-in-one" which was audited by placing the RTD standard in proximity to the site sensor since it is not submergible.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID	DEN417		Technician	Martin Valvu	r	Site Visit I	Date 10/0	9/2024		
						S Man		Healy C-4		
Site Sponsor	(agency)	NPS				is map				
Operating Gr	roup	NPS			Maj	o Scale				
AQS #		02-068-0	003		Maj	o Date				
Meteorologic	al Type	Climatror	nics							
Air Pollutant	Analyzer	ozone, IN	IPROVE		QA	PP Latitude				
Deposition M	easurement	dry, wet			QA	PP Longitude				
Land Use		woodland	I - mixed		QA	PP Elevation	Meters			
Terrain		complex			QA	PP Declinatio	n			
Conforms to	MLM	No			QA	PP Declination	n Date			
Site Telephon	ie	(907) 683	3-9638		Aud	lit Latitude				63.7232
Site Address	1	mile 238	Parks Highway		Aud	it Longitude				-148.9676
Site Address	2				Aud	it Elevation				663
County		Denali Bo	prough		Aud	it Declination	1	19.3		
City, State		Denali Pa	ark, AK]	Present			
Zip Code		99755			Fire	Extinguisher	•			
Time Zone		Alaska Ti	me Zone		Firs	t Aid Kit				
Primary Ope	rator				Safe	ety Glasses	\checkmark			
Primary Op.	Phone #				Safe	ety Hard Hat				
Primary Op.	E-mail				Clin	nbing Belt	\checkmark			
Backup Oper	ator				Secu	irity Fence				
Backup Op.	Phone #				Secu	ire Shelter	\checkmark			
Backup Op.	E-mail				Stal	ole Entry Step	<mark>∕</mark>			
Shelter Work	ting Room 🗸	Make	Ekto		Model	8814		Shelter Size	896 cuft	
Shelter Clean		Notes	The shelter is i	n good condi	ion, clea	n, neat, and ve	ery well or	ganized.		
Site OK	\checkmark	Notes								
Driving Direc	tions town o the Pa from t	either And of Healy tu ark Headqu he headqu	horage or Fairb rn west into De uarters. The sit uarters parking l	oanks, take th nali National te is approxim lot.	e Parks I Park. Th ately 100	Highway (route e road is well r) yards up a re	3) north o marked. (sidential r	or south respectiv Continue on the pa oad on the oppos	ely. Just sou ark road a fev ite side of the	th of the v miles to e street

eld Sy	stems Data Fo				F-020 :	58-15	500-83-	-rev002	
e ID	DEN417	Technician	Martin Valvur		Site Visit Date	10/09/2024]	
Are win being in	d speed and direction fluenced by obstructio	sensors sited so ons?	as to avoid		N/A				
Are wind (i.e. wind horizont tower in	d sensors mounted so d sensors should be m cally extended boom > to the prevailing wind	as to minimize ounted atop the 2x the max dian 1)	tower effects? e tower or on a meter of the		N/A				
Are the	tower and sensors plu	ımb?		✓	N/A				
Are the avoid ra	temperature shields p diated heat sources su	oointed north or 1ch as buildings	positioned to , walls, etc?						
Are tem conditio surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped gwater should be avoi	sors sited to avo v sensors should l. Ridges, hollov ided)	id unnatural be natural vs, and areas of						
Is the so	lar radiation sensor p	lumb?		✓	N/A				
Is it site	d to avoid shading, or	any artificial o	r reflected light?		N/A				
Is the ra	in gauge plumb?			✓	N/A				
Is it site towers, o	d to avoid sheltering e etc?	effects from buil	ldings, trees,		N/A				
Is the su facing n	rface wetness sensor s orth?	sited with the g	rid surface	✓	N/A				
Is it inc	lined approximately 3	0 degrees?			N/A				
	eld Sy e ID Are win- being in Are win- (i.e. wind horizont tower in Are the avoid ra Are the avoid ra Are tem conditio surface : standing Is the so Is it sited towers, o Is the su facing n Is it inc	eld Systems Data Fore IDDEN417Are wind speed and direction being influenced by obstruction Are wind sensors mounted sood (i.e. wind sensors should be manorizontally extended boom > tower into the prevailing wind Are the tower and sensors plut Are the tower and sensors plut Are the temperature shields pravoid radiated heat sources surface and not steeply sloped standing water should be avoid Is the solar radiation sensor plut Is it sited to avoid shading, or Is it sited to avoid shading, or Is the surface wetness sensor stacing north? Is it inclined approximately 3	eld Systems Data Form e ID DEN417 Technician Are wind speed and direction sensors sited so being influenced by obstructions? Are wind sensors mounted so as to minimize (i.e. wind sensors should be mounted atop the horizontally extended boom >2x the max diant tower into the prevailing wind) Are the tower and sensors plumb? Are the temperature shields pointed north or avoid radiated heat sources such as buildings Are temperature and RH sensors sited to avoid conditions? (i.e. ground below sensors should surface and not steeply sloped. Ridges, hollow standing water should be avoided) Is the solar radiation sensor plumb? Is it sited to avoid shading, or any artificial o Is the rain gauge plumb? Is it sited to avoid sheltering effects from built towers, etc? Is the surface wetness sensor sited with the gr facing north? Is it inclined approximately 30 degrees?	eld Systems Data Form a ID DEN417 Technician Martin Valvur Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? 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) Are the tower and sensors plumb? Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? 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) Is the solar radiation sensor plumb? Is it sited to avoid shading, or any artificial or reflected light? Is the rain gauge plumb? Is it sited to avoid sheltering effects from buildings, trees, towers, etc? Is the surface wetness sensor sited with the grid surface facing north? Is it inclined approximately 30 degrees?	eld Systems Data Form E ID DEN417 Technician Martin Valvur Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? 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) Are the tower and sensors plumb? Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? 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) Is the solar radiation sensor plumb? Is it sited to avoid shading, or any artificial or reflected light? Is the rain gauge plumb? Is it sited to avoid sheltering effects from buildings, trees, towers, etc? Is the surface wetness sensor sited with the grid surface facing north? Is it inclined approximately 30 degrees?	eld Systems Data Form ID DEN417 Technician Martin Valvur Site Visit Date Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? 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) Are the tower and sensors plumb? Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? Are temperature and RH sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) Is the solar radiation sensor plumb? Is it sited to avoid shading, or any artificial or reflected light? Is the rain gauge plumb? Is it sited to avoid sheltering effects from buildings, trees, towers, etc? Is the surface wetness sensor sited with the grid surface facing north? Is it inclined approximately 30 degrees? VA	eld Systems Data Form F-020: a ID DEN417 Technician Martin Valvur Site Visit Date Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? N/A Are wind sensors mounted so as to minimize tower effects? N/A (i.e. wind sensors should be mounted atop the tower or on a borizontally extended boom >2x the max diameter of the tower and sensors plumb? N/A Are the tower and sensors plumb? N/A Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? N/A Are temperature and RH sensors sited to avoid be natural conditions? (i.e. ground below sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) N/A Is the solar radiation sensor plumb? N/A Is it sited to avoid shading, or any artificial or reflected light? N/A Is it sited to avoid sheltering effects from buildings, trees, tower, etc? N/A Is the surface wetness sensor sited with the grid surface facing north? N/A Is it inclined approximately 30 degrees? N/A	eld Systems Data Form F-02058-15 a ID DEN417 Technician Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? N/A Are wind sensors mounted so as to minimize tower effects? N/A (i.e. wind sensors mounted atop the tower or on a horizontally extended boom >2x the max diameter of the tower into the prevailing wind) N/A Are the tower and sensors plumb? N/A Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? N/A Are the 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) N/A Is the solar radiation sensor plumb? N/A Is it sited to avoid shading, or any artificial or reflected light? N/A Is it sited to avoid sheltering effects from buildings, trees, towers, etc? N/A Is the surface wetness sensor sited with the grid surface facing north? N/A Is it inclined approximately 30 degrees? N/A	eld Systems Data Form F-02058-1500-S3- 2 ID DEN417 Technician Martin Valvur Site Visit Date 10/09/2024 Are wind speed and direction sensors sited so as to avoid being influenced by obstructions? Are wind sensors mounted so as to minimize tower effects? (i.e. wind sensors should be mounted atop the tower or on a borizontally extended boom >2x the max diameter of the tower and sensors plumb? Are the tower and sensors plumb? N/A Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc? Are the temperature and RH sensors should be natural surface and not steeply sloped. Ridges, hollows, and areas of standing water should be avoided) Is the solar radiation sensor plumb? N/A Is it sited to avoid shading, or any artificial or reflected light? N/A Is it sited to avoid sheltering effects from buildings, trees, towers, etc? Is the surface wetness sensor sited with the grid surface fracing north? Is it inclined approximately 30 degrees? 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-rev002

Site	e ID	DEN417	Technician	Martin Valvur		Site Visit Date	10/09/2024	
1	Do all th condition	e meterological sensor n, and well maintained	rs appear to be ?	intact, in good	✓			
2	Are all t reportin	he meteorological sens g data?	ors operationa	l online, and				
3	Are the s	shields for the tempera	ature and RH s	ensors clean?				
4	Are the	aspirated motors work	ting?		✓	N/A		
5	Is the sol scratche	lar radiation sensor's l s?	ens clean and f	free of	✓	N/A		
6	Is the su	rface wetness sensor g	rid clean and u	indamaged?	✓	N/A		
7	Are the s condition	sensor signal and powe n, and well maintained	er cables intact ?	, in good				
8	Are the s from the	sensor signal and powe elements and well ma	er cable connec intained?	tions protected				

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 replaced with an "all-in-one" which was audited by placing the RTD standard in proximity to the site sensor since it is not submergible.

Fi	eld Sy	stems Data Fo	orm			F-02058-1500-S5-rev002					
Site	e ID	DEN417	Technician M	lartin Valvur		Site Visit Date 10/09/2024					
	<u>Siting C</u>	Criteria: Are the pollut	ant analyzers and	l deposition equ	<u>ıipn</u>	ent sited in accordance with 40 CFR 58, Appendix E					
1	Do the s unrestri	sample inlets have at le icted airflow?	east a 270 degree	arc of	✓						
2	Are the	sample inlets 3 - 15 mo	eters above the gr	ound?	✓						
3	Are the and 20 1	sample inlets > 1 mete meters from trees?	er from any majo	r obstruction,	✓						
	<u>Pollutar</u>	nt analyzers and depos	ition equipment o	operations and	mai	ntenance					
1	Do the a condition	analyzers and equipme on and well maintained	ent appear to be in ?	n good	✓						
2	Are the reportin	analyzers and moniton 1g data?	rs operational, on	-line, and	✓						
3	Describ	e ozone sample tube.				1/4 teflon by 12 meters					
4	Describ	e dry dep sample tube.				3/8 teflon by 12 meters					
5	Are in-l indicate	ine filters used in the o clocation)	ozone sample line	? (if yes	✓	At inlet only					
6	Are sam obstruct	nple lines clean, free of tions?	[°] kinks, moisture,	and							
7	Is the ze	ero air supply desiccan	t unsaturated?		✓						
8	Are the	re moisture traps in th	e sample lines?			Flow line only					
9	Is there clean?	a rotometer in the dry	v deposition filter	line, and is it	✓	Clean and dry					

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:

Fi	eld Sy	stems Data Fo	orm			F-02058-1500-S6-rev002				
Site	e ID	DEN417	Technician	Martin Valvur		Site Visi	t Date 10/09/2	024		
	<u>DAS, se</u>	nsor translators, and g	beripheral equi	pment operation	ns and	maintenai	<u>1ce</u>			
1	Do the I well ma	DAS instruments appearintained?	ar to be in good	condition and						
2	Are all t modem,	the components of the backup, etc)	DAS operation	al? (printers,						
3	Do the ຄ lightnin	nalyzer and sensor sig g protection circuitry?	gnal leads pass t	through						
4	Are the well ma	signal connections pro intained?	otected from the	e weather and						
5	Are the	signal leads connected	to the correct	DAS channel?						
6	Are the grounde	DAS, sensor translato ed?	rs, and shelter j	properly						
7	Does the	e instrument shelter ha	ave a stable pow	ver source?						
8	Is the in	strument shelter temp	erature control	led?						
9	Is the m	et tower stable and gro	ounded?			Stable		Grounded		
10	Is the sa	imple tower stable and	grounded?							
11	Tower o	comments?								

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 S	ystems Data]	For	m					F-02	2058-	-1500- S 7-rev002
Site ID	DEN417		Tech	nician	Martin Valvur		Site Visit Date	10/09/2024	1	
Docume	<u>ntation</u>									
Does the	site have the require	d ins	trume	ent and	equipment man	uals?				
		Yes	No	N/ /	4			Yes	No	N/A
Wind speed	l sensor				Data	logge	r			
Wind direc	tion sensor				Data	logge	r			
Temperatu	re sensor				Strip	o chart	t recorder			
Relative hu	midity sensor				Com	puter				
Solar radia	tion sensor		✓		Mod	lem			\checkmark	
Surface wet	tness sensor			\checkmark	Prin	ter				
Wind senso	r translator			\checkmark	Zero	air pu	ımp			
Temperatu	re translator			\checkmark	Filte	r flow	pump			
Humidity s	ensor translator			\checkmark	Surg	ge prot	ector			
Solar radia	tion translator			✓	UPS					
Tipping bu	cket rain gauge			✓	Ligh	tning	protection device			
Ozone anal	yzer				Shel	ter hea	ater			
Filter pack	flow controller				Shel	ter air	conditioner			
Filter pack	MFC power supply									
Does th	<u>e site have the requi</u>	red ar	nd mo	ost rece	nt QC documen	ts and	<u>report forms?</u>			
		Prese	ent					Curre	ent	
Station Log				Datavie	W					
SSRF										
Site Ops M	anual									
HASP										
Field Ops M	Ianual									
Calibration	Reports							\checkmark		
Ozone z/s/p	Control Charts			Datavie	W			\checkmark		
Preventive	maintenance schedul	e								
1 Is the	station log properly c	ompl	eted o	luring	every site visit?					
2 Are th current	e Site Status Report 1 t?	Form	s bein	ıg comp	oleted and					
3 Are th sample	e chain-of-custody fo e transfer to and fron	rms j n lab3	orope ?	rly used	l to document					
4 Are oz curren	one z/s/p control char t?	rts pr	operl	y comp	leted and	✓ D:	ataview			
Provide any natural or i	y additional explanat nan-made, that may	ion (p affect	ohotoş t the 1	graph o nonitor	or sketch if neces	ssary) : :	regarding conditi	ons listed	above,	or any other features,

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Site	ID	DEN417	Technician	Martin Valvur		Site Visit Date	10/09/2024		
1	Site ope Has the course?	<u>ration procedures</u> site operator attended If yes, when and who	a formal CAS	FNET training		Site operator trained	on-site by ARS em	nployee	
2	Has the training	backup operator atter course? If yes, when a	nded a formal C and who instruc	CASTNET cted?		Trained by current o	perator		
3	Is the sit schedule	e visited regularly on t ?	he required Tu	esday	✓				
4	Are the s flollowed	standard CASTNET of by the site operator?	perational proc	edures being	✓				
5	Is the sit the requi	e operator(s) knowledg ired site activities? (inc	geable of, and a cluding docume	ble to perform entation)					

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

QC Check	Performed
----------	-----------

Field Systems Data Form

Frequency

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	\checkmark	Semiannually	
Visual Inspections	\checkmark	Weekly	\checkmark
Translator Zero/Span Tests (climatronics)	\checkmark	N/A	\checkmark
Manual Rain Gauge Test	\checkmark	As needed	\checkmark
Confirm Reasonableness of Current Values	\checkmark	Weekly	\checkmark
Test Surface Wetness Response	\checkmark	N/A	\checkmark

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

QC Check Perfor	rme	ed
------------------------	-----	----

Multi-point Calibrations
Automatic Zero/Span Tests
Manual Zero/Span Tests
Automatic Precision Level Tests
Manual Precision Level Test
Analyzer Diagnostics Tests
In-line Filter Replacement (at inlet)
In-line Filter Replacement (at analyze
Sample Line Check for Dirt/Water
Zero Air Desiccant Check

Frequency	
Semiannually	
Daily	
Monthly	
Daily	
Alarm values only	
Quarterly	
N/A	
Semiannually	

- Do multi-point calibration gases go through the complete 1 sample train including all filters?
- Do automatic and manual z/s/p gasses go through the 2 complete sample train including all filters?

3	Are the automatic and manual z/s/p checks monitored and
	reported? If yes, how?

✓	Unknown	
✓		
✓	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:

Compliant

Fi	eld Sy	stems Data Form			F-02058-1500-S9-rev002				
Sit	e ID	DEN417 Teo	chnician Martin Valvur		Site Visit Dat	e 10/09/2024			
	<u>Site ope</u>	eration procedures							
1	Is the fi	lter pack being changed ever	y Tuesday as scheduled?	~	Filter changed var	ious times			
2	Are the correct	Site Status Report Forms be y?	ing completed and filed						
3	Are dat schedul	a downloads and backups be ed?	ing performed as		No longer required	1			
4	Are gen	eral observations being mad	e and recorded? How?	✓	SSRF				
5	5 Are site supplies on-hand and replenished in a timely fashion?								
6	6 Are sample flow rates recorded? How?				SSRF				
7	Are samples sent to the lab on a regular schedule in a timely fashion?								
8	Are filt and shi	ers protected from contamina pping? How?	ation during handling	✓	One set of gloves	only			
9	Are the operation	site conditions reported regu ons manager or staff?	ılarly to the field						
QC	Check P	erformed	Frequency			Compliant			
I	Multi-poi	nt MFC Calibrations	 Semiannually 			\checkmark			
1	Flow System Leak Checks Weekly					\checkmark			
Filter Pack InspectionVWeekly			✓ Weekly			\checkmark			
]	Flow Rate Setting Checks Weekly					\checkmark			
	Visual Check of Flow Rate Rotometer 🔽 Weekly		✓ Weekly						
]	In-line Filter Inspection/Replacement 🗹 As needed					\checkmark			
5	Sample L	ine Check for Dirt/Water	✓ As needed						

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 one gloved hand, and the same glove, to remove and install the filter pack. Leak checks are performed when the ambient temperature is above -10 C.

Field Systems Data Form

DEN417

F-02058-1500-S10-rev002

Site ID

Technician Martin Valvur

Site Visit Date 10/09/2024

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Hewlett Packard	ProBook	5C08296J4J	none
DAS	Campbell	CR1000X	32017	none
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CAB18	012100069810	none
Flow Rate	Tylan	FC280SAV	AW9706011	90966
Infrastructure	Infrastructure	none	none	none
Met tower	Glen Martin Engineering	unknown	none	none
MFC power supply	Tylan	RO-32	FP9706004	90967
Ozone	Teledyne	T400	7457	none
Ozone Standard	ThermoElectron Inc	49i A3NAA	1201557778	none
Printer	Canon	PC425	unknown	none
Sample Tower	Aluma Tower	В	AT-71102-7I-5	none
Shelter Temperature	Campbell	103	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	Vaisala	WTX536	V920369	none
Zero air pump	Werther International	PC70/4	526281	none

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number					
ESP.	ESP127-Eric Hebert-10/20/2024										
1	10/20/2024	Computer	Dell	07060	Inspiron 15	894MC12					
2	10/20/2024	DAS	Campbell	000422	CR3000	2523					
3	10/20/2024	Elevation	Elevation	None	1	None					
4	10/20/2024	Filter pack flow pump	Thomas	01085	107CA18	00002650587					
5	10/20/2024	Flow Rate	Арех	000916	AXMC105LPMDPCV	illegible					
6	10/20/2024	Infrastructure	Infrastructure	none	none	none					
7	10/20/2024	Modem	Digi	07131	LR54	unknown					
8	10/20/2024	Ozone	ThermoElectron Inc	000702	49i A1NAA	1030244799					
9	10/20/2024	Ozone Standard	ThermoElectron Inc	000214	49i A3NAA	0622717855					
10	10/20/2024	Sample Tower	Aluma Tower	03550	A	none					
11	10/20/2024	Shelter Temperature	Campbell	none	107-L	none					
12	10/20/2024	Siting Criteria	Siting Criteria	None	1	None					
13	10/20/2024	Temperature	RM Young	06406	41342VC	14039					
14	10/20/2024	Zero air pump	Werther International	06906	C 70/4	000821908					

DAS Data Form

DAS Time Max Error: 0.02

Mfg	Serial Nu	mber Sit	ie .	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2523	E	SP127	Eric Hebert	10/20/2024	DAS	Primary
Das Date: Das Time: Das Day:	10/20/2024 9:30:01 294	Audit Date Audit Time Audit Day	10/20/2024 9:30:00 294	Mfg Serial Number Tfer ID	Datel 15510194 01320	Parameter Tfer Desc.	DAS Source generator (D
Avg Diff: 0.0000	Max Diff: 0.0000	Avg Diff:	Max Diff: 00 0.0000	Slope Cert Date	1.0000	0 Intercept 2 CorrCoff	0.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740135	Tfer Desc.	DVM
				Tfer ID	01311		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	24 CorrCoff	1.00000
Channel	Input D	VM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.000	0 V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	ıber Tag	Site	Тес	chnician	Site Visit D	ate Paran	neter	Owner ID
Apex	illegible		ESP127	Eri	ic Hebert	10/20/2024	Flow F	Rate	000916
			Mfg BIOS		Parameter Flo		v Rate		
					Serial Number	148613	Г	fer Desc. BIO	S 220-H
					Tfer ID	01421			
					Slope	1.0	00871 Int	ercept	0.00110
					Cert Date	2/16	/2024 Co	rrCoff	0.99999
DAS 1:		DAS 2:			Cal Factor Z	ero	0.	01	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	3 % Dif	Cal Factor F	ull Scale		1	
0.67%	0.67%				Rotometer R	eading:	1	1.5	
Desc.	Test type	Input l/n	n Input Corr_	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.01	l/m	l/m	
primary	leak check	0.000	0.000	0.00	0.000	0.01	l/m	l/m	
primary	test pt 1	1.507	1.490	1.51	0.000	1.50	l/m	l/m	0.67%
primary	test pt 2	1.508	1.490	1.51	0.000	1.50	l/m	l/m	0.67%
primary	test pt 3	1.508	1.490	1.51	0.000	1.50	l/m	l/m	0.67%
Sensor Comp	onent Leak Tes	t		Conditio	on		Statu	s pass	
Sensor Comp	onent Tubing C	ondition		Conditio	Condition Good			<mark>s</mark> pass	
Sensor Comp	onent Filter Pos	ition		Conditio	Good		Statu	<mark>s</mark> pass	
Sensor Component Rotometer Condition			Conditio	Clean and dry		Statu	<mark>s</mark> pass		
Sensor Component Moisture Present			Conditio	dition No moisture present			s pass		
Sensor Component Filter Distance			Conditio	l <mark>ition</mark> 4.5 cm			<mark>s</mark> pass		
Sensor Component Filter Depth			Conditio	3.3 cm	Statu	s pass			
Sensor Component Filter Azimuth			Conditio	n 360 deg	Statu	s pass			
Sensor Component System Memo				Conditio	on		Statu	s pass	
Ozone Data Form

Mfg		Serial Number	er Tag S	lite	Те	echnician	Site Visit Date	Parameter	Owner ID
ThermoElect	tron Inc	1030244799		ESP127	E	ric Hebert	10/20/2024	Ozone	000702
Slope: Intercept CorrCoff:	-	1.01017 Slop 1.19328 Inte 0.999999 Cor	e: rcept rCoff:	0.00	000 000 000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Paramete	er ozone c. Ozone primary stan
DAS 1.		D	AS 2.				0.0007	20 T 4 4	0.21710
A Avg % Di 0.0	iff: A N 0%	1ax % Dif A 0.0%	Avg %I	Diff A Ma	x % Dif	Slope Cert Date	2/14/202	²⁴ CorrCoff	1.00000
UseDescri	ption	ConcGroup	Tfer	Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primar	у	1	0.3	39	0.07	-0.81	ppb		-0.88
primar	у	2	15.	13	14.82	13.73	ppb	2.59	-1.09
primar	y v	4	68	97	68 72	68 14	ppo	-3.38	
primar	y J	5	112	.59	112.39	112.50	ppb	0.1	
Sensor Co	ompone	nt Audit Press	ure		Condit	ion 728.1 mmHg		Status pass	
Sensor Co	ompone	nt 26.6 degree	unobstru	ucted rule	Condit	ion True		Status pass	
Sensor Co	ompone	nt Tree dewlin	e >10m c	or below inle	t Condit	ion True		Status pass	
Sensor Co	ompone	nt ADT 1000-1	0000 vel	hicles furthe	rt Condit	ion True		Status pass	
Sensor Co	ompone	nt ADT <1000	vehicles	further than	5 Condit	ion True		Status pass	
Sensor Co	mpone	<mark>nt</mark> Sample Tra	in		Condit	ion Good		Status pass	
Sensor Co	mpone	nt Inlet Filter C	Condition		Condit	ion Dirty		Status Fail	
Sensor Co	ompone	nt Offset			Condit	ion -0.10		Status pass	
Sensor Co	ompone	<mark>nt</mark> Span			Condit	ion 1.022		Status pass	
Sensor Co	ompone	nt Zero Voltag	e		Condit	ion N/A		Status pass	
Sensor Co	ompone	nt Fullscale Vo	oltage		Condit	ion N/A		Status pass	
Sensor Co	ompone	nt Cell A Freq.			Condit	ion 94.2 kHz		Status pass	
Sensor Co	ompone	nt Cell A Noise	9		Condit	ion Not tested		Status pass	
Sensor Co	ompone	nt Cell A Flow			Condit	ion 0.70 lpm		Status pass	
Sensor Co	ompone	nt Cell A Press	sure		Condit	ion 698.5 mmHg		Status pass	
Sensor Co	ompone	nt Cell A Tmp.			Condit	ion 33.2 C		Status pass	
Sensor Co	ompone	nt Cell B Freq.			Condit	ion 96.2 kHz		Status pass	
Sensor Co	ompone	nt Cell B Noise	9		Condit	ion Not tested		Status pass	
Sensor Co	ompone	nt Cell B Flow			Condit	ion 0.70 lpm		Status pass	
Sensor Co	mpone	nt Cell B Pres	sure		Condit	ion 697.8 mmHg		Status pass	
Sensor Co	ompone	nt Nafion drye	r installeo	t	Condit	ion True		Status pass	
Sensor Co	ompone	nt System Me	no		Condit	ion		Status pass	

Temperature Data Form

Mfg	Serial Number	Tag Site	1	ſechni	ician	Site V	visit Date Parame		eter	Owner ID
RM Young	14039	ESP127		Eric H	ic Hebert 10		/2024	Temper	ature	06406
				Mf	g	Fluke		Pa	rameter Te	mperature
				Ser	rial Number	61960	02	Tf	er Desc. R	D
				Tfe	er ID	01224				
DAS 1:	DAS	S 2:		Slo	pe		1.0000	0 Inte	rcept	0.00046
Abs Avg Err Abs Max Err Abs Avg Err Abs Ma			Max Err	Err Cert Date			9/26/202	3 Cor	rCoff	1.00000
0.14	0.23									
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference
primary	Temp Low Range	0.07	0.07		0.000		0.3	3	С	0.23
primary	Temp Mid Range	28.94	28.94		0.000		29.	1	С	0.15
primary	Temp High Range	47.96	47.96	<u>,</u>	0.000		48.	0	С	0.05
Sensor Con	ponent Shield		Condi	tion N	/loderately clea	an		Status	pass	
Sensor Component Blower				tion N	I/A			Status	pass	
Sensor Component Properly Sited				Condition Properly sited				Status pass		
Sensor Com	ponent System Memo)	Condi	Condition				Status	pass	

Shelter Temperature Data For

Mfg Serial Number Tag Site		Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	ESP127	Eric Hebert	10/20/2024	Shelter Temperature	none
DAS 1: Abs Avg Err Abs 0.42	DAS 2:Max ErrAbs Avg0.44	Err Abs Max Err	Mfg Serial Number Tfer ID	Fluke 6196002 01224	Parameter Shel Tfer Desc. RTD	ter Temperature
			Slope Cert Date	9/26/202	0 Intercept 23 CorrCoff	0.00046

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	25.16	25.16	0.000	25.6	С	0.41
primary	Temp Mid Range	26.87	26.87	0.000	27.3	С	0.44
Sensor Con	nponent System Memo	1	Condition		Status	pass	

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	ESP127	Technician Eric	: Hebert	Site Visit Date	10/20/2024	
Shelter Ma	ake	Shelter Model	Shelt	er Size		
Ekto		8810	640 c	uft		
				5 X 5 2 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y 1 Y		

Sensor Component Sample Tower Type	Condition	Туре А	Status	pass
Sensor Component Conduit	Condition	N/A	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Poor	Status	Fail
Sensor Component Shelter Condition	Condition	Good	Status	pass
Sensor Component Shelter Door	Condition	Fair	Status	pass
Sensor Component Shelter Roof	Condition	Good	Status	pass
Sensor Component Shelter Floor	Condition	Good	Status	pass
Sensor Component Shelter walls	Condition	Good	Status	pass
Sensor Component Excessive mold present	Condition	Good	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

F-02058-1500-S1-rev002

Site ID ESP127	Technician Eric Hebert	Site Visit Date 10/20)/2024						
S'(+ S	EDA	USGS Man	Silver Point						
Site Sponsor (agency)	EPA								
Operating Group	private, TN DEC	Map Scale							
AQS #	47-041-9991	Map Date							
Meteorological Type	Climatronics								
Air Pollutant Analyzer	Ozone	QAPP Latitude							
Deposition Measurement	dry	QAPP Longitude							
Land Use	woodland - mixed	QAPP Elevation Meters							
Terrain	rolling - complex	QAPP Declination							
Conforms to MLM	No	QAPP Declination Date							
Site Telephone	(615) 597-6556	Audit Latitude	36.038831						
Site Address 1	Craft Center Rd.	Audit Longitude	-85.732965						
Site Address 2	Hurricane Bridge	Audit Elevation	302						
County	DeKalb	Audit Declination	-3.5						
City, State	Smithville, TN	Present							
Zip Code	37166	Fire Extinguisher 🗹	New in 2015						
Time Zone	Central	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 Steps ✓							
Shelter Working Room	Make Ekto M	odel 8810	Shelter Size 640 cuft						
Shelter Clean	Notes The shelter is in generally good	d condition, however there is st	ill some rot in the walls.						
Site OK	Notes								
Driving Directions From interstate 40 take exit 273, south on 56. Immediately after crossing the Hurricane Bridge over the Caney Fork River, turn left at the sign for Tennessee Tech and the Appalachian Center for Crafts. Continue about 1 mile to the locked (518) vellow gate on the right. The site is up the hill through the gate.									

Fie	eld Sy	stems Data Fo	orm				F-02058	-15	500-S3-rev00	2
Site	e ID	ESP127	Technician	Eric Hebert		Site Visit Date	10/20/2024]	
1	Are wind being inf	l speed and direction luenced by obstructio	sensors sited so ns?	as to avoid	✓	N/A				
2	Are wind (i.e. wind horizont tower in	l sensors mounted so l sensors should be mo ally extended boom > to the prevailing wind	as to minimize ounted atop the 2x the max diar)	tower effects? e tower or on a meter of the		N/A				
3	Are the	tower and sensors plu	mb?		✓	N/A				٦
4	Are the avoid ra	temperature shields p diated heat sources su	ointed north or ch as buildings	positioned to , walls, etc?	✓					
5	Are temp condition surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped water should be avoid	ors sited to avo sensors should . Ridges, hollow ded)	id unnatural be natural vs, and areas of						
6	Is the so	lar radiation sensor p	lumb?		✓	N/A				
7	Is it sited	l to avoid shading, or	any artificial o	r reflected light?	✓	N/A				
8	Is the ra	in gauge plumb?			✓	N/A				
9	Is it sited towers, e	l to avoid sheltering e etc?	ffects from buil	dings, trees,	✓	N/A				
10	Is the su facing no	rface wetness sensor s orth?	ited with the gr	rid surface	✓	N/A				
11	Is it incl	ined approximately 3	0 degrees?		✓	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:

F-02058-1500-S4-rev002

Sit	Site ID ESP127 Technician Eric Hebe		Eric Hebert		Site Visit Date	10/20/2024		
	D					Tanananatura antu		
1	Do all th condition	e meterological sensol n, and well maintained	rs appear to be 1?	intact, in good	•	remperature only		
2	Are all the second seco	he meteorological sens g data?	sors operationa	l online, and	✓	Temperature only		
3	Are the s	shields for the tempera	ature and RH s	ensors clean?	✓	Moderately clean		
4	4 Are the aspirated motors working?					N/A		
5	Is the sol scratche	lar radiation sensor's s?	lens clean and f	free of	✓	N/A		
6	Is the su	rface wetness sensor g	rid clean and u	indamaged?	✓	N/A		
7	Are the s condition	sensor signal and powe	er cables intact 1?	, in good	✓			
8	Are the s from the	sensor signal and powe e elements and well ma	er cable connec aintained?	tions protected				

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:

Fi	eld Sy	stems Data Fo	orm				F-02058	8-1500-85-rev002
Sit	e ID	ESP127	Technician	Eric Hebert		Site Visit Date	10/20/2024	
	<u>Siting (</u>	Criteria: Are the pollut	ant analyzers an	d deposition equ	uipn	nent sited in accord	dance with 40 C	FR 58, Appendix E
1	Do the sunrestr	sample inlets have at le icted airflow?	ast a 270 degree	arc of				
2	Are the	sample inlets 3 - 15 me	eters above the g	round?	✓			
3	Are the and 20	sample inlets > 1 mete meters from trees?	r from any majo	or obstruction,				
	<u>Polluta</u>	nt analyzers and depos	ition equipment	operations and	mai	<u>ntenance</u>		
1	Do the a condition	analyzers and equipme on and well maintained	nt appear to be : ?	in good	✓			
2	Are the reportion	analyzers and monitor ng data?	s operational, o	n-line, and	✓			
3	Describ	e ozone sample tube.				1/4 teflon by 12 me	ters	
4	Describ	e dry dep sample tube.				3/8 teflon by 12 me	ters	
5	Are in-l indicate	line filters used in the o e location)	zone sample line	e? (if yes		At inlet only		
6	Are san obstruc	nple lines clean, free of tions?	kinks, moisture	, and				
7	Is the zo	ero air supply desiccan	t unsaturated?		✓			
8	Are the	re moisture traps in the	e sample lines?			both ozone and flov	N	
9	Is there clean?	a rotometer in the dry	deposition filter	r line, and is it		Clean and dry		

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:

There is a lawn mower and gasoline stored in the shelter with noticeable odor of gasoline vapor.

Fi	eld Sy	stems Data Fo	orm				F-0 2	2058-15	00-S6-rev002
Site	e ID	ESP127	Technician	Eric Hebert		Site Visit Dat	e 10/20/2024	4	
	<u>DAS, se</u>	nsor translators, and g	oeripheral equi	pment operation	<u>ns ar</u>	<u>id maintenance</u>			
1	Do the l well ma	DAS instruments appearintained?	ar to be in good	l condition and					
2	Are all t modem,	he components of the backup, etc)	DAS operation	al? (printers,	✓				
3	Do the a lightnin	nalyzer and sensor sig g protection circuitry?	gnal leads pass	through	✓	Met sensors only			
4	Are the well ma	signal connections pro intained?	tected from the	e weather and					
5	Are the	signal leads connected	to the correct	DAS channel?	✓				
6	Are the grounde	DAS, sensor translato d?	rs, and shelter	properly	✓				
7	Does the	e instrument shelter ha	we a stable pov	ver source?	✓				
8	Is the in	strument shelter temp	erature contro	lled?					
9	Is the m	et tower stable and gr	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	grounded?						
11	Tower o	omments?				sample tower not	grounded		

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 sample tower is the original design, Type A tower, and is now very difficult to close due to lack of clearance between the locking tabs. There is also a dimple at the hinge point that is likely to worsen and eventually break through the tower legs. The tower should be replaced in the near future.

Field Sy	stems Data I	or	m				F-02	058-1:	500-S7-rev002
Site ID	ESP127		Technician	Eric Hebert		Site Visit Date	10/20/2024		
Document	tation								
Does the s	ite have the require	l inct	rument an	lequinment	manuals?				
Does the s	<u>ne nave the require</u>	<u>a mst</u> 7ee	No N		<u>manuais.</u>		Ves	No	N/A
Wind speed s	sensor				Data logger				
Wind directi	on sensor			. 1	Data logger				\checkmark
Temperature	e sensor]	Strip chart	recorder			
Relative hum	nidity sensor			. (Computer				
Solar radiati	on sensor			· .	Modem			\checkmark	
Surface wetn	less sensor				Printer				
Wind sensor	translator				Zero air pu	mp		\checkmark	
Temperature	e translator				Filter flow j	oump		\checkmark	
Humidity ser	isor translator				Surge prote	ctor		\checkmark	
Solar radiati	on translator			· 1	UPS				
Tipping buck	ket rain gauge			. 1	L <mark>ightning</mark> p	rotection device		\checkmark	
Ozone analyz	zer] §	Shelter heat	ter		\checkmark	
Filter pack fl	low controller	✓] §	Shelter air o	conditioner	\checkmark		
Filter pack M	IFC power supply			•					
Does the	site have the requir	ed an	nd most rec	ent OC docui	ments and 1	report forms?			
		Prese	nt				Curre	nt	
Station Log		V							
SSRF									
Site Ops Mai	nual			18					
HASP			- Oct 20	18					
Field Ops Ma	anual								
Calibration I	Reports)24					
Ozone z/s/p (Control Charts								
Preventive m	aintenance schedule	•							
1 Is the st	ation log properly co	omple	eted during	every site vi	sit? 🔽 Mi	nimal information			
2 Are the current	Site Status Report F ?	form	s being com	pleted and					
3 Are the sample	chain-of-custody for transfer to and from	rms p lab?	properly use	ed to docume	nt 🗹				
4 Are ozo current	ne z/s/p control char ?	rts pr	operly com	pleted and	Co	ntrol charts not us	sed		
Provide any natural or m	additional explanati an-made, that may a	on (p affect	hotograph t the monito	or sketch if n ring parame	ecessary) r	egarding conditi	ions listed a	bove, or a	any other features,

F-02058-1500-S8-rev002

Site	ID	ESP127	Technician	Eric Hebert	Site Visit Date	10/20/2024	
	Site ope	ration procedures					
1	Has the course?	site operator attended If yes, when and who	a formal CAS instructed?	TNET training			
2	Has the training	backup operator atter course? If yes, when a	nded a formal (and who instru	CASTNET cted?			
3	Is the sit schedule	e visited regularly on t ?	the required T u	iesday			
4	Are the s flollowed	standard CASTNET o I by the site operator?	perational pro	cedures being			
5	Is the sit the requ	e operator(s) knowled ired site activities? (in	geable of, and a cluding docum	able to perform entation)			
	une requ	in ou site activities. (in	citating docum				

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

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	\checkmark	N/A	\checkmark
Visual Inspections	✓	N/A	\checkmark
Translator Zero/Span Tests (climatronics)		N/A	\checkmark
Manual Rain Gauge Test	✓	N/A	\checkmark
Confirm Reasonableness of Current Values	✓	N/A	\checkmark
Test Surface Wetness Response	\checkmark	N/A	\checkmark

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

00	Check	Performed
VU.	CHECK	1 el loi meu

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests **Automatic Precision Level Tests** Manual Precision Level Test **Analyzer Diagnostics Tests In-line Filter Replacement (at inlet)** In-line Filter Replacement (at analyze Sample Line Check for Dirt/Water Zero Air Desiccant Check

Frequency	Compliant
Semiannually	
Daily	
As needed	\checkmark
Daily	
As needed	\checkmark
Weekly	\checkmark
Every 2 weeks	\checkmark
N/A	\checkmark
Weekly	\checkmark
Weekly	

- 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?	

	Unknown	
✓		
✓	Logbook, call-in	

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:

Although the SSRF indicates that the ozone inlet filter is replaced every week, it was confirmed with the site operator that it is changed on the regular every two week schedule, and the SSRF entry is in error.

Site	e ID	ESP127	Technie	cian	Eric Hebert		Site Visit Date	10/20/2024	
	<u>Site oper</u>	ration procedures							
1	Is the fil	ter pack being change	d every Tu	iesd	ay as scheduled?				
2	Are the scorrectly	Site Status Report For y?	rms being	com	pleted and filed	✓			
3	Are data schedule	a downloads and back ed?	ups being	perf	ormed as		No longer required		
4	Are gene	eral observations bein	g made an	d re	corded? How?	✓	SSRF, call-in		
5	Are site fashion?	supplies on-hand and	replenishe	ed in	a timely				
6	Are sample flow rates recorded? How?			✓	SSRF, logbook, call-in				
7	Are samples sent to the lab on a regular schedule in a timely fashion?			✓					
8	Are filte and ship	rs protected from con pping? How?	taminatio	ı du	ring handling	✓	Clean gloves on and	l off	
9	Are the soperatio	site conditions reporte ns manager or staff?	ed regularl	y to	the field				
QC	Check Pe	erformed		Fre	quency			Compliant	
N	Aulti-poin	nt MFC Calibrations	\checkmark	Sen	niannually				
F	Flow Syste	em Leak Checks	\checkmark	Wee	ekly				
F	Filter Pack	k Inspection							
F	Flow Rate	Setting Checks	\checkmark	Wee	ekly				
V	visual Cho	eck of Flow Rate Roto	meter 🗹	Wee	ekly			\checkmark	
Ι	n-line Filt	ter Inspection/Replace	ement 🗹	Sen	niannually			\checkmark	
S	Sample Li	ne Check for Dirt/Wa	ter 🗸	Wee	ekly				
	• •		(1)	. 1	1 (1 * 6			1. 4 1 1	(T C (

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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
I IVIU	Systems	Data	

ESP127

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Site I	D
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Technician Eric Hebert

Site Visit Date 10/20/2024

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	Inspiron 15	894MC12	07060
DAS	Campbell	CR3000	2523	000422
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CA18	00002650587	01085
Flow Rate	Apex	AXMC105LPMDPC	illegible	000916
Infrastructure	Infrastructure	none	none	none
Modem	Digi	LR54	unknown	07131
Ozone	ThermoElectron Inc	49i A1NAA	1030244799	000702
Ozone Standard	ThermoElectron Inc	49i A3NAA	0622717855	000214
Sample Tower	Aluma Tower	A	none	03550
Shelter Temperature	Campbell	107-L	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342VC	14039	06406
Zero air pump	Werther International	C 70/4	000821908	06906

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
DIN431-Martin Valvur-10/31/2024						
1	10/31/2024	Computer	panasonic	none	CF-53	7CT5A99917
2	10/31/2024	DAS	Environmental Sys Corp	None	8864	C2603
3	10/31/2024	elevation	Elevation	none	none	none
4	10/31/2024	Filter pack flow pump	Thomas	none	107CA18	0191007241
5	10/31/2024	flow rate	Mykrolis	none	FC280SAV-4S	AW902153
6	10/31/2024	Infrastructure	Infrastructure	none	none	none
7	10/31/2024	MFC power supply	Tylan	none	RO-32	FP9706002
8	10/31/2024	Modem	Sierra wireless	none	GX450	LA82610159001005
9	10/31/2024	Ozone	ThermoElectron Inc	none	49i A3NAA	1023943903
10	10/31/2024	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	CM08460050
11	10/31/2024	Shelter Temperature	ARS	none	unknown	none
12	10/31/2024	siting criteria	Siting Criteria	none	none	None
13	10/31/2024	Temperature	Vaisala	none	WTX536	V4920651
14	10/31/2024	Zero air pump	Werther International	none	PC70/4	531395

DAS Data Form

DAS Time Max Error: 0.3

Mfg	Serial N	Number Sit	e 7	Fechnician	Site Visit Date	Parameter	Use Desc.
Environmental	Sys C2603	DI	N431	Martin Valvur	10/31/2024	DAS	Primary
Das Date: Das Time:	10/31/2024 8:50:18	Audit Date Audit Time	10/31/2024 8:50:00	Mfg	HY	Parameter	DAS
Das Day:	305	Audit Day	305	Serial Number Tfer ID	01322	Tfer Desc.	Source generator (D
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:	Slope	1.0000	0 Intercept	0.00000
0.0000				Cert Date	6/15/201	4 CorrCoff	1.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740243	Tfer Desc.	DVM
				Tfer ID	01312		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	24 CorrCoff	1.00000
Channel	Input	DVM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.0000	0 V	V	0.0000	

Ozone Data Form

Mfg	Serial Numbe	er Ta Site	Те	echnician	Site Visit Date	Parameter	Owner ID
ThermoElectron Ir	nc 1023943903	DIN431	M	artin Valvur	10/31/2024	Ozone	none
Slope: 0.99373 Slope: Intercept Intercept -0.60862 Intercept Intercept CorrCoff 1.00000 CorrCoff Intercept DAS 1: DAS 2: DAS 2: A Avg % Diff: A Max % Di A Avg %D 0.0% 0.0% 0.0% Intercept Intercept Intercept		e: rcept rCoff AS 2: Avg %Diff A	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID Slope Cert Date	ThermoElectron CM23147126 01116 0.9926 4/10/202	Inc Paramet Tfer Des 0 Intercept 24 CorrCoff	er ozone c. Ozone primary stan 0.04790 0.99999
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.35	0.30	-0.31	ppb		-0.61
primary	2	14.25	14.21	13.56	ppb		-0.65
primary	3	34.32	34.29	33.41	ppb	-2.6	
primary	4	64.60	64.59	63.57	ppb	-1.59	
primary	5	114.19	114.21	112.90	ppb	-1.15	
Sensor Compo	nent Audit Press	ure	Conditi	on 635 mmHg		Status pass	
Sensor Compo	nent 26.6 degree	e unobstructed ru	le Conditi	on True		Status pass	
Sensor Compo	nent Tree dewlin	e >10m or below	v inlet Conditi	on True		Status pass	
Sensor Compo	nent ADT 1000-1	10000 vehicles fu	urther Conditi	on True		Status pass	
Sensor Compo	nent ADT <1000	vehicles further	than Conditi	on True		Status pass	
Sensor Compo	nent Sample Tra	in	Conditi	on Good		Status pass	
Sensor Compo	nent Inlet Filter C	Condition	Conditi	on Clean		Status pass	
Sensor Compo	nent Offset		Conditi	on 0.000		Status pass	
Sensor Compo	nent Span		Conditi	on 1.020		Status pass	
Sensor Compo	nent Zero Voltag	e	Conditi	on N/A		Status pass	
Sensor Compo	nent Fullscale Vo	oltage	Conditi	on N/A		Status pass	
Sensor Compo	nent Cell A Freq		Conditi	<mark>on</mark> 107.5 kHz		Status pass	
Sensor Compo	nent Cell A Noise	9	Conditi	on 0.6 ppb		Status pass	
Sensor Compo	nent Cell A Flow		Conditi	on 0.60 lpm		Status pass	
Sensor Compo	nent Cell A Pres	sure	Conditi	on 635.4 mmHg		Status pass	
Sensor Compo	nent Cell A Tmp.		Conditi	on 30.7 C		Status pass	
Sensor Compo	nent Cell B Freq		Conditi	on 117.1 kHz		Status pass	
Sensor Compo	nent Cell B Noise	e	Conditi	on 0.8 ppb		Status pass	
Sensor Compo	nent Cell B Flow		Conditi	on 0.54 lpm		Status pass	
Sensor Compo	nent Cell B Pres	sure	Conditi	on 634.8 mmHg		Status pass	
Sensor Compo	nent Nafion drye	r installed	Conditi	on False		Status pass	
Sensor Compo	nent System Me	mo	Conditi	on		Status pass	

Temperature Data Form

Mfg	Serial Number	Tag Site	1	Technician		Site V	isit Date	Param	eter	Owner ID	
Vaisala	V4920651	DIN431		Martin	Valvur	10/31	/2024	Temper	ature	none	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Ser	rial Number	32751	43	Tf	er Desc. R	ſD	
				Tfe	er ID	01229	1				
DAS 1: DAS 2:				Slope		1.00022 Intercept		rcept	-0.00505		
Abs Avg Err Abs Max Err Abs Avg Err Abs Ma			Max Err	x Err Cert Date			2/12/202	4 Cor	rCoff	1.00000	
0.83	3 1.20										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	5.90	5.90		0.0000)	4.7	7	С	-1.2	
primary	Temp Low Range	5.70	5.70		0.0000)	4.8	3	С	-0.9	
primary	Temp Low Range	8.70	8.70		0.0000)	8.3	3	С	-0.4	
Sensor Con	ponent Shield		Condi	tion C	Clean			Status	pass		
Sensor Component Blower			Condi	Condition N/A				Status	pass		
Sensor Component Properly Sited			Condi	Condition Properly sited				Status	s pass		
Sensor Con	ponent System Memory)	Condi	Condition See comments				Status	s pass		

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
ARS	none	DIN431	Martin Valvur	10/31/2024	Shelter Temperatu	re none
DAS 1:	DAS 2:		Mfg	Fluke	Parameter S	helter Temperature
Abs Avg Err Abs	Max Err Abs Avg 1.08	Err Abs Max Err	Serial Number	3275143	Tfer Desc.	TD
			Tfer ID	01229		
			Slope	1.0002	22 Intercept	-0.00505
			Cert Date	2/12/202	24 CorrCoff	1.00000

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference	
primary	Temp Mid Range	19.40	19.40	0.000	20.5	С	1.08	
primary	Temp Mid Range	20.94	20.94	0.000	21.0	С	0.09	
primary	Temp Mid Range	19.18	19.18	0.000	19.2	С	0.02	
Sensor Con	nponent System Memo	•	Condition	Status pass				

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition 60 m	Status Fail
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	DIN431	Technician N	Martin Valvur	Site Visit Date	10/31/2024	
Shelter M	lake	Shelter Model	She	lter Size		
American	Portable Buildings	A0810	640	cuft		
				2013/2014/04/2016/04/2014/2014/2014/2014/2014/2014/2014/2		

Sensor Component Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component Conduit	Condition	Good	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Good	Status	pass
Sensor Component Shelter Condition	Condition	Good	Status	pass
Sensor Component Shelter Door	Condition	Good	Status	pass
Sensor Component Shelter Roof	Condition	Good	Status	pass
Sensor Component Shelter Floor	Condition	Good	Status	pass
Sensor Component Shelter walls	Condition	Good	Status	pass
Sensor Component Excessive mold present	Condition	Good	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

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Site ID DIN431	Technician Martin Valvur	Site Visit Date 10/3	31/2024				
			E				
Site Sponsor (agency)	NPS	USGS Map	Dinosaur Quarry				
Operating Group	NPS	Map Scale					
AQS #	49-047-1002	Map Date					
Meteorological Type	R.M. Young						
Air Pollutant Analyzer	Ozone	QAPP Latitude	40.4373				
Deposition Measurement	dry	QAPP Longitude	-109.3046				
Land Use	Desert	QAPP Elevation Meters	1463				
Terrain	complex	QAPP Declination	10.7				
Conforms to MLM	Marginally	QAPP Declination Date					
Site Telephone		Audit Latitude	40.4373				
Site Address 1		Audit Longitude	-109.3046				
Site Address 2		Audit Elevation	1463				
County	Uintah	Audit Declination	10.7				
City, State	Jensen, UT	Present					
Zip Code	84035	Fire Extinguisher	Not present				
Time Zone	Mountain	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 Steps ✓					
Shelter Working Room	Make American Portable Bu Me	odel A0810	Shelter Size 640 cuft				
Shelter Clean	Notes The shelter is in good condition, clean, and well organized.						
Site OK	Notes						
Driving Directions Go ea	st on route 40 from Vernal, UT. Turn nort	h on route 149 and follow sigr	s for Dinosaur National Monument.				

Fie	eld Sy	stems Data Fo	orm				F-02058	8-15	500-S3-1	rev002
Site	e ID	DIN431	Technician	Martin Valvur		Site Visit Date	10/31/2024]	
1	Are wind being in	d speed and direction fluenced by obstruction	sensors sited so ons?	as to avoid		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)						N/A				
3	Are the	tower and sensors plu	mb?		✓	N/A				
4	Are the avoid ra	temperature shields p diated heat sources su	ointed north or Ich as buildings	positioned to , walls, etc?						
5	Are tem conditio surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped water should be avoi	sors sited to avo y sensors should l. Ridges, hollov ded)	id unnatural be natural vs, and areas of						
6	Is the so	lar radiation sensor p	lumb?		✓	N/A				
7	Is it sited	l to avoid shading, or	any artificial o	r reflected light?		N/A				
8	Is the ra	in gauge plumb?				N/A				
9	Is it sited towers, o	l to avoid sheltering e etc?	ffects from buil	ldings, trees,	✓	N/A				
10	Is the su facing n	rface wetness sensor s orth?	sited with the g	rid surface	✓	N/A				
11	Is it incl	ined approximately 3	0 degrees?		✓	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:

F-02058-1500-S4-rev002

Site	e ID	DIN431	Technician	Martin Valvur		Site Visit Date	10/31/2024	
1	Do all th condition	e meterological sensor n, and well maintained	rs appear to be l?	intact, in good				
2	Are all t reportin	he meteorological sens g data?	ors operationa	l online, and	✓			
3	3 Are the shields for the temperature and RH sensors clean?							
4	4 Are the aspirated motors working?				✓			
5	5 Is the solar radiation sensor's lens clean and free of scratches?				✓	N/A		
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 s from the	sensor signal and powe e elements and well ma	er cable connec intained?	tions protected				

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 replaced with an "all-in-one" sensor a the top of the sample tower. The sensor is not submergible and therefore it was tested by placing the standard RTD in proximity with the site sensor.

Fi	eld Sy	stems Data Fo	orm				F-02058-	1500-S5-rev002
Site	e ID	DIN431	Technician	Martin Valvur		Site Visit Date 10/	31/2024	
	Siting C	Criteria: Are the pollut	ant analyzers an	<u>d deposition eq</u>	<u>uipn</u>	<u>ient sited in accordan</u>	ice with 40 CFF	<u>R 58, Appendix E</u>
1	Do the sunrestri	sample inlets have at le icted airflow?	east a 270 degree	arc of				
2	Are the	sample inlets 3 - 15 m	eters above the g	ground?	✓			
3	Are the sample inlets > 1 meter from any major obstruction and 20 meters from trees?							
	<u>Polluta</u>	nt analyzers and depos	sition equipment	operations and	mai	<u>ntenance</u>		
1	Do the a condition	analyzers and equipme on and well maintained	ent appear to be l?	in good	✓			
2	Are the reportin	analyzers and monitor 1g data?	rs operational, o	n-line, and	✓			
3	Describ	e ozone sample tube.				1/4 teflon by 12 meters	;	
4	Describ	e dry dep sample tube				3/8 teflon by 12 meters	;	
5	Are in-l indicate	ine filters used in the o location)	ozone sample line	e? (if yes		At inlet only		
6	Are san obstruc	nple lines clean, free of tions?	čkinks, moisture	, and				
7	Is the zo	ero air supply desiccan	at unsaturated?		✓			
8	Are the	re moisture traps in th	e sample lines?			No		
9	Is there clean?	a rotometer in the dry	y deposition filter	r line, and is it	✓	Clean and dry		

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-rev002			
Site	e ID	DIN431	Technician	Martin Valvur		Site Visit Date	10/31/2024	4	
	DAS, se	nsor translators, and g	peripheral equi	pment operatior	<u>15 ai</u>	<u>nd maintenance</u>			
1	Do the I well mai	OAS instruments appe ntained?	ar to be in good	l condition and					
2	Are all t modem,	he components of the backup, etc)	DAS operation	al? (printers,	✓				
3	Do the a lightning	nalyzer and sensor sig g protection circuitry?	gnal leads pass (through	✓	Met sensors only			
4	Are the well mai	signal connections pro ntained?	otected from the	e weather and	✓				
5	Are the	signal leads connected	to the correct	DAS channel?	✓				
6	Are the grounde	DAS, sensor translato d?	rs, and shelter	properly	✓				
7	Does the	e instrument shelter ha	ave a stable pow	ver source?	✓				
8	Is the in	strument shelter temp	oerature control	lled?					
9	Is the m	et tower stable and gr	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	l grounded?						
11	Tower c	omments?				One tower only		Ŀ	

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:

All sensors, filter pack, and ozone sample inlet are on a single, crank-down tower.

Field	Systems Data	Foi	rm				F-02	058-	-1500-S7-rev002
Site ID	DIN431		Tech	nician	Martin Valvur	Site Visit Date	10/31/2024		
Docun	nentation								
Does t	he site have the requir	ed in	strum	ent and	equipment manuals	\$?			
20050	<u></u>	Yes	No	N/2	A	<u></u>	Yes	No	N/A
Wind spe	ed sensor		\checkmark		Data log	ger			
Wind dir	ection sensor		✓		Data log	ger			
Tempera	ture sensor		✓		Strip cha	art recorder			
Relative	humidity sensor		✓		Comput	er		\checkmark	
Solar rad	liation sensor			\checkmark	Modem			\checkmark	
Surface w	vetness sensor			\checkmark	Printer				\checkmark
Wind sen	sor translator			\checkmark	Zero air	pump		\checkmark	
Tempera	ture translator			\checkmark	Filter flo	ow pump		\checkmark	
Humidity	sensor translator			\checkmark	Surge pr	otector			\checkmark
Solar rad	liation translator			\checkmark	UPS				\checkmark
Tipping b	oucket rain gauge			\checkmark	Lightnin	g protection device	e 🗌		\checkmark
Ozone an	alyzer		\checkmark		Shelter l	ieater		\checkmark	
Filter pac	ck flow controller		\checkmark		Shelter a	ir conditioner	\checkmark		
Filter pac	ck MFC power supply		\checkmark]				
Does	the site have the requi	ired a	nd mo	ost rece	nt QC documents a	nd report forms?			
		Pres	ent				Curre	nt	
Station L	og		✓	Datavie	ew.				
SSRF			✓				\checkmark		
Site Ops	Manual			Not pre	sent				
HASP				Not pre	sent				
Field Ops	s Manual			Not pre	sent				
Calibrati	on Reports		✓				\checkmark		
Ozone z/s	s/p Control Charts								
Preventiv	e maintenance schedu	le							
1 Is th	e station log properly	comp	leted	during	every site visit? 🔽				
2 Are curr	2 Are the Site Status Report Forms being completed and current?								
3 Are sam	the chain-of-custody f ple transfer to and fro	orms m lab	prope ?	rly used	d to document 🗹				
4 Are curr	ozone z/s/p control cha rent?	arts p	roper	ly comp	oleted and	Control charts not u	ised		
Provide a natural o	ny additional explana r man-made, that may	tion (/ affeo	photo at the	graph o monitor	or sketch if necessary	y) regarding condit	tions listed a	above,	or any other features,
					8 F				

There are no hardcopies of manuals and operating procedures on-site. All documentation is available via the internet. Status of updates to documentation is evaluated during TSA by EPA.

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Site	ID	DIN431	Technician	Martin Valvur	Site Visit Date	10/31/2024		
1	<u>Site ope</u> Has the course?	<u>ration procedures</u> site operator attendec If yes, when and who	l a formal CAS instructed?	TNET training				
2	Has the training	backup operator atte course? If yes, when	nded a formal (and who instru	CASTNET cted?				
3	Is the sit schedule	e visited regularly on ?	the required T	ıesday				
4	Are the s flollowed	standard CASTNET o I by the site operator?	perational pro	cedures being				
5	Is the sit the requ	e operator(s) knowled ired site activities? (in	geable of, and a	able to perform entation)				
	Are regular operational QA/QC checks performed on meteorological instruments?							
QC	Check P	erformed		Frequency		Compliant		

QC Check Performed		Frequency	Con
Multipoint Calibrations	\checkmark	N/A	\checkmark
Visual Inspections	\checkmark	N/A	\checkmark
Translator Zero/Span Tests (climatronics)	\checkmark	N/A	\checkmark
Manual Rain Gauge Test	\checkmark	N/A	\checkmark
Confirm Reasonableness of Current Values	\checkmark	N/A	\checkmark
Test Surface Wetness Response	\checkmark	N/A	\checkmark

Frequency

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

QC	Check	Performed
----	-------	-----------

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests **Automatic Precision Level Tests** Manual Precision Level Test **Analyzer Diagnostics Tests In-line Filter Replacement (at inlet) In-line Filter Replacement (at analyze** Sample Line Check for Dirt/Water Zero Air Desiccant Check

riequency	CO
Semiannually	
Daily	
Monthly	
Daily	
Not performed	
Not performed	
Monthly	
N/A	
Not performed	
Semiannually	\checkmark

- 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	ŀ
	reported? If yes, how?	

	Unknown	
✓	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 site operator is not responsible for manual zero/span/precision checks, or multipoint calibrations, of the ozone analyzer.

Compliant

Field Systems Data Form						F-02058-1500-S9-rev002			
Sit	e ID	DIN431 Te	chnician	Martin Valvur		Site Visit Date	10/31/2024		
	<u>Site ope</u>	ration procedures							
1	Is the fi	lter pack being changed even	ry Tuesda	y as scheduled?		Filter changed vario	ous times		
2	Are the correctl	Site Status Report Forms bo y?	eing comp	oleted and filed	✓				
3	Are data downloads and backups being performed as scheduled?					No longer required			
4	Are gen	eral observations being mad	le and rec	corded? How?	✓	SSRF			
5	Are site fashion?	supplies on-hand and reple	nished in	a timely					
6	Are sam	pple flow rates recorded? Ho	ow?		✓	SSRF			
7	Are sam fashion?	nples sent to the lab on a reg	ular sche	dule in a timely	✓				
8	Are filte and ship	ers protected from contamin oping? How?	ation dur	ing handling	✓	Clean gloves on and off			
9	Are the operation	site conditions reported reg ons manager or staff?	ularly to	the field					
QC	Check P	erformed	Free	luency			Compliant		
N	Aulti-poir	nt MFC Calibrations	✓ Sem	iannually			\checkmark		
ŀ	Flow Syste	em Leak Checks	✓ Wee	kly			\checkmark		
I	ilter Pac	k Inspection							
I	low Rate	Setting Checks	🗹 Wee	kly			\checkmark		
V	isual Ch	eck of Flow Rate Rotometer	Vee Wee	kly			\checkmark		
I	n-line Fil	ter Inspection/Replacement	✓ Sem	iannually			\checkmark		
5	ample Li	ine Check for Dirt/Water	Not Not	performed					

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:

DIN431

F-02058-1500-S10-rev002

Technician Martin Valvur

Site Visit Date 10/31/2024

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	panasonic	CF-53	7CT5A99917	none
DAS	Environmental Sys Corp	8864	C2603	None
elevation	Elevation	none	none	none
Filter pack flow pump	Thomas	107CA18	0191007241	none
flow rate	Mykrolis	FC280SAV-4S	AW902153	none
Infrastructure	Infrastructure	none	none	none
MFC power supply	Tylan	RO-32	FP9706002	none
Modem	Sierra wireless	GX450	LA82610159001005	none
Ozone	ThermoElectron Inc	49i A3NAA	1023943903	none
Ozone Standard	ThermoElectron Inc	49i A1NAA	CM08460050	none
Shelter Temperature	ARS	unknown	none	none
siting criteria	Siting Criteria	none	None	none
Temperature	Vaisala	WTX536	V4920651	none
Zero air pump	Werther International	PC70/4	531395	none

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number		
CAN	CAN407-Martin Valvur-11/01/2024							
1	11/1/2024	Computer	Hewlett Packard	none	EliteBook	CNV1360668		
2	11/1/2024	DAS	Environmental Sys Corp	None	8864	C2598		
3	11/1/2024	Elevation	Elevation	None	1	None		
4	11/1/2024	Filter pack flow pump	Thomas	none	107CAB18	112100073069		
5	11/1/2024	Flow Rate	Alicat	none	MC-10SLPM-D-PCV	Illgeible		
6	11/1/2024	Infrastructure	Infrastructure	none	none	none		
7	11/1/2024	Met tower	Universal Tower	01357	unknown	none		
8	11/1/2024	Modem	Sierra wireless	none	GX450	LA54620441001003		
9	11/1/2024	Ozone	ThermoElectron Inc	none	49i A3NAA	1030745086		
10	11/1/2024	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	1030745084		
11	11/1/2024	Sample Tower	Aluma Tower	illegible	В	none		
12	11/1/2024	Shelter Temperature	ARS	none	none	none		
13	11/1/2024	Siting Criteria	Siting Criteria	None	1	None		
14	11/1/2024	Temperature	Vaisala	none	WTX536	V4050350		
15	11/1/2024	Zero air pump	Altec	none	CDA10	101900272		

DAS Data Form

DAS Time Max Error: 0.72

Mfg	Serial Nu	mber Si	ite 7	Technician	Site Visit Date	Parameter	Use Desc.
Environmental S	Sys C2598	C	CAN407	Martin Valvur	11/01/2024	DAS	Primary
Das Date:	11/1 /2024 8:52:17	Audit Dat Audit Tim	e 11/1 /2024 e 8:53:00	Mfg	HY	Parameter	DAS
Das Day:	306	Audit Day	306	Serial Number	12010039329	Tfer Desc.	Source generator (D
Low Channel:		High Chan	inel:	Tfer ID	01322		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:	Slope	1.0000	0 Intercept	0.00000
0.0000	0.0000	0.00	000 0.0000	Cert Date	6/15/201	4 CorrCoff	1.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740243	Tfer Desc.	DVM
				Tfer ID	01312		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	Input D	VM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.000	0.000	0 V	V	0.0000	

Flow Data Form

Mfg	Serial Num	ıber Tag	Site		Те	ech	nician	Site Visi	t Date	Param	eter	Owner ID	
Alicat	Illgeible		CAN	407	М	lart	tin Valvur	11/01/20	24	Flow R	ate	none	
						N	lfg	BIOS		P	arameter Fl	ow Rate	
						S	Serial Number	152253		Т	fer Desc. Bl	OS 220-H	
						Т	fer ID	15225					
						S	Slope		1.0000	0 Inte	ercept	0.000	00
						C	Cert Date		5/2/202	22 Cor	rCoff	1.000	00
DAS 1:		DAS 2:					Cal Factor Z	ero		0.02	23		
A Avg % Diff:	A Max % Dif	A Avg %	Diff	A Max	% Dif		Cal Factor Fu	ull Scale		4.99	94		
0.00%	0.00%	0	.00%		0.00%		Rotometer R	eading:		3	.4		
Desc.	Test type	Input l/m	n Inpu	t Corr	MfcDisp).	OutputSignal	Output S	E Inp	utUnit (OutputSigna	II PctDifferend	ce
primary	pump off	0.000	0	.000	0.00		0.0000	0.03	1	l/m	l/m	0.00	%
Sensor Comp	onent Leak Tes	t			Conditi	on	Not tested			Status	pass		
Sensor Comp	onent Tubing C	ondition			Conditi	on	Not tested			Status	pass		
Sensor Comp	onent Filter Pos	ition			Conditi	on	Good			Status	pass		
Sensor Comp	onent Rotomete	er Conditio	n		Conditi	on	Clean and dry			Status	pass		
Sensor Comp	onent Moisture	Present			Conditi	on	No moisture pr	esent		Status	pass		
Sensor Comp	onent Filter Dist	tance			Conditi	on	5.5 cm			Status	pass		
Sensor Comp	onent Filter Dep	oth			Conditi	on	0.4 cm			Status	pass		
Sensor Comp	onent Filter Azir	muth			Conditi	on	60 deg			Status	pass		
Sensor Comp	onent System M	lemo			Conditi	on	See comments			Status	pass		

Ozone Data Form

Mfg	Serial Number	r Tag Site	Т	echnician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030745086	CAN407	7 N	lartin Valvur	11/01/2024	Ozone	none
Slope: Intercept CorrCoff:	0.98830 Slope 0.71827 Inter 0.99997 Corr	e: () cept () Coff: ()	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron CM23147126 01116	Inc Paramete	er ozone c. Ozone primary stan
DAS 1.	DA	\$ 2.			0.0000		0.04700
A Avg % Diff: A N	Aax % Dif A A	Avg %Diff A	Max % Dif	Slope	0.9926	⁰ Intercept	0.04790
0.0%	0.0%			Cert Date	4/10/202	²⁴ CorrCoff	0.99999
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.10	0.05	-0.12	ppb		-0.17
primary	2	14.38	14.34	13.10	ppb		-1.24
primary	3	32.73	32.70	31.26	ppb	-4.5	
primary	5	115.11	115.13	113 20	ppo ppb	-2.32	
Sensor Compone	nt Audit Pressu	re	Condit	ion 609 mmHg	ppo	Status pass	
Sensor Compone	ent 26.6 degree	unobstructed ru	lle Condit	ion True		Status pass	
Sensor Compone	ent Tree dewline	>10m or below	inlet Condit	ion True		Status pass	
Sensor Compone	ent ADT 1000-10	0000 vehicles fu	Irther t Condit	ion False		Status pass	
Sensor Compone	ent ADT <1000 v	ehicles further	than 5 Condit	ion True		Status pass	
Sensor Compone	ent Sample Trair	ı	Condit	ion Good		Status pass	
Sensor Compone	ent Inlet Filter Co	ondition	Condit	ion Clean		Status pass	
Sensor Compone	ent Offset		Condit	ion -0.3		Status pass	
Sensor Compone	ent Span		Condit	ion 1.015		Status pass	
Sensor Compone	ent Zero Voltage	•	Condit	ion 0.0006		Status pass	
Sensor Compone	ent Fullscale Vol	tage	Condit	ion 1.0009		Status pass	
Sensor Compone	ent Cell A Freq.		Condit	ion 95.9 kHz		Status pass	
Sensor Compone	ent Cell A Noise		Condit	ion 0.6 ppb		Status pass	
Sensor Compone	ent Cell A Flow		Condit	ion 0.71 lpm		Status pass	
Sensor Compone	ent Cell A Press	ure	Condit	ion 605.6 mmHg		Status pass	
Sensor Compone	ent Cell A Tmp.		Condit	ion 28.4 C		Status pass	
Sensor Compone	ent Cell B Freq.		Condit	ion 85.3 kHz		Status pass	
Sensor Compone	ent Cell B Noise		Condit	ion 0.6 ppb		Status pass	
Sensor Compone	Cell B Flow		Condit	ion 0.71 lpm		Status pass	
Sensor Compone	ent Cell B Press	ure	Condit	ion 605.0 mmHg		Status pass	
Sensor Compone	nt Nafion dryer	installed	Condit	ion False		Status pass	
Sensor Compone	ent System Mem	10	Condit	ion		Status pass	

Temperature Data Form

Mfg	Serial Number Ta	g Site		Techni	ician	Site Visit Date	Param	eter	Owner ID
Vaisala	V4050350	CAN407		Martin	Valvur	11/01/2024	Temper	rature	none
				Mf	`g	Fluke	Pa	rameter Te	emperature
				Ser	rial Number	3275143	Tf	fer Desc. R	ГD
				Tfe	er ID	01229			
DAS 1:	DAS 2:			Slo	ope	1.0002	22 Inte	rcept	-0.00505
Abs Avg Err	Abs Max Err Abs Av	g Err Abs	Max Err	Cer	rt Date	2/12/202	24 Cor	rCoff	1.00000
0.00	0.00								
UseDesc.	Test type In	putTmpRaw	InputTm	pCorr.	OutputTmp	Signal OutputSi	gnalEng	OSE Unit	Difference
primary		0.00	0.00)	0.0000) 0.	0	C	0
Sensor Com	ponent Shield		Cond	lition C	Clean		Status	pass	
Sensor Com	ponent Blower		Cond	lition N	N/A		Status	pass	
Sensor Com	ponent Properly Sited		Cond	lition F	Properly sited		Status	pass	
Sensor Com	ponent System Memo		Cond	lition S	See comments	•	Status	pass	

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
ARS	none	CAN407	Martin Valvur	11/01/2024	Shelter Temperatu	ire none
DAS 1:	DAS 2:		Mfg	Fluke	Parameter S	helter Temperature
Abs Avg Err Abs	Max Err Abs Avg 1.60	Err Abs Max Err	Serial Number	3275143	Tfer Desc.	RTD
			Tfer ID	01229		
			Slope	1.0002	22 Intercept	-0.00505
			Cert Date	2/12/202	24 CorrCoff	1.00000

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	17.58	17.58	0.000	18.6	С	1.05
primary	Temp Mid Range	17.18	17.18	0.000	18.8	С	1.6
primary	Temp Mid Range	17.59	17.59	0.000	19.2	С	1.57
Sensor Component System Memo Condition Status pass							
Siting Criteria Form

Infrastructure Data For

Site ID	CAN407	Technician Martin	/alvur Site Visit Date 11/01/2024
Shelter	Make	Shelter Model	Shelter Size
NPS		R46453	640 cuft

Sensor Component Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component Conduit	Condition	Good	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Good	Status	pass
Sensor Component Shelter Condition	Condition	Good	Status	pass
Sensor Component Shelter Door	Condition	Good	Status	pass
Sensor Component Shelter Roof	Condition	Good	Status	pass
Sensor Component Shelter Floor	Condition	Good	Status	pass
Sensor Component Shelter walls	Condition	Good	Status	pass
Sensor Component Excessive mold present	Condition	Good	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

Field Systems Comments

1 Parameter: SiteOpsProcComm

The flow rate standard malfunctioned during the audit and the flow rate could not be audited.

2 Parameter: DocumentationCo

Site equipment manuals should be available online.

3 Parameter: SitingCriteriaCom

The small parking lot at the visitors center is approximately 200m to the northeast.

4 **Parameter:** ShelterCleanNotes

The shelter is in good condition, well organized and well maintained.

5 Parameter: MetSensorComme

The 2-meter temperature sensor has been replaced with an "all-in-one" sensor mounted at the top of the sample tower. The data logger was not functioning properly and recorded data from the temperature sensor were not available. An audit of the temperature system was not possible.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID	CAN407	Technician Martin Valvur	Site Visit Date 11/0	1/2024
Site Sponsor ((agency)	NPS	USGS Map	Musselman Arch
Operating Green	oup	NPS	Map Scale	
AQS #		49-037-0101	Map Date	
Meteorologica	al Type	Climatronics		
Air Pollutant	Analyzer	Ozone, IMPROVE	QAPP Latitude	
Deposition Me	easurement	dry, wet	QAPP Longitude	
Land Use		woodland - mixed, desert range	QAPP Elevation Meters	
Terrain		complex	QAPP Declination	
Conforms to N	MLM	Marginally	QAPP Declination Date	
Site Telephon	e	(435) 259-4141	Audit Latitude	38.458323
Site Address 1	l	Visitors Center	Audit Longitude	-109.82126
Site Address 2	2	route 313	Audit Elevation	1794
County		San Juan	Audit Declination	11.6
City, State		Moab, UT	Present	
Zip Code		84532	Fire Extinguisher 🗹	Inspected April 2015
Time Zone		Mountain	First Aid Kit	in vehicle
Primary Oper	rator		Safety Glasses	
Primary Op.	Phone #		Safety Hard Hat	
Primary Op. I	E-mail		Climbing Belt	
Backup Opera	ator		Security Fence	
Backup Op. H	Phone #		Secure Shelter	
Backup Op. H	E-mail		Stable Entry Steps ✓	
Shelter Worki	ing Room 🗹	Make NPS M	odel R46453	Shelter Size 640 cuft
Shelter Clean	\checkmark	Notes The shelter is in good condition	n, well organized and well main	tained.
Site OK		Notes		
Driving Direct	tions From the signation to Car	I-70, take exit 180 south on route 191. A gn for Canyonlands National Park. Follov nyonlands. The site is at the end of the d	pproximately 9 miles north of M v 313 west for 25 miles passing irt road behind the visitors cent	loab, turn right (west) on route 313 at the state park and continuing straight er, in the maintenance area.

Fi	eld Sy	stems Data Fo	orm				F-020	58-1	500-S3-re	v002
Site	e ID	CAN407	Technician	Martin Valvur		Site Visit Date	11/01/2024]	
1	Are win being in	d speed and direction fluenced by obstructio	sensors sited so ons?) as to avoid	✓	N/A				
2	Are win (i.e. win horizon tower in	d sensors mounted so d sensors should be m tally extended boom > to the prevailing wind	as to minimize ounted atop the 2x the max dia l)	tower effects? e tower or on a meter of the		N/A				
3	Are the	tower and sensors plu	mb?		✓	N/A				
4	Are the avoid ra	temperature shields p diated heat sources su	ointed north or Ich as buildings	• positioned to s, walls, etc?						
5	Are tem conditio surface standing	perature and RH sens ns? (i.e. ground below and not steeply sloped g water should be avoi	sors sited to avo sensors should l. Ridges, hollow ded)	oid unnatural l be natural vs, and areas of						
6	Is the so	lar radiation sensor p	lumb?		✓	N/A				
7	Is it site	d to avoid shading, or	any artificial o	r reflected light?		N/A				
8	Is the ra	in gauge plumb?			✓	N/A				
9	Is it site towers,	d to avoid sheltering e etc?	ffects from bui	ldings, trees,	✓	N/A				
10	Is the su facing n	urface wetness sensor s orth?	sited with the g	rid surface	✓	N/A				
11	Is it inc	lined approximately 3	0 degrees?		✓	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 2-meter temperature sensor has been replaced with an "all-in-one" sensor mounted at the top of the sample tower. The data logger was not functioning properly and recorded data from the temperature sensor were not available. An audit of the temperature system was not possible.

Field Systems Data Form

F-02058-1500-S4-rev002

Site	e ID	CAN407	Technician	Martin Valvur		Site Visit Date	11/01/2024]
1	Do all th conditio	e meterological sensor n, and well maintained	rs appear to be l?	intact, in good	✓			
2	Are all t reportin	he meteorological sens g data?	ors operationa	l online, and				
3	Are the	shields for the tempera	ature and RH s	ensors clean?				
4	Are the aspirated motors working?							
5	Is the so scratche	lar radiation sensor's l s?	lens clean and f	free of	✓	N/A		
6	Is the su	rface wetness sensor g	rid clean and u	indamaged?		N/A		
7	Are the s condition	sensor signal and powe	er cables intact l?	, in good				
8	Are the s from the	sensor signal and powe e elements and well ma	er cable connec intained?	tions protected				

Fi	eld Sy	stems Data Fo	orm		F-0205	58-150	0-S5-rev002		
Site	e ID	CAN407	Technician	Martin Valvur		Site Visit Date	11/01/2024		
	<u>Siting C</u>	Criteria: Are the pollut	ant analyzers an	d deposition eq	<u>uipn</u>	nent sited in accord	dance with 40	<u>CFR 58,</u>	<u>Appendix E</u>
1	Do the sunrestri	sample inlets have at le icted airflow?	east a 270 degree	arc of	✓				
2	Are the	sample inlets 3 - 15 mo	eters above the g	ground?	✓				
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?								
	<u>Polluta</u>	nt analyzers and depos	ition equipment	operations and	mai	<u>ntenance</u>			
1	Do the a condition	analyzers and equipme on and well maintained	ent appear to be	in good	✓				
2	Are the reportir	analyzers and moniton 1g data?	rs operational, o	n-line, and	✓				
3	Describ	e ozone sample tube.				1/4 teflon by 10 met	ters		
4	Describ	e dry dep sample tube.				3/8 teflon by 10 met	ters		
5	Are in-l indicate	ine filters used in the o clocation)	ozone sample line	e? (if yes		At inlet only			
6	Are san obstruc	nple lines clean, free of tions?	'kinks, moisture	, and	✓				
7	Is the ze	ero air supply desiccan	t unsaturated?		✓				
8	Are the	re moisture traps in th	e sample lines?		✓	Flow line only			
9	Is there clean?	a rotometer in the dry	deposition filter	r line, and is it		Clean and dry			

Fi	eld Sy	stems Data Fo	orm				F	-02058-15	500-S6-rev002
Site ID CAN407		Technician	Martin Valvur		Site Visit	Date 11/01/2	2024		
	<u>DAS, se</u>	nsor translators, and g	peripheral equi	pment operation	<u>is an</u>	<u>d maintenan</u>	<u>ce</u>		
1	Do the l well ma	DAS instruments appe intained?	ar to be in good	l condition and					
2	Are all t modem,	the components of the backup, etc)	DAS operation	al? (printers,					
3	Do the a lightnin	nalyzer and sensor sig g protection circuitry?	gnal leads pass	through		none			
4	Are the well ma	signal connections pro intained?	otected from the	e weather and					
5	Are the	signal leads connected	to the correct	DAS channel?					
6	Are the grounde	DAS, sensor translato ed?	rs, and shelter	properly					
7	Does the	e instrument shelter ha	ave a stable pov	ver source?					
8	Is the in	strument shelter temp	erature contro	lled?					
9	Is the m	et tower stable and gr	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	grounded?						
11	Tower o	comments?			-				

Fie	eld Systems Data	Fo	rm				F-02	058-	1500-S7-rev002
Site	ID CAN407		Tecl	hnician M	artin Valvur	Site Visit Date	11/01/2024		
D	ocumentation								
	oes the site have the require	ed in	strum	ent and ea	uinment manuals?				
	oes the site have the require	Yes	No	N/A			Yes	No	N/A
Win	d speed sensor				Data logge	r			
Win	d direction sensor		✓		Data logge	r			\checkmark
Tem	perature sensor		✓		Strip char	t recorder			\checkmark
Rela	tive humidity sensor				Computer				
Sola	r radiation sensor				Modem			\checkmark	
Surf	ace wetness sensor				Printer				\checkmark
Win	d sensor translator				Zero air p	ump		\checkmark	
Tem	perature translator			\checkmark	Filter flow	pump		\checkmark	
Hun	nidity sensor translator			\checkmark	Surge prot	ector			\checkmark
Sola	r radiation translator			\checkmark	UPS				\checkmark
Tipp	oing bucket rain gauge			\checkmark	Lightning	protection device	e 🗌		\checkmark
Ozo	ne analyzer				Shelter he	ater		\checkmark	
Filte	er pack flow controller		\checkmark		Shelter air	conditioner		\checkmark	
Filte	er pack MFC power supply		\checkmark						
	Does the site have the requi	red a	and m	ost recent	QC documents and	report forms?			
		Pre	sent				Currer	ıt	
Stati	ion Log		\checkmark	Dataview			\checkmark		
SSR	F		\checkmark				\checkmark		
Site	Ops Manual			2015			\checkmark		
HAS	SP								
Field	l Ops Manual								
Cali	bration Reports		\checkmark				\checkmark		
Ozo	ne z/s/p Control Charts								
Prev	rentive maintenance schedu	le							
1	Is the station log properly	comj	pleted	during evo	ery site visit? 🔽				
2	Are the Site Status Report current?	Fori	ms bei	ng comple	ted and 🗹 F	low & observation	sections		
3	Are the chain-of-custody for sample transfer to and from	orms m lal	s propo b?	erly used t	o document 🔽				
4	Are ozone z/s/p control cha current?	rts p	proper	ly complet	ted and 🗌 C	ontrol charts not u	ised		
Prov natu	vide any additional explanation of the second se	tion (affe	(photo ect the	graph or s monitorin	sketch if necessary) g parameters:	regarding condit	tions listed a	bove, c	or any other features,
Site	equipment manuals should be	e ava	ilable o	online.					

Field Systems Data Form

CAN407 Technician Martin Valvur Site Visit Date 11/01/2024 Site ID Site operation procedures Has the site operator attended a formal CASTNET training 1 course? If yes, when and who instructed? 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed? Is the site visited regularly on the required Tuesday ✓ 3 schedule? \checkmark Are the standard CASTNET operational procedures being 4 flollowed by the site operator? Is the site operator(s) knowledgeable of, and able to perform 5 the required site activities? (including documentation)

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

QC Check Performed Multipoint Calibrations

Frequency

Multipoint Calibrations	\checkmark	Semiannually
Visual Inspections	\checkmark	Weekly
Translator Zero/Span Tests (climatronics)	\checkmark	N/A
Manual Rain Gauge Test	\checkmark	Monthly
Confirm Reasonableness of Current Values	\checkmark	Weekly
Test Surface Wetness Response	\checkmark	N/A

Frequency

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

OC	Check	Perforn	ned
$\chi \sim$			

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests Automatic Precision Level Tests Manual Precision Level Test Analyzer Diagnostics Tests In-line Filter Replacement (at inlet) In-line Filter Replacement (at analyze Sample Line Check for Dirt/Water **Zero Air Desiccant Check**

riequency	CU
Semiannually	
Daily	
Monthly	
Daily	
Alarm values only weekly	
Monthly	\checkmark
N/A	\checkmark
Weekly	\checkmark
Weekly	

- 1 Do multi-point calibration gases go through the complete sample train including all filters?
- Do automatic and manual z/s/p gasses go through the 2 complete sample train including all filters?

3	Are the automatic and manual z/s/p checks monitored and
	reported? If yes, how?

✓	Unknown
✓	
✓	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:

Compliant

Compliant

 \checkmark

 \checkmark

 \checkmark

 \checkmark

 \checkmark

 \checkmark

F-02058-1500-S8-rev002

Fi	eld Sy	stems Data Form			F-02058-1500-S9-rev002				
Sit	e ID	CAN407 Tec	chnician Martin Valvur		Site Visit Date	11/01/2024			
	<u>Site ope</u>	ration procedures							
1	Is the fi	lter pack being changed ever	y Tuesday as scheduled?		Filter changed mor	nings			
2	Are the correctl	Site Status Report Forms be y?	ing completed and filed						
3	Are dat schedul	a downloads and backups be ed?	ing performed as		No longer required				
4	Are gen	eral observations being mad	e and recorded? How?	✓	Dataview and SSRF				
5	Are site fashion	supplies on-hand and repler ?	nished in a timely	✓					
6	6 Are sample flow rates recorded? How?				SSRF				
7	Are san fashion	nples sent to the lab on a regu ?	ular schedule in a timely	✓					
8	Are filte and shij	ers protected from contamina oping? How?	ation during handling	✓	Clean gloves on and off				
9	Are the operation	site conditions reported regu ons manager or staff?	ılarly to the field						
QC	Check P	erformed	Frequency			Compliant			
I	Aulti-poi	nt MFC Calibrations	Semiannually			\checkmark			
1	Flow System Leak Checks Weekly		✓ Weekly			\checkmark			
I	Filter Pack Inspection								
I	Flow Rate Setting Checks Veekly					\checkmark			
	/isual Ch	eck of Flow Rate Rotometer	✓ Weekly			\checkmark			
I	n-line Fil	ter Inspection/Replacement	✓ As needed						
5	Sample Li	ine Check for Dirt/Water	✓ Weekly						

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 flow rate standard malfunctioned during the audit and the flow rate could not be audited.

Field Systems Data Form

CAN407

F-02058-1500-S10-rev002

Techn

Technician Martin Valvur

Site Visit Date 11/01/2024

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Hewlett Packard	EliteBook	CNV1360668	none
DAS	Environmental Sys Corp	8864	C2598	None
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CAB18	112100073069	none
Flow Rate	Alicat	MC-10SLPM-D-PCV	Illgeible	none
Infrastructure	Infrastructure	none	none	none
Met tower	Universal Tower	unknown	none	01357
Modem	Sierra wireless	GX450	LA54620441001003	none
Ozone	ThermoElectron Inc	49i A3NAA	1030745086	none
Ozone Standard	ThermoElectron Inc	49i A1NAA	1030745084	none
Sample Tower	Aluma Tower	В	none	illegible
Shelter Temperature	ARS	none	none	none
Siting Criteria	Siting Criteria][1	None	None
Temperature	Vaisala	WTX536	V4050350	none
Zero air pump	Altec	CDA10	101900272	none

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number		
ZIO433-Martin Valvur-11/10/2024								
1	11/10/2024	DAS	Campbell	none	CR1000	62970		
2	11/10/2024	Ozone	Teledyne	none	T400	7459		
3	11/10/2024	Ozone Standard	ThermoElectron Inc	none	49i A3NAA	1231755663		
4	11/10/2024	Zero air pump	Werther International	none	PC 70/4	000706556		

Ozone Data Form

Mfg	Serial	Number Ta	a Site	<u>[</u>	Fechnician	Site Visit Date	Parameter	Owner ID
Teledyne	7459		ZIO433		Martin Valvur	11/10/2024	Ozone	none
Slope:	0.98434	4 Slope:		0.00000	Mfg	ThermoElectron	Inc Paramet	ter ozone
Intercept	0.1607	4 Intercep	t (0.0000	Serial Number	CM23147126	Tfer Des	. Ozone primary stan
CorrCoff	0.99994	4 CorrCof	f	0.00000	Tfer ID	01116		
DAG 1.		DAGO					_	
DAS 1: A Avg % Di	ff• A Max %	DAS 2 Di A Avg	: %Diff A	Max % Di	Slope	0.9926	Intercept	0.04790
0.09	% 0	.0%			Cert Date	4/10/202	24 CorrCoff	0.99999
UseDescrip	tion Conc	Group T	fer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	7	1	0.09	0.04	-0.20	ppb		-0.24
primary		2	11.57	11.52	11.56	ppb	1.04	0.04
primary		3	32.01	31.98	31.65	ppb	-1.04	
primary	7	+ 5	114.33	114.35	112.30	ppb	-0.11	
Sensor Co	mponent Auc	lit Pressure	11100	Condi	ition 656 mmHg	PPo	Status pass	
Sensor Co	mponent 26.6	6 degree uno	bstructed ru	lle Condi	ition True		Status pass	
Sensor Co	mponent Tre	e dewline >1	Om or below	/ inlet Condi	ition True		Status pass	
Sensor Co	mponent AD	Г 1000-1000) vehicles fi	urther Condi	ition True		Status pass	
Sensor Co	mponent AD	Г <1000 vehi	cles further	than Condi	ition True		Status pass	
Sensor Co	mponent San	nple Train		Condi	ition Good		Status pass	
Sensor Co	mponent Inle	t Filter Condi	tion	Condi	ition Clean		Status pass	
Sensor Co	mponent Offs	set		Condi	ition -2.9		Status pass	
Sensor Co	mponent Spa	in		Condi	ition 1.001		Status pass	
Sensor Co	mponent Zer	o Voltage		Condi	ition N/A		Status pass	
Sensor Co	mponent Full	scale Voltage	9	Condi	ition N/A		Status pass	
Sensor Co	mponent Cel	A Freq.		Condi	ition N/A		Status pass	
Sensor Co	mponent Cel	A Noise		Condi	ition N/A		Status pass	
Sensor Co	mponent Cel	A Flow		Condi	ition 0.43 lpm		Status pass	
Sensor Co	mponent Cel	A Pressure		Condi	ition 24.0 inHg		Status pass	
Sensor Co	mponent Cel	A Tmp.		Condi	ition 23.8 C		Status pass	
Sensor Co	mponent Cel	B Freq.		Condi	ition N/A		Status pass	
Sensor Co	mponent Cel	B Noise		Condi	ition N/A		Status pass	
Sensor Co	mponent Cell	B Flow		Condi	ition N/A		Status pass	
Sensor Co	mponent Cell	B Pressure		Condi	ition N/A		Status pass	
Sensor Co	mponent Naf	ion dryer inst	alled	Condi	ition False		Status pass	
Sensor Co	mponent Sys	tem Memo		Condi	ition		Status pass	

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number		
STK138-Eric Hebert-11/11/2024								
1	11/11/2024	DAS	Campbell	000349	CR3000	2128		
2	11/11/2024	Ozone	ThermoElectron Inc	000625	49i A1NAA	1009241797		
3	11/11/2024	Ozone Standard	ThermoElectron Inc	000445	49i A3NAA	CM08200021		
4	11/11/2024	Zero air pump	Werther International	06897	C 70/4	000821893		

Ozone Data Form

Mfg	Serial Numb	er Ta Site	Те	echnician	Site Visit Date	Parameter	Owner ID
ThermoElectro	n Inc 1009241797	STK138	B E	ric Hebert	11/11/2024	Ozone	000625
Slope:	1.01978 Slot	be:	0.00000	Mfg	ThermoElectron	Inc Paramet	erozone
Intercept	0.01972 Inte	ercept	0.00000	Serial Number	1180030022	Tfer Des	c. Ozone primary stan
CorrCoff	1.00000 Cor	rCoff	0.0000	Tfor ID	01114		
DICA							
DAS I: A Avg % Diff	D • A Max % Di A	AS 2: Avg %Diff A	Max % Di	Slope	0.9997	O Intercept	0.31710
0.0%	0.0%			Cert Date	2/14/202	24 CorrCoff	1.00000
UseDescripti	on ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.59	0.27	0.20	ppb		-0.07
primary	2	14.73	14.42	14.67	ppb		0.25
primary	3	33.78	33.49	34.33	ppb	2.48	
primary	5	105.22	105.01	107.00	ppo ppb	2.13	
Sensor Com	ponent Audit Press	sure	Conditi	on 739 mmHg		Status pass	
Sensor Com	ponent 26.6 degree	e unobstructed ru	ule Conditi	on True		Status pass	
Sensor Com	ponent Tree dewlin	e >10m or belov	v inlet Conditi	on True		Status pass	
Sensor Com	ponent ADT 1000-	10000 vehicles fi	urther Conditi	on True		Status pass	
Sensor Com	ponent ADT <1000	vehicles further	than Conditi	on True		Status pass	
Sensor Com	ponent Sample Tra	iin	Conditi	on Good		Status pass	
Sensor Com	ponent Inlet Filter (Condition	Conditi	on Clean		Status pass	
Sensor Com	ponent Offset		Conditi	on -0.20		Status pass	
Sensor Com	ponent Span		Conditi	on 1.032		Status pass	
Sensor Com	ponent Zero Voltag	je	Conditi	on N/A		Status pass	
Sensor Com	ponent Fullscale Vo	oltage	Conditi	on N/A		Status pass	
Sensor Com	ponent Cell A Freq		Conditi	on 99.7 kHz		Status pass	
Sensor Com	ponent Cell A Noise	е	Conditi	on Not tested		Status pass	
Sensor Com	ponent Cell A Flow	,	Conditi	on 0.62 lpm		Status pass	
Sensor Com	ponent Cell A Pres	sure	Conditi	on 692.7 mmHg		Status pass	
Sensor Com	ponent Cell A Tmp	•	Conditi	on 35.7 C		Status pass	
Sensor Com	ponent Cell B Freq	•	Conditi	on 103.7 kHz		Status pass	
Sensor Com	ponent Cell B Noise	e	Conditi	on Not tested		Status pass	
Sensor Com	ponent Cell B Flow		Conditi	on 0.57 lpm		Status pass	
Sensor Com	ponent Cell B Pres	sure	Conditi	on 692.1 mmHg		Status pass	
Sensor Com	ponent Nafion drye	r installed	Conditi	on True		Status pass	
Sensor Com	ponent System Me	mo	Conditi	on		Status pass	

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
BVL	130-Eric H	ebert-11/12/2024				
1	11/12/2024	со	Teledyne	000875	T300U	477
2	11/12/2024	DAS	Campbell	000424	CR3000	2539
3	11/12/2024	Elevation	Elevation	None	1	None
4	11/12/2024	Filter pack flow pump	Thomas	04860	107CAB18	060300019995
5	11/12/2024	Flow Rate	Арех	000604	AXMC105LPMDPCV	unknown
6	11/12/2024	Infrastructure	Infrastructure	none	none	none
7	11/12/2024	Met tower	Climatronics	02738	14 inch taper	none
8	11/12/2024	Modem	Digi	07173	LR54	Illegible
9	11/12/2024	Noy	Teledyne	000805	T200U	110
10	11/12/2024	Ozone	ThermoElectron Inc	000738	49i A1NAA	1105347307
11	11/12/2024	Ozone Standard	ThermoElectron Inc	000219	49i A3NAA	0622717857
12	11/12/2024	Precipitation	Texas Electronics	06334	TR-525i-HT	illegible
13	11/12/2024	Relative Humidity	Vaisala	07117	HMP45A	850853
14	11/12/2024	Sample Tower	Aluma Tower	000182	В	unknown
15	11/12/2024	Shelter Temperature	Campbell	none	107-L	unknown
16	11/12/2024	Shield (10 meter)	RM Young	06206	Aspirated 43408	none
17	11/12/2024	Shield (2 meter)	RM Young	06166	Aspirated 43408	none
18	11/12/2024	Siting Criteria	Siting Criteria	None	1	None
19	11/12/2024	SO2	Teledyne	000787	T100U	94
20	11/12/2024	Solar Radiation	Licor	06829	LI-200	PY67718
21	11/12/2024	Solar Radiation Translator	RM Young	06620	70101-X	none
22	11/12/2024	Surface Wetness	RM Young	07094	58101	none
23	11/12/2024	Temperature	RM Young	04690	41342	6704
24	11/12/2024	Temperature2meter	RM Young	07287	41342	031778
25	11/12/2024	Wind Direction	RM Young	04408	AQ05305	35866wdr
26	11/12/2024	Wind Speed	RM Young	04408	AQ05305	35866wsp
27	11/12/2024	Zero air pump	Werther International	06926	PC70/4	000836218
28	11/12/2024	Zero air pump	Teledyne	000759	701H	576

DAS Data Form

DAS Time Max Error: 0.02

Mfg	Serial Nu	mber Sit	te	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2539	B	VL130	Eric Hebert	11/12/2024	DAS	Primary
Das Date:	11/12/2024	Audit Date	11/12/2024	Mfg	Datel	Parameter	DAS
Das Time: Das Day:	10:15:00 317	Audit Time Audit Day	e 10:14:59 317	Serial Number	15510194	Tfer Desc.	Source generator (D
Low Channel:		High Chanı	nel:	Tfer ID	01320		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:	Slope	1.0000	0 Intercept	0.00000
0.0000	0.0000	0.00		Cert Date	2/13/201	2 CorrCoff	1.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740135	Tfer Desc.	DVM
				Tfer ID	01311		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	Input D	VM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.000	0 V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	ıber Tag	Site	Tee	chnician	Site Visit D	Date Paran	neter	Owner ID
Apex	unknown		BVL130	Er	ic Hebert	11/12/2024	Flow F	Rate	000604
					Mfg	BIOS	F	arameter Flo	w Rate
					Serial Number	148613	1	fer Desc. BIC)S 220-H
					Tfer ID	01421			
					Slope	1.	00871 Int	ercept	0.00110
					Cert Date	2/10	6/2024 Co	rrCoff	0.99999
DAS 1:		DAS 2:			Cal Factor Z	ero	0.0	19	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	: % Dif	Cal Factor F	ull Scale	0.9	93	
0.67%	0.67%				Rotometer R	eading:	1.	45	
Desc.	Test type	Input l/n	n Input Corr_	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignall	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.02	l/m	l/m	
primary	leak check	0.000	0.000	0.01	0.000	0.02	l/m	l/m	
primary	test pt 1	1.507	1.490	1.52	0.000	1.50	l/m	l/m	0.67%
primary	test pt 2	1.502	1.490	1.52	0.000	1.50	l/m	l/m	0.67%
primary	test pt 3	1.501	1.490	1.52	0.000	1.50	l/m	l/m	0.67%
Sensor Comp	onent Leak Tes	t		Condition			Statu	<mark>s</mark> pass	
Sensor Comp	onent Tubing C	ondition		Conditio	Condition Good			<mark>s</mark> pass	
Sensor Comp	onent Filter Pos	ition		Conditio	n Good		Statu	s pass	
Sensor Comp	onent Rotomete	er Conditio	'n	Conditio	Condition Clean and dry			<mark>s</mark> pass	
Sensor Comp	onent Moisture	Present		Conditio	n See comments	3	Statu	<mark>s</mark> pass	
Sensor Comp	onent Filter Dist	ance		Conditio	3.0 cm		Statu	<mark>s</mark> pass	
Sensor Comp	onent Filter Dep	oth		Conditio	3.0 cm		Statu	s pass	
Sensor Comp	onent Filter Azir	muth		Conditio	225 deg		Statu	s pass	
Sensor Comp	onent System N	lemo		Conditio	on		Statu	s pass	

Ozone Data Form

Mfg		Serial Number	er Tag	Site		Te	chnician	Site Visit Date	Param	eter	Owner ID	
ThermoElectr	on Inc	1105347307		BVL130		Er	ic Hebert	11/12/2024	Ozone		000738	
Slope: Intercept CorrCoff:		1.00679Slop0.90024Inte0.99999Cor	oe: rcept rCoff:		0.00000 0.00000 0.00000		Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc P _f	aramete fer Desc	r ozone . Ozone primary stan	
DAS 1.		D	48.2.					0.0007	20 T (0.21710	
A Avg % Dif	ff: A N %	1ax % Dif A 0.0%	Avg %	Diff A	Max %	% Dif	Slope Cert Date	2/14/202	²⁴ Cor	rcept	1.00000	
UseDescrip	otion	ConcGroup	Tfe	r Raw	Tf	er Corr	Site	Site Unit	RelPe	rDif	AbsDif	
primary	7	1	0	0.36		0.04	-0.65	ppb			-0.69	
primary	T	2		5.87		15.57	14.71	ppb ppb		2 24	-0.86	
primary	7	4	6	+.85 9.49	6	59.24	68.64	ppo ppb		-2.34		
primary	7	5	10	9.40	1	09.20	109.20	ppb		0		
Sensor Co	mpone	nt Audit Press	ure			Conditi	on 751 mmHg		Status	pass		
Sensor Co	mpone	nt 26.6 degree	e unobs	tructed ru	le	Conditi	on True		Status	pass		
Sensor Co	mpone	nt Tree dewlin	e >10m	or below	inlet	Conditi	on True		Status	pass		
Sensor Co	mpone	nt ADT 1000-1	10000 v	ehicles fu	irther t	Conditi	on True		Status	pass		
Sensor Co	mpone	nt ADT <1000	vehicle	s further	than 5	Conditi	on True		Status	pass		
Sensor Co	mpone	nt Sample Tra	in			Conditi	on Good		Status	pass		
Sensor Co	mpone	nt Inlet Filter C	Conditio	n		Conditi	on Clean		Status	pass		
Sensor Cor	mpone	ont Offset				Conditi	on 0.000		Status	pass		
Sensor Cor	mpone	nt Span				Conditi	on 1.018		Status	pass		
Sensor Cor	mpone	nt Zero Voltag	е			Conditi	on N/A		Status	pass		
Sensor Cor	mpone	nt Fullscale Vo	oltage			Conditi	on N/A		Status	pass		
Sensor Cor	mpone	nt Cell A Freq				Conditi	0 n 71.7 kHz		Status	pass		
Sensor Co	mpone	nt Cell A Noise	Э			Conditi	on Not tested		Status	pass		
Sensor Co	mpone	nt Cell A Flow				Conditi	on 0.52 lpm		Status	pass		
Sensor Co	mpone	nt Cell A Pres	sure			Conditi	on 723.7 mmHg		Status	pass		
Sensor Con	mpone	nt Cell A Tmp.				Conditi	on 36.1 C		Status	pass		
Sensor Cor	mpone	nt Cell B Freq.				Conditi	on Not tested		Status	pass		
Sensor Co	mpone	ent Cell B Noise	e			Conditi	on Not tested		Status	pass		
Sensor Con	mpone	ent Cell B Flow				Conditi	on 0.73 lpm		Status	pass		
Sensor Con	mpone	nt Cell B Press	sure			Conditi	on 723.1 mmHg		Status	pass		
Sensor Con	mpone	nt Nafion drye	r installe	ed		Conditi	on False		Status	pass		
Sensor Con	mpone	nt System Me	mo			Conditi	0 n		Status	pass		

Wind Speed Data Form

Mfg	Serial Number	r Tag Site	Тес	chnician	Site Visit Dat	e Parameter	Owner II)
RM Young	35866wsp	BVL130	Eri	ic Hebert	11/12/2024	Wind Speed	04408	
				Mfg Serial Number	RM Young CA04013	Paramet	er wind speed c. wind speed mo	tor (h
				Tfer ID	01255			
Prop or Cups SN	Illegible			Slope	1.00	000 Intercept	0.000	000
Prop or Cups To Prop Correction	rque 0 Facto 0.0512	0.4 to	0.4	Cert Date	7/24/2	023 CorrCoff	1.000	000
D	AS 1:	D	AS 2:					
Abs Avg Err	ow RangeHig0.05	h Range: Lo 0.26%	ow Range H	igh Range:				
Abs Max Err	0.20	1.06%						
UseDescription:	Input Device	Input RPM	Input m/s	Out V	DAS m/s	Diff/ %Diff	Diff	WsM
primary		0	0.20	0.0	0.0		-0.20	
primary		200	1.02	0.0	1.0		0.00	
primary		400	2.05	0.0	2.1		0.00	
primary		800	4.10	0.0	4.1		0.00	
primary		1200	6.14	0.0	6.1	0.00%		
primary		2400	12.29	0.0	12.3	0.00%		
primary		4000	20.48	0.0	20.5	0.00%		
primary		9400	48.13	0.0	47.6	-1.06%		
Sensor Compo	nent Condition		Conditio	Good		Status pass]
Sensor Compo	nent Prop or Cups	s Condition	Conditio	Good		Status pass]
Sensor Compo	nent Sensor Heat	er	Conditio	n N/A		Status pass]
Sensor Compo	nent Torque		Conditio	n 0.5		Status pass		
Sensor Compo	nent Sensor Plum	b	Conditio	n Plumb		Status pass]
Sensor Compo	nent 50m from tre	e dripline	Conditio	n True		Status pass]
Sensor Compo	nent obstacles >1	0x height above	e sens Conditio	n True		Status pass		1
Sensor Compo	nent System Merr	10	Conditio	n		Status pass		

Wind Direction Data Form

Sensor Component obstacles >10x height above sens Condition True

Sensor Component System Memo

Mfg	Serial Number	r Tag Site	Т	echnician	\$	Site Visit Da	te Param	eter	Owner ID)
RM Young	35866wdr	BVL130	E	Eric Hebert		11/12/2024	Wind D	Direction	04408	
				Mfg Serial Num Tfer ID	F ber	RM Young		arameter	wind direction	/heel
Vane SN: N/A	\	C. A. Align. de	eg. true:	Slope		1.0	0000 Inte	ercept	0.000	000
VaneTorque	10 to 12	<u>'</u>	-1.5	Cert Date		1/16/	2015 Cor	rCoff	1.000)00
				Mfg	ι	Jshikata	Р	arameter	wind direction	
				Serial Num	ber P	91832	Т	fer Desc.	transit	
				Te		1070				
				Tter ID	Ľ)1272				
				Slope		1.0	0000 Inte	ercept	0.000)00
				Cert Date		2/1/	2024 Cor	rCoff	1.000	000
D O Abs Avg Err Abs Max Err	AS 1: prientation Line 2.3 3	DA earity: Or 0.6	AS 2: rientation	Linearity:]					
UseDescription	TferID	Input Raw	Linearity	Output V	Outpu	ıt Deg. D	ifference	Change	Error	
primary	01264	0		0.000		1	1	44.6	*############	
primary	01264	45	\checkmark	0.000	2	6	1	44.6	############	
primary	01264	90		0.000	ç	91	1	45.1	###########	
primary	01264	135		0.000	1	37	2	45.6	############	
primary	01264	180		0.000	1	82	2	45.4	###########	
primary	01264	225		0.000	2	27	2	44.5	-0.5	
primary	01264	270		0.000	2	73	3	46.3	*######################################	
primary	01264	315		0.000	3	17	2	43.9	##########	
primary	01272	3		0.000		6	3		3	
primary	01272	91		0.000		04	3		3	
primary	01272	181		0.000	1	81 74	0		0	
primary	01272	2/1		0.000	2	/4	3		3	1
Sensor Compo	nent Sensor Heate	er	Condi	tion N/A			Status	pass		
Sensor Compo	nent Condition		Condi	tion Good			Status	pass]
Sensor Compo	nent Sensor Plum	b	Condi	tion Plumb			Status	pass		
Sensor Compo	nent Torque		Condi	tion 12			Status	pass]
Sensor Compo	nent Mast		Condi	tion Good			Status	pass		
Sensor Component Vane Condition		Condi	ondition Good			Status	pass]	
Sensor Component 50m from tree dripline			Condi	ondition True				1s pass		

Condition

Status pass

Status pass

Temperature Data Form

Mfg	Serial Number	Tag Site	Т	echni	ician	Site V	isit Date	Param	eter	Owner ID	
RM Young	6704	BVL130	I	Eric H	ebert	11/12	/2024	Temper	ature	04690	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Ser	ial Number	61960	02	Tf	er Desc. R	D	
				Tfe	er ID	01224		7			
DAS 1:	DAS	2:		Slo	ре		1.0000	0 Inte	rcept	0.00046	
Abs Avg Err	Abs Max Err Abs	Avg Err Abs	Max Err	Cer	rt Date		9/26/202	3 Cor	rCoff	1.00000	
0.34	0.50			L							
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary T	emp Low Range	0.14	0.14		0.000		0.0	6	С	-0.08	
primary T	emp Mid Range	28.58	28.58		0.000		28.1	3	С	-0.45	
primary T	emp High Range	47.60	47.60		0.000		47.1	0	С	-0.5	
Sensor Comp	onent Shield		Condi	tion N	loderately cle	an		Status	pass		
Sensor Comp	onent Blower		Condi	tion F	unctioning			Status	pass		
Sensor Comp	onent Properly Sited		Condi	tion F	Properly sited			Status	pass		
Sensor Comp	onent System Memo		Condi	tion				Status	pass		

2 Meter Temperature Data Form

Calc. Difference

Mfg	Serial Number	Tag Site	Т	echnicia	n	Site Vis	it Date	Paramete	er	Owner ID
RM Young	031778	BVL130	E	Eric Hebe	ert	11/12/2	2024	Temperati	ure2meter	07287
				Mfg		Fluke		Para	meter Tem	perature
				Serial	Number	6196002	2	Tfer	Desc. RTD	
				Tfer I	D	01224				
DAS 1:	DA	S 2:		Slope			1.0000	0 Interce	ept	0.00046
Abs Avg Err Al	bs Max Err Ab	s Avg Err Ab	s Max Err	Cert I	Date		9/26/202	3 CorrC	off	1.00000
1.95	3.05									
UseDescription	Test type	InputTmpRaw	InputTmpCc	orrected	OutputTm	pSignal	OutputS	ignalEng	OSE Unit	Difference
primary	Femp Low Rang	0.14		0.14		0.000		-0.57	С	-0.71
primary 7	Temp Mid Range	28.58		28.58		0.000		26.50	С	-2.08
primary 7	Temp High Rang	47.60		47.60		0.000		44.55	С	-3.05
Sensor Compon	ent Shield		Condit	tion Mod	lerately cle	an		Status pa	ass	
Sensor Compon	ent Properly Site	d	Condit	tion Prop	perly sited			Status pa	ass	
Sensor Compon	ent Blower		Condit	tion Fun	ctioning			Status pa	ass	
Sensor Compon	ent System Mem	0	Condit	tion				Status pa	ass	

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	unknown	BVL130	Eric Hebert	11/12/2024	Shelter Temperature	none
DAS 1:	DAS 2: Max Frr Abs Avg	Fre Abe May Fre	Mfg	Fluke	Parameter She	Iter Temperature
0.15	0.26		Serial Number	6196002	Tfer Desc. RTD)
			Tfer ID	01224		
			Slope	1.0000	0 Intercept	0.00046
			Cert Date	9/26/202	23 CorrCoff	1.00000

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference		
primary	Temp Mid Range	26.63	26.63	0.000	26.7	С	0.03		
primary	Temp Mid Range	27.03	27.03	0.000	26.8	С	-0.26		
Sensor Component System Memo Condition Status pass									

Humidity Data Form

Mfg	Ifg Serial Number Tag Site		Technician			Site Visit Date Parameter			neter	Owner ID			
Vaisala	850853	BVL	130		Eric Hebert		11/12/	2024	Relativ	e Humidity	07117		
					Mfg Serial Nu Tfer ID	mber	Dwyer NV030 NV029	2029	P T	arameter Re	lative Humidity ychrometer		
	DAS 1:		DAS 2:		Slope Cert Date	e		0.9535 3/15/202	5 Inte	ercept rrCoff	7.38438]	
					Mfg		AZ Ins	truments	P	arameter Re	lative Humidity		
					Serial Nu	mber	10325	189	Т	fer Desc. Psy	ychrometer		
					Tfer ID		01223						
					Slope			1.0873	8 Inte	ercept	-5.00194		
					Cert Date	e		2/13/202	24 Co	rrCoff	0.99990]	
	Low Range:	High Range:	Low Ra	nge:	High Range	e:							
Abs Avg Err	1.9	2.9											
Abs Max Err	1.9	2.9											
UseDesc.	Test type	Device	Input F	RH	GTL Raw	RH	Corr.	DAS V	olts	DAS %RH	Difference		
primary	RH Low Range	Psychrometer	63.0		63.0	58	3.3	0.00	0	56.4	-1.9		
primary	RH Low Range	Psychrometer	70.1		70.1	65	5.8	0.00	0	63.9	-1.9		
primary	RH High Range	Psychrometer	100.0)	100.0	97	'.1	0.00	0	100.0	2.9		
Sensor Con	<mark>1ponent</mark> RH Filter			Cond	l <mark>ition</mark> Clean				Statu	s pass			
Sensor Con	ponent Shield			Cond	l <mark>ition</mark> Clean				Statu	s pass			
Sensor Component Blower			Condition N/A					Statu	s pass				
Sensor Component Blower Status Switch			Condition N/A					Status pass					
Sensor Component System Memo				Condition						Status pass			

Solar Radiation Data Form

Mfg	Serial Number	r Tag Site	Т	echnician	Site Visit Dat	e Param	eter O	wner ID
Licor	PY67718	BVL130	E	Eric Hebert	11/12/2024	Solar R	adiation 06	829
Mfg	RM Young			Mfg	Eppley	Pa	arameter solar ra	diation
SN/Owner ID	none (06620		Serial Numbe	r 10765	T	fer Desc. SR tran	sfer translato
Parameter:	Solar Radiation Tra	anslator		Tfer ID	01246			
DAS 1:	DA	AS 2:		Slope	1.00	000 Inte	ercept	0.00000
% Diff of Avg	%Diff of Max %	Diff of Avg: %	Diff of Max	Cert Date	2/8/2	024 Cor	rCoff	1.00000
				Mfg	Eppley	Pa	<mark>arameter</mark> solar ra	diation
				Serial Numbe	r 34341F3	T	fer Desc. SR tran	sfer sensor
				Tfer ID	01245			
				Slope	1.00	000 Inte	ercept	0.00000
				Cert Date	2/8/2	024 Cor	rCoff	1.00000
3.6%	3.7%	0.0%	0.0%	L				
UseDescription	Measure Date	MeasureTime	Tfer Ra	w Tfer C	orr DAS	w/m2	PctDifference	
primary	11/12/2024	12:00	348	348	32	26	-6.2%	ó
primary	11/12/2024	13:00	494	494	4′	75	-3.7%	ó
primary	11/12/2024	14:00	262	362	34	18	-4.0%	ó
primary	11/12/2024	15:00	317	317	30)8	-2.8%	ó
primary	11/12/2024	16:00	159	159	10	52	2.2%	ó
Sensor Comp	onent Sensor Clear	n	Condit	tion Clean		Status	pass	
Sensor Comp	onent Sensor Leve	l	Condit	tion Level		Status	pass	
Sensor Comp	onent Properly Site	d	Condit	tion Properly site	d	Status	pass	
Sensor Comp	onent System Merr	10	Condit	tion		Status	pass	

Precipitation Data Form

Mfg	Se	erial Number Tag	Site	,	Тес	chnician		Site	Visit Date	Parame	eter		Owner ID
Texas Electror	nics il	legible	BVL130		Eri	ic Hebert		11/	12/2024	Precipita	atior	n	06334
						Mfg		PMF)	Pa	ran	neter P	recipitation
DAS 1:		DAS 2:				Serial Num	ıber	EW-	06134-50	Tf	er I	Desc. 2	50ml graduate
A Avg % Diff	f: A Ma	x % Dif A Avg %	Diff A N	Max % Dif		Tfer ID		0125	50				
						Slope			1.0000	00 Inter	rcep	ot [0.00000
						Cert Date			9/5/200	05 Corr	:Co	ff	1.00000
UseDesc.	Test t	ype TferVolume	Iteration	TimePerT	ip	Eq.Ht	DAS	5 eng	Eq.HtUnit	OSE Ur	nit [TferUni	its PctDifference
primary	test 1	231.5	1	10 sec		0.50	0.	50	in	in		ml	0.0%
primary	test 2	231.5	2	10 sec		0.50	0.	49	in	in		ml	-2.0%
Sensor Con	nponent	Funnel Clean		Cond	litio	n Clean				Status	pas	s	
Sensor Con	nponent	Properly Sited		Cond	l <mark>iti</mark> o	n See com	nents			Status	pas	s	
Sensor Con	ıponent	Gauge Drain Scree	n	Cond	litio	n Installed				Status	pas	s	
Sensor Con	ıponent	Condition		Cond	litio	on Good				Status	pas	s	
Sensor Con	ıponent	Gauge Screen		Cond	litio	n Installed				Status	pas	s	
Sensor Con	nponent	Gauge Clean		Cond	litio	n Clean				Status	pas	s	
Sensor Con	ıponent	Level		Cond	litio	n Level				Status	pas	s	
Sensor Com	iponent	Sensor Heater		Cond	litio	n Functioni	ng			Status	pas	s	
Sensor Con	nponent	System Memo		Cond	litio	on				Status	pas	s	

Surface Wetness Data Form

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID	
RM Young	none	BVL130	Eric Hebert	11/12/2024	Surface Wetness	07094	
			Mfg	Ohmite	Parameter SL	urface wetness	
			Serial Number	296-1200	Tfer Desc. de	ecade box	
			Tfer ID	01210			
			Slope	1.0000	00 Intercept	0.00000	
			Cert Date	1/4/201	11 CorrCoff	1.00000	

Manual Test Pass

UseDescription	Test Type	Tfer kOhms	OutputSignal	DAS eng	OutputSignalEngUnit	TferUnits	OutputSignalUnit	
primary	wet	N/A	0.000	1.04	V	N/A	V	
primary	dry	N/A	0.000	0.00	V	N/A	V	
primary	Decade box on	160	0.000	1.04	V	kOhm	V	
primary	Decade box off	170	0.000	0.00	V	kOhm	V	
Sensor Compo	nent Properly Sited	1	Condition	Properly sited	Stat	tus pass		
Sensor Compo	nent Grid Clean		Condition	Clean	Stat	t <mark>us</mark> pass		
Sensor Compo	nent Grid Angle		Condition	about 45 deg	Stat	Status pass		
Sensor Compo	nent Grid Orientation	on	Condition	North	Stat	tus pass		
Sensor Compo	nent Grid Condition	ı	Condition	Good	Stat	t <mark>us</mark> pass		
Sensor Compo	nent Grid Type		Condition	Grid without ho	les Stat	tus pass		
Sensor Compo	nent System Memo	D	Condition		Stat	us pass		

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	BVL130	Technician Eric Heb	ert Site Visit Date 11/12/2024
Shelter	Make	Shelter Model	Shelter Size
Ekto		8810 (s/n 2140-1)	640 cuft
119.042-0.71002			

Sensor Component	Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component	Conduit	Condition	N/A	Status	pass
Sensor Component	Met Tower	Condition	Fair	Status	pass
Sensor Component	Moisture Trap	Condition	Installed	Status	pass
Sensor Component	Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component	Power Cables	Condition	Good	Status	pass
Sensor Component	Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component	Rotometer	Condition	Installed	Status	pass
Sensor Component	Sample Tower	Condition	Good	Status	pass
Sensor Component	Shelter Condition	Condition	Good	Status	pass
Sensor Component	Shelter Door	Condition	Fair	Status	pass
Sensor Component	Shelter Roof	Condition	Good	Status	pass
Sensor Component	Shelter Floor	Condition	Good	Status	pass
Sensor Component	Shelter walls	Condition	Good	Status	pass
Sensor Component	Excessive mold present	Condition	Good	Status	pass
Sensor Component	Signal Cable	Condition	Fair	Status	pass
Sensor Component	Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Flow Rate	BVL130	Eric Hebert	11/12/2024	Moisture Present	Apex	3330		
The filter sample tubi	ing has drops of m	oisture in low sectio	ns outside the sh	nelter.				
Precipitation	BVL130	Eric Hebert	11/12/2024	System Memo	Texas Electronic	4686		
Objects violate the 45	5 degree rule for th	ne tipping bucket rain	n gage.					
Temperature	BVL130	Eric Hebert	11/12/2024	Accuracy High R	RM Young	4090		
When the errors for b	oth the 10 meter t	emperature sensor ar	nd the two meter	temperature sensor	are accounted for,	the resulting ca	lculated del	ta

temperature value is outside the acceptance limit.

Field Systems Comments

1 Parameter: SiteOpsProcComm

The operator reported that the filter is not always handled by using the bag as a glove, and the filter is handled with bare hands or work gloves, not laboratory gloves.

2 Parameter: SiteOpsProcedures

Ozone and NCORE sample line filters are replaced, and the sample lines are leaked tested, every 2 weeks by capping the sample inlets. The internal monitor filters are replaced every 4 weeks.

3 Parameter: SitingCriteriaCom

The site is located in an agricultural and atmospheric research center. There are crops within 50 meters.

4 **Parameter:** ShelterCleanNotes

The shelter still has a slight odor of rodent excrement, but it is improving. The shelter door does not completely seal and water enters during heavy rain. The water damage to the floor has been repaired.

5 Parameter: MetSensorComme

The tipping bucket rain gage is mounted near the meteorological tower and in violation of the 45 degree rule.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID BVL130	Technician Eric Hebert	Site Visit Date 11/12	2/2024		
Site Sponsor (agency) EPA		USGS Map	Bondville		
Operating Group	ISWS	Map Scale			
AQS #	17-019-1001	Map Date			
Meteorological Type	Climatronics				
Air Pollutant Analyzer	Ozone, IMPROVE	QAPP Latitude	40.0520		
Deposition Measurement	dry, wet, Hg	QAPP Longitude	-88.3725		
Land Use	agricultural	QAPP Elevation Meters	212		
Terrain	flat	QAPP Declination	-2.1		
Conforms to MLM	Yes	QAPP Declination Date	9/16/2005		
Site Telephone	(217) 863-2602	Audit Latitude	40.052021		
Site Address 1	Bondville Road Research Station	Audit Longitude	-88.372481		
Site Address 2		Audit Elevation	213		
County	County Champaign		-3.4		
City, State	Seymour, IL	Present			
Zip Code	61875	Fire Extinguisher 🔽	Inspected April 2024		
Time Zone	Central	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 Steps ✓			
Shelter Working Room	Make Ekto M	odel 8810 (s/n 2140-1)	Shelter Size 640 cuft		
Shelter Clean	Notes The shelter still has a slight or completely seal and water ent repaired.	lor of rodent excrement, but it is ers during heavy rain. The wate	improving. The shelter door does not er damage to the floor has been		
Site OK	Notes				
Driving Directions From (north visible	Champaign take I-57 south to exit 229, r) on CR 500E. Continue approximately 7 e in the field on the right.	oute CR 18. Go west on CR 18 I.7 miles to the Bondville Road I	approximately 2.5 miles and turn right Research Center on the left. The site is		

Fi	eld Systems Data Form			F-02058-1	500-S3-rev002
Sit	BVL130 Technician Eric Hebert		Site Visit Date	11/12/2024]
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?	🗆 Vio	plation of 45 degr	ee rule	
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:

The tipping bucket rain gage is mounted near the meteorological tower and in violation of the 45 degree rule.

Field Systems Data Form

F-02058-1500-S4-rev002

Site	e ID	BVL130	Technician E	Eric Hebert	Site Visit Date	11/12/2024	
1	Do all th conditio	e meterological sensor n, and well maintained	s appear to be in ?	ntact, in good			
2	Are all t reportin	he meteorological sens g data?	ors operational	online, and			
3	Are the	shields for the tempera	iture and RH se	nsors clean?			
4	Are the	aspirated motors work	ing?				
5	Is the so scratche	lar radiation sensor's l s?	ens clean and fr	ree of			
6	Is the su	rface wetness sensor g	rid clean and un	idamaged?			
7	Are the conditio	sensor signal and powe n, and well maintained	er cables intact, i ?	in good			
8	Are the s from the	sensor signal and powe e elements and well ma	er cable connecti intained?	ions protected			
Fi	eld Systems	Data Fo	orm		F-02058-1500-S5-rev002		
------	--	------------------------------	-----------------------------------	-------	---		
Site	e ID BVL130		Technician Eric Hebert		Site Visit Date 11/12/2024		
	Siting Criteria: A	re the pollut:	ant analyzers and deposition e	quipı	nent sited in accordance with 40 CFR 58, Appendix E		
1	Do the sample in unrestricted airfl	ets have at le ow?	ast a 270 degree arc of	✓			
2	Are the sample in	llets 3 - 15 me	eters above the ground?	✓			
3	Are the sample in and 20 meters fro	llets > 1 mete om trees?	r from any major obstruction				
	Pollutant analyze	rs and deposi	ition equipment operations an	d ma	intenance		
1	Do the analyzers condition and we	and equipme ll maintained	nt appear to be in good ?				
2	Are the analyzers reporting data?	and monitor	rs operational, on-line, and	✓			
3	Describe ozone sa	mple tube.			1/4 teflon by 12 meters		
4	Describe dry dep	sample tube.			3/8 teflon by 12 meters		
5	Are in-line filters indicate location)	used in the o	zone sample line? (if yes	✓	At inlet only		
6	Are sample lines obstructions?	clean, free of	kinks, moisture, and				
7	Is the zero air su	oply desiccan	t unsaturated?	✓			
8	Are there moistu	re traps in th	e sample lines?		flow, SO2, and CO line only		
9	Is there a rotome clean?	ter in the dry	deposition filter line, and is it		Clean and dry		

Fi	eld Sy	stems Data Fo	orm				F	-02058-15	00-S6-rev002
Site	e ID	BVL130	Technician	Eric Hebert		Site Visi	t Date 11/12/2	2024	
	DAS, se	nsor translators, and p	beripheral equip	oment operation	<u>is an</u>	id maintenai	<u>1ce</u>		
1	Do the l well ma	DAS instruments appea intained?	ar to be in good	condition and	✓				
2	Are all t modem,	the components of the backup, etc)	DAS operationa	al? (printers,	✓				
3	3 Do the analyzer and sensor signal leads pass through lightning protection circuitry?					Met sensors	only		
4	Are the well ma	signal connections pro intained?	otected from the	weather and					
5	Are the	signal leads connected	to the correct I	DAS channel?					
6	Are the grounde	DAS, sensor translatored?	rs, and shelter p	oroperly					
7	Does the	e instrument shelter ha	ave a stable pow	er source?	✓				
8	Is the in	strument shelter temp	erature control	led?					
9	Is the m	et tower stable and gro	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	grounded?						
11	Tower o	comments?							

Fie	ld Systems Dat	ta Fo	rm				F-02	2058-	·1500-\$	87-rev002
Site	ID BVL130		Techi	nician Eric I	Hebert	Site Visit Date 11	1/12/2024	ļ		
Do	ocumentation									
De	bes the site have the req	uired in	strume	nt and equir	oment manuals?					
		Yes	No	N/A			Yes	No	N/A	
Wind	l speed sensor	\checkmark			Data logger		\checkmark			
Wind	l direction sensor	\checkmark			Data logger				\checkmark	
Tem	perature sensor	\checkmark			Strip chart 1	recorder			\checkmark	
Relat	tive humidity sensor		✓		Computer		\checkmark			
Solar	radiation sensor	\checkmark			Modem			\checkmark		
Surfa	ace wetness sensor		\checkmark		Printer			\checkmark		
Wind	l sensor translator				Zero air pur	np		\checkmark		
Tem	perature translator				Filter flow p	ump	\checkmark			
Hum	idity sensor translator				Surge protec	ctor			\checkmark	
Solar	radiation translator		\checkmark		UPS			\checkmark		
Tippi	ing bucket rain gauge	\checkmark			Lightning p	rotection device			\checkmark	
Ozon	e analyzer	\checkmark			Shelter heat	er		\checkmark		
Filter	r pack flow controller	\checkmark			Shelter air c	onditioner		\checkmark		
Filter	r pack MFC power sup	ply 🗌		\checkmark						
I	Does the site have the re	auired	and mos	st recent OC	documents and r	eport forms?				
_		Pre	sent				Curre	nt		
Statio	on Log	110						,iit		
SSRI	R Start									
Site (Ons Manual			Jay 2010						
HAS	P			May 2019						
Field	- Ons Manual			viay 2019						
Calib	oration Reports									
Ozon	e z/s/n Control Charts									
Preve	entive maintenance sch	edule								
1	Is the station log prope	rly comj	pleted d	uring every	site visit? 🗸					
2	Are the Site Status Rep current?	ort For	ms bein	g completed	and 🔽					
3	Are the chain-of-custod sample transfer to and	ly forms from lai	proper b?	ly used to d	ocument 🔽					
4	Are ozone z/s/p control current?	charts J	properly	completed	and 🗌 Cor	ntrol charts not used	d			
D	de envedditionel1		(h ata-	uanh an d-i	(al. :6		1: . 4 . J	a haara		en footenen

Field Systems Data Form

BVL130 Technician Eric Hebert Site Visit Date 11/12/2024 Site ID Site operation procedures Trained by previous operator Has the site operator attended a formal CASTNET training 1 course? If yes, when and who instructed? 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed? Is the site visited regularly on the required Tuesday ✓ 3 schedule? \checkmark Are the standard CASTNET operational procedures being 4 flollowed by the site operator? Is the site operator(s) knowledgeable of, and able to perform 5 the required site activities? (including documentation)

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

QC Check Performed

Frequency

Multipoint Calibrations	\checkmark	Semiannually
Visual Inspections	\checkmark	Daily
Translator Zero/Span Tests (climatronics)		N/A
Manual Rain Gauge Test	\checkmark	Weekly
Confirm Reasonableness of Current Values	\checkmark	Weekly
Test Surface Wetness Response	\checkmark	Weekly

Frequency

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

QC	Check	Perf	ormed
χv	Chech		/I IIICu

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests Automatic Precision Level Tests Manual Precision Level Test Analyzer Diagnostics Tests In-line Filter Replacement (at inlet) In-line Filter Replacement (at analyze Sample Line Check for Dirt/Water **Zero Air Desiccant Check**

Semiannually	
Daily	
As needed	
Daily	
As needed	
Weekly	
Every 2 weeks	
N/A	
Weekly	
Weekly	

- 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?

	Unknown
✓	
✓	SSRF, call-in

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:

Ozone and NCORE sample line filters are replaced, and the sample lines are leaked tested, every 2 weeks by capping the sample inlets. The internal monitor filters are replaced every 4 weeks.

Compliant

Compliant

 \checkmark

 \checkmark

 \checkmark

 \checkmark

 \checkmark

 \checkmark

F-02058-1500-S8-rev002

Field Systems Data Form							F-02058-1500-S9-rev002				
Site	e ID	BVL130	Technic	ian	Eric Hebert		Site Visit Date	e 11/12/2024			
	<u>Site ope</u>	ration procedures									
1	Is the fil	lter pack being changed ev	very Tu	esda	ay as scheduled	? ☑	Filter changed mor	rinings			
2	Are the correctl	Site Status Report Forms y?	being o	comj	pleted and filed	✓					
3	Are data	a downloads and backups ed?	being J	oerfo	ormed as		No longer required				
4	Are gen	eral observations being m	ade an	d rec	corded? How?	✓	SSRF				
5	Are site supplies on-hand and replenished in a timely fashion?				✓						
6	Are sam	ple flow rates recorded? I	How?			✓	SSRF, call-in				
7	Are sam fashion?	ples sent to the lab on a re	egular	sche	dule in a timely						
8	Are filte and ship	ers protected from contam oping? How?	ination	dur	ring handling	✓	uses bag as glove				
9	Are the operation	site conditions reported re ons manager or staff?	gularl	y to 1	the field	✓					
QC	Check P	erformed		Free	quency			Compliant			
N	/Iulti-poir	nt MFC Calibrations	\checkmark	Sem	niannually						
F	low Syste	em Leak Checks	\checkmark	Wee	ekly			\checkmark			
F	ilter Pac	k Inspection									
Flow Rate Setting Checks						\checkmark					
Visual Check of Flow Rate Rotometer Weekly					\checkmark						
Ι	n-line Fil	ter Inspection/Replacemer	nt 🗹	Sem	niannually			\checkmark			
S	ample Li	ine Check for Dirt/Water	\checkmark	Wee	ekly			\checkmark			
Prov	ido onv o	dditional evaluation (nh	otograj	հ թ	r skatch if naca	scory) regarding condit	tions listed above o	r any other features		

The operator reported that the filter is not always handled by using the bag as a glove, and the filter is handled with bare hands or work gloves, not laboratory gloves.

Field Systems Data Form

BVL130

F-02058-1500-S10-rev002

Site ID

Techn

Technician Eric Hebert

Site Visit Date 11/12/2024

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
со	Teledyne	T300U	477	000875
DAS	Campbell	CR3000	2539	000424
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CAB18	060300019995	04860
Flow Rate	Apex	AXMC105LPMDPC	unknown	000604
Infrastructure	Infrastructure	none	none	none
Met tower	Climatronics	14 inch taper	none	02738
Modem	Digi	LR54	Illegible	07173
Noy	Teledyne	T200U	110	000805
Ozone	ThermoElectron Inc	49i A1NAA	1105347307	000738
Ozone Standard	ThermoElectron Inc	49i A3NAA	0622717857	000219
Precipitation	Texas Electronics	TR-525i-HT	illegible	06334
Relative Humidity	Vaisala	HMP45A	850853	07117
Sample Tower	Aluma Tower	B	unknown	000182
Shelter Temperature	Campbell	107-L	unknown	none
Shield (10 meter)	RM Young	Aspirated 43408	none	06206
Shield (2 meter)	RM Young	Aspirated 43408	none	06166
Siting Criteria	Siting Criteria	1	None	None
SO2	Teledyne	T100U	94	000787
Solar Radiation	Licor	LI-200	PY67718	06829
Solar Radiation Translator	RM Young	70101-X	none	06620
Surface Wetness	RM Young	58101	none	07094
Temperature	RM Young	41342	6704	04690
Temperature2meter	RM Young	41342	031778	07287
Wind Direction	RM Young	AQ05305	35866wdr	04408
Wind Speed	RM Young	AQ05305	35866wsp	04408
Zero air pump	Teledyne	701H	576	000759
Zero air pump	Werther International	PC70/4	000836218	06926

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number					
SAL	SAL133-Eric Hebert-11/15/2024										
1	11/15/2024	Computer	Dell	07011	Inspiron 15	Unknown					
2	11/15/2024	DAS	Campbell	000351	CR3000	2129					
3	11/15/2024	Elevation	Elevation	None	1	None					
4	11/15/2024	Filter pack flow pump	Thomas	00765	107CA110	0000141					
5	11/15/2024	Flow Rate	Арех	000547	AXMC105LPMDPCV	50743					
6	11/15/2024	Infrastructure	Infrastructure	none	none	none					
7	11/15/2024	Modem	Digi	07206	LR54	unknown					
8	11/15/2024	Ozone	ThermoElectron Inc	000622	49i A1NAA	1009241785					
9	11/15/2024	Ozone Standard	ThermoElectron Inc	000371	49i A3NAA	0726124692					
10	11/15/2024	Sample Tower	Aluma Tower	none	В	AT-51065-5-G-A					
11	11/15/2024	Shelter Temperature	Campbell	none	107-L	none					
12	11/15/2024	Siting Criteria	Siting Criteria	None	1	None					
13	11/15/2024	Temperature	RM Young	06410	41342	14043					
14	11/15/2024	Zero air pump	Werther International	06876	C 70/4	000814286					

DAS Data Form

DAS Time Max Error: 0.02

Mfg Serial Number		mber Sit	e .	Fechnician	Site Visit Date	Parameter	Use Desc.
Campbell	2129	SA	AL133	Eric Hebert	11/15/2024	DAS	Primary
Das Date:	11/15/2024 12:02:07	Audit Date Audit Time	e 11/15/2024 e 12:02:06	Mfg Serial Number	Datel	Parameter Tfer Desc.	DAS Source generator (D
Low Channel:	320	Audit Day High Chann	1el:	Tfer ID	01320		· · · · · ·
Avg Diff: 0.0000	0.0000	Avg Diff: 0.000	Max Diff: 00 0.0000	Slope	1.0000	0 Intercept	0.00000
		J <u>L</u>		Cert Date	2/13/201	2 CorrCoff	1.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740135	Tfer Desc.	DVM
				Tfer ID	01311		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	24 CorrCoff	1.00000
Channel	Input D	VM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.000	0 V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	iber Tag S	Site	Тес	chnician	Site Visit I	Date Paran	neter	Owner ID
Apex	50743		SAL133	Eri	ic Hebert	11/15/2024	Flow F	Rate	000547
					Mfg	BIOS	P	arameter Flow	w Rate
					Serial Number	148613	1	fer Desc. BIO	IS 220-H
					Tfer ID	01421			
					Slope	1.	00871 Int	ercept	0.00110
					Cert Date	2/1	6/2024 Co	rrCoff	0.99999
DAS 1:		DAS 2:		_	Cal Factor Z	ero	0.	01	
A Avg % Diff:	A Max % Dif	A Avg %l	Diff A Max	x % Dif	Cal Factor F	ull Scale	0.	97	
0.89%	1.32%				Rotometer R	eading:	1	1.5	
Desc.	Test type	Input l/m	Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	PctDifference
primary	pump off	0.000	0.000	0.01	0.000	0.02	l/m	l/m	
primary	leak check	0.000	0.000	0.01	0.000	0.08	l/m	l/m	
primary	test pt 1	1.502	1.490	1.55	0.000	1.50	l/m	l/m	0.67%
primary	test pt 2	1.502	1.490	1.55	0.000	1.50	l/m	l/m	0.67%
primary	test pt 3	1.530	1.520	1.55	0.000	1.50	l/m	l/m	-1.32%
Sensor Comp	onent Leak Tes	t		Conditio	n		Statu	<mark>s</mark> pass	
Sensor Comp	onent Tubing C	ondition		Conditio	Good		Statu	<mark>s</mark> pass	
Sensor Comp	onent Filter Pos	sition		Conditio	Good		Statu	s pass	
Sensor Comp	onent Rotomete	er Conditior	1	Conditio	Clean and dry		Statu	s pass	
Sensor Comp	onent Moisture	Present		Conditio	No moisture pr	resent	Statu	s pass	
Sensor Comp	onent Filter Dis	tance		Conditio	n 4.5 cm		Statu	<mark>s</mark> pass	
Sensor Comp	onent Filter Dep	oth		Conditio	3.0 cm		Statu	<mark>s</mark> pass	
Sensor Comp	onent Filter Azi	muth		Conditio	270 deg		Statu	<mark>s</mark> pass	
Sensor Comp	onent System N	/lemo		Conditio	on		Statu	s pass	

Ozone Data Form

Mfg		Serial Numb	er Tag	Site		Te	chnician	Site Visit Date	Param	eter	Owner ID	
ThermoElect	tron Inc	1009241785		SAL133	•	Er	ic Hebert	11/15/2024	Ozone		000622	
Slope: [Intercept [CorrCoff: [-	1.02273 Slo 0.59647 Int 1.00000 Corr	pe: ercept rrCoff:		0.00000 0.00000 0.00000		Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Pa	tramete fer Desc	r ozone	tan
DAS 1.		Г	148 2.					0.000			0.047	4.0
A Avg % D	iff: A N	L Max % Dif A	AS 2.	Diff A	Max %	∕₀ Dif	Slope	0.9997	⁰ Inte	rcept	0.317	10
0.0)%	0.0%					Cert Date	2/14/202	24 Cor	rCoff	1.000	00
UseDescri	ption	ConcGroup	Tfe	r Raw	Tf	er Corr	Site	Site Unit	RelPer	rDif	AbsDif	
primar	y	1	0	.40		0.08	-0.52	ppb			-0.6	
primar	y	2	14	4.68	1	14.37	14.02	ppb			-0.35	
primar	y	3	3.	3.25	3	32.96	33.20	ppb		0.73		
primar	y w	4	10	8.37	(08.12	69.11	ppb		1.44		
Sensor Co	y ompone	ent Audit Press	sure	0.20	<u> </u>	Condition	0n 744 mmHg	ppo	Status	pass		
Sensor Co	ompone	ent 26.6 degre	e unobs	tructed ru	ıle	Conditi	on True		Status	pass		
Sensor Co	ompone	ent Tree dewli	ne >10m	or below	/ inlet	Conditi	on True		Status	pass		
Sensor Co	ompone	ent ADT 1000-	10000 v	ehicles fu	urther t	Conditi	on True		Status	pass		
Sensor Co	ompone	ent ADT <1000) vehicle	s further	than 5	Conditi	on True		Status	pass		
Sensor Co	ompone	ent Sample Tra	ain			Conditi	on Good		Status	pass		
Sensor Co	ompone	ent Inlet Filter	Conditio	n		Conditi	on Clean		Status	pass		
Sensor Co	ompone	ent Offset				Conditi	on 0.10		Status	pass		
Sensor Co	ompone	ent Span				Conditio	on 1.017		Status	pass		
Sensor Co	ompone	ent Zero Volta	ge			Conditio	on N/A		Status	pass		
Sensor Co	ompone	ent Fullscale V	oltage			Conditi	on N/A		Status	pass		
Sensor Co	ompone	ent Cell A Fred	1.			Conditi	on 107.4 kHz		Status	pass		
Sensor Co	ompone	ent Cell A Nois	se			Conditio	on Not tested		Status	pass		
Sensor Co	ompone	ent Cell A Flow	v			Conditi	on 0.62 lpm		Status	pass		
Sensor Co	ompone	ent Cell A Pres	ssure			Conditio	on 710.3 mmHg		Status	pass		
Sensor Co	ompone	ent Cell A Tmp).			Conditio	on 32.0 C		Status	pass		
Sensor Co	ompone	ent Cell B Free] .			Condition	on 86.1 kHz		Status	pass		
Sensor Co	ompone	ent Cell B Nois	e			Conditio	on Not tested		Status	pass		
Sensor Co	ompone	ent Cell B Flow	V			Conditio	on 0.64 lpm		Status	pass		
Sensor Co	ompone	ent Cell B Pres	sure			Conditio	on 709.4 mmHg		Status	pass		
Sensor Co	ompone	ent Nafion drye	er installe	ed		Conditi	on True		Status	pass		
Sensor Co	ompone	ent System Me	emo			Conditio	0 n		Status	pass		

Temperature Data Form

Mfg	Serial Number	Tag Site	ite T		Technician		isit Date	Paramo	eter	Owner ID	
RM Young	14043	SAL133		Eric H	ebert	11/15	/2024	Temper	ature	06410	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Ser	rial Number	61960	02	Tf	er Desc. R	ſD	
				Tfe	er ID	01224]			
DAS 1:	DAS	S 2:		Slo	pe		1.0000	0 Inte	rcept	0.0004	16
Abs Avg Err	Abs Max Err Abs	Avg Err Abs	Max Err	Cer	rt Date		9/26/202	3 Cori	rCoff	1.0000	00
0.43	3 0.73										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	0.19	0.19		0.000		0.3	3	С	0.09	
primary	Temp Mid Range	23.74	23.74	ŀ	0.000		23.	3	С	-0.46	
primary	Temp High Range	46.01	46.01		0.000		45.	3	С	-0.73	
Sensor Con	nponent Shield		Condi	tion C	Clean			Status	pass		
Sensor Con	nponent Blower		Condi	tion N	I/A			Status	pass		
Sensor Component Properly Sited			Condi	Condition Properly sited				Status	pass		
Sensor Component System Memo				tion				Status	pass		

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	SAL133	Eric Hebert	11/15/2024	Shelter Temperature	none
DAS 1:	DAS 2:	Fun Abs May Fun	Mfg	Fluke	Parameter She	Iter Temperature
1.03	1.06		Serial Number	6196002	Tfer Desc. RTD)
			Tfer ID	01224		
			Slope	1.0000	0 Intercept	0.00046
			Cert Date	9/26/202	23 CorrCoff	1.00000

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	19.75	19.75	0.000	20.8	С	1.06
primary	Temp Mid Range	19.79	19.79	0.000	20.8	С	1
Sensor Component System Memo			Condition		Status	pass	

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition 20 m	Status Fail
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition 20 m	Status Fail
Sensor ComponentLimited agriculture operationsSensor ComponentMajor industrial sourceSensor ComponentSecondary road < or = 100 per daSensor ComponentSecondary road >100 vehicles/daSensor ComponentSmall parking lotSensor ComponentSystem MemoSensor ComponentMajor highway, airport, or rail yardSensor ComponentIntensive agriculture operations	Condition20 mCondition	StatusFailStatuspassStatuspassStatuspassStatuspassStatuspassStatuspassStatuspassStatuspassStatuspassStatuspassStatuspass

Infrastructure Data For

Site ID	SAL133	Technician Eric Hel	pert Site Visit Date 11/15/2024
Shelter	Make	Shelter Model	Shelter Size
Ekto		8810	640 cuft

Sensor Component Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component Conduit	Condition	N/A	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Good	Status	pass
Sensor Component Shelter Condition	Condition	Fair	Status	pass
Sensor Component Shelter Door	Condition	Fair	Status	pass
Sensor Component Shelter Roof	Condition	Fair	Status	pass
Sensor Component Shelter Floor	Condition	Fair	Status	pass
Sensor Component Shelter walls	Condition	Fair	Status	pass
Sensor Component Excessive mold present	Condition	Fair	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Flow Rate	SAL133	Eric Hebert	11/15/2024	Accuracy	Apex	3760		
An excessive amount of f	luctuation in the	signal recorded by	the DAS for this	s variable was obser	rved during the au	dit.		

Field Systems Comments

1 Parameter: SiteOpsProcedures

The ozone inlet filter is replaced and a zero/span/precision test is performed approximately monthly. The SSRF indicates that the ozone inlet filter "outside" filter is changed every week because "outside" filter is confused with the filter pack. This is not the only observation of incorrect documentation for the ozone inlet filter. It is suggested that the SSRF be changed to replace "outside" filter with "ozone inlet filter".

2 Parameter: SitingCriteriaCom

The site is located next to a field usually planted with corn or soy beans.

3 Parameter: ShelterCleanNotes

The shelter is in fair condition, ants are present. It is somewhat clean, neat, and well organized.

4 Parameter: MetOpMaintCom

The temperature signal cable is showing signs of wear.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID SAL133			Technician	Technician Eric Hebert		Site Visit I	Date 11/1	5/2024		
Site Spanson (agange)					USC	S Man		Lagro		
Site Sponsor (agency)						Seele				
Operating Group	þ	orivate) Scale				
AQS #	1	18-169-99	169-9991			o Date				
Meteorological Type	C	Climatroni	cs							
Air Pollutant Analyze	r (Ozone			QA	PP Latitude				
Deposition Measurem	ent	dry			QA	PP Longitude				
Land Use	a	agriculture)		QA	PP Elevation N	Meters			
Terrain	f	lat			QA	PP Declination	n			
Conforms to MLM	ľ	Yes			QA	PP Declination	n Date			
Site Telephone	(260) 782	-2428		Aud	lit Latitude				40.816038
Site Address 1	ŀ	lamilton l	Road		Aud	it Longitude				-85.661407
Site Address 2					Aud	lit Elevation				250
County	V	Nabash			Aud	it Declination	l	-5		
City, State	L	_agro, IN				I	Present			
Zip Code	4	46941			Fire	Extinguisher		New in 2015		
Time Zone	E	Eastern			Firs	t Aid Kit				
Primary Operator					Safe	ety Glasses				
Primary Op. Phone #					Safe	ety Hard Hat				
Primary Op. E-mail					Clir	nbing Belt				
Backup Operator					Secu	ırity Fence				
Backup Op. Phone #					Secu	ire Shelter				
Backup Op. E-mail					Stal	ole Entry Step	s V			
Shelter Working Room	m ☑ 🛛	Make	Ekto		Model	8810		Shelter Size	640 cuft	
Shelter Clean		Notes	The shelter is ir	n fair conditio	on, ants a	re present. It i	s somewh	at clean, neat, ar	nd well orgar	nized.
Site OK		Notes								
Driving Directions	From H several next_roa	untington miles to s ad, Hamili	, IN take route S 750 E, turn le ton or 725E. Th	9 south a fev ft (south). T ne site is abo	v miles to urn right out 1 mile	Division Road (west) at the fir on the right.	. Turn rig st intersec	ht (west) on Divis ction (E 50 S). Tu	sion and con urn left (sout	tinue h) at the

Fie	eld Sys	stems Data Fo	orm				F-02058 -	1500-S3-rev002
Site	e ID	SAL133	Technician	Eric Hebert		Site Visit Date	11/15/2024	
1	Are wind being inf	l speed and direction luenced by obstructio	sensors sited so ons?	as to avoid	✓	N/A		
2	Are wind (i.e. wind horizont tower in	l sensors mounted so l sensors should be m ally extended boom > to the prevailing wind	as to minimize ounted atop the 2x the max dian l)	tower effects? e tower or on a meter of the		N/A		
3	Are the t	ower and sensors plu	mb?		✓	N/A		
4	Are the t avoid rad	emperature shields p diated heat sources su	ointed north or Ich as buildings	positioned to , walls, etc?	✓			
5	Are temp condition surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped water should be avoi	sors sited to avo y sensors should l. Ridges, hollov ded)	id unnatural be natural vs, and areas of				
6	Is the sol	ar radiation sensor p	lumb?		✓	N/A		
7	Is it sited	l to avoid shading, or	any artificial o	r reflected light?		N/A		
8	Is the rai	in gauge plumb?			✓	N/A		
9	Is it sited towers, e	l to avoid sheltering e tc?	ffects from buil	dings, trees,	✓	N/A		
10	Is the sur facing no	rface wetness sensor s orth?	sited with the g	rid surface	✓	N/A		
11	Is it incl	ined approximately 3	0 degrees?		✓	N/A		
						L		

Field Systems Data Form

F-02058-1500-S4-rev002

Site	e ID	SAL133	Technician E	ric Hebert		Site Visit Date 11/15/2024
1	Do all th condition	e meterological senso n, and well maintained	rs appear to be ir d?	ntact, in good	✓	Temperature only
2	Are all t reportin	he meteorological sens g data?	sors operational o	online, and		Temperature only
3	Are the	shields for the temper	ature and RH sei	nsors clean?	✓	
4	Are the	aspirated motors worl	king?			N/A
5	Is the sol scratche	lar radiation sensor's s?	lens clean and fro	ee of		N/A
6	Is the su	rface wetness sensor g	grid clean and un	damaged?	✓	N/A
7	Are the s condition	sensor signal and pow n, and well maintained	er cables intact, i d?	in good	✓	Signs of wear
8	Are the s from the	sensor signal and pow elements and well ma	er cable connecti aintained?	ions protected		

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 signal cable is showing signs of wear.

Field Systems Data Form						F-02058-1500)-S5-rev002
Site	e ID	SAL133	Technician	Eric Hebert		Site Visit Date 11/15/2024	
	<u>Siting C</u>	Criteria: Are the polluta	ant analyzers an	id deposition eq	<u>uipn</u>	nent sited in accordance with 40 CFR 58, A	Appendix E
1	Do the s unrestri	sample inlets have at le icted airflow?	ast a 270 degree	e arc of			
2	Are the	sample inlets 3 - 15 me	eters above the g	ground?	✓		
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?			or obstruction,			
	<u>Pollutar</u>	nt analyzers and deposi	ition equipment	operations and	mai	<u>intenance</u>	
1	Do the a condition	analyzers and equipme on and well maintained	nt appear to be ?	in good			
2	Are the reportin	analyzers and monitor 1g data?	rs operational, o	n-line, and			
3	Describ	e ozone sample tube.				1/4 teflon by 15 meters	
4	Describ	e dry dep sample tube.				3/8 teflon by 15 meters	
5	Are in-l indicate	ine filters used in the o location)	zone sample lin	e? (if yes		At inlet only	
6	Are sam obstruct	nple lines clean, free of tions?	kinks, moisture	, and	✓		
7	Is the ze	ero air supply desiccan	t unsaturated?		✓		
8	Are the	re moisture traps in the	e sample lines?		✓	both ozone and flow	
9	Is there clean?	a rotometer in the dry	deposition filte	r line, and is it		Clean and dry	

Field Systems Data Form							F-02	2058-15	00-S6-rev002
Site	e ID	SAL133	Technician	Eric Hebert		Site Visit Date	11/15/2024	l .	
	<u>DAS, se</u>	nsor translators, an	d peripheral equi	pment operation	<u>is and</u>	l maintenance			
1	Do the l well ma	DAS instruments ap intained?	pear to be in good	condition and					
2	Are all modem	the components of t , backup, etc)	he DAS operation	al? (printers,					
3	Do the a lightnin	analyzer and sensor g protection circuit	signal leads pass t ry?	through		let sensors only			
4	Are the well ma	signal connections j intained?	protected from the	e weather and					
5	Are the	signal leads connec	ted to the correct	DAS channel?					
6	Are the ground	DAS, sensor transla ed?	ators, and shelter	properly					
7	Does th	e instrument shelter	have a stable pov	ver source?					
8	Is the in	strument shelter te	mperature control	lled?					
9	Is the m	et tower stable and	grounded?			Stable		Grounded	
10	Is the sa	ample tower stable a	and grounded?						
11	Tower o	comments?							

Site ID	SAL133 Technic	an Eric Hebert	Site Visit Date 11/15/2024				
DAS, sensor translators, and peripheral equipment operations and maintenance							

Field Systems Data FormF-02058-1500-S7-re								
Site ID SAL133	Technician Eric Hebert Site Visit Date 11	/15/2024						
Documentation	Documentation							
Does the site have the required i	nstrument and equipment manuals?							
Yes	s No N/A	Yes No N/A						
Wind speed sensor	Data logger							
Wind direction sensor	Data logger							
Temperature sensor	Strip chart recorder							
Relative humidity sensor	Computer							
Solar radiation sensor	∐ Modem							
Surface wetness sensor	Printer							
Wind sensor translator	□ ✓ Zero air pump							
Temperature translator	□ V Filter flow pump							
Humidity sensor translator	□ V Surge protector							
Solar radiation translator								
Tipping bucket rain gauge	□ ✓ Lightning protection device							
Ozone analyzer ⊻	Shelter heater							
Filter pack flow controller	Shelter air conditioner							
Filter pack MIFC power supply								
Does the site have the required	and most recent QC documents and report forms?							
Pro	esent	Current						
Station Log		\checkmark						
SSRF								
Site Ops Manual								
HASP	✓ Oct 2014							
Field Ops Manual								
Calibration Reports								
Ozone z/s/p Control Charts								
Preventive maintenance schedule								
1 Is the station log properly com	npleted during every site visit? 🔽							
2 Are the Site Status Report For current?	rms being completed and							
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:								
Site ID SAL133	Technician Eric Hebert Site Visit Date 11	/15/2024						
Documentation								

Field Systems Data Form

SAL133 Technician Eric Hebert Site Visit Date 11/15/2024 Site ID Site operation procedures Trained on-site by ESE employee (JBA) Has the site operator attended a formal CASTNET training 1 course? If yes, when and who instructed? 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed? Is the site visited regularly on the required Tuesday ✓ 3 schedule? ✓ Are the standard CASTNET operational procedures being 4 flollowed by the site operator? Is the site operator(s) knowledgeable of, and able to perform 5 the required site activities? (including documentation)

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

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	\checkmark	Semiannually	
Visual Inspections	\checkmark	Weekly	\checkmark
Translator Zero/Span Tests (climatronics)		N/A	\checkmark
Manual Rain Gauge Test	✓	N/A	\checkmark
Confirm Reasonableness of Current Values	✓	Weekly	\checkmark
Test Surface Wetness Response	\checkmark	N/A	\checkmark

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

QC Check Performed		Frequency	Compliant
Multi-point Calibrations	\checkmark	Semiannually	
Automatic Zero/Span Tests	\checkmark	Daily	
Manual Zero/Span Tests			
Automatic Precision Level Tests	\checkmark	Daily	
Manual Precision Level Test			
Analyzer Diagnostics Tests	\checkmark	Weekly	
In-line Filter Replacement (at inlet)	\checkmark	Monthly	
In-line Filter Replacement (at analyze	\checkmark	N/A	\checkmark
Sample Line Check for Dirt/Water	\checkmark	Weekly	\checkmark
Zero Air Desiccant Check	\checkmark	Weekly	\checkmark

1 Do multi-point calibration gases go through the complete sample train including all filters?

Are the automatic and manual z/s/p checks monitored and

2 Do automatic and manual z/s/p gasses go through the complete sample train including all filters?

reported? If yes, how?

SAL133

	Unknown
✓	
	SSRF, logbook, call-in

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 inlet filter is replaced and a zero/span/precision test is performed approximately monthly. The SSRF indicates that the ozone inlet filter "outside" filter is changed every week because "outside" filter is confused with the filter pack. This is not the only observation of incorrect documentation for the ozone inlet filter. It is suggested that the SSRF be changed to replace "outside" filter with "ozone inlet filter".

ID

3

Technician Eric Hebert

Site Visit Date 11/15/2024

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Field Systems Data Form						F-02058-1500-S9			
Sit	e ID	SAL133	Technician	Eric Hebert		Site Visit Date	11/15/2024		
	<u>Site ope</u>	eration procedures							
1	Is the fi	ilter pack being changed	every Tuesda	ay as scheduled	? ✓	Filter changed after	noons		
2	Are the correct	Site Status Report Forn ly?	ns being com	pleted and filed	✓				
3	Are dat schedul	a downloads and backuj ed?	ps being perf	ormed as		No longer required			
4	Are gen	neral observations being	made and re	corded? How?	✓	SSRF, logbook			
5	Are site fashion	e supplies on-hand and ro ?	eplenished in	a timely	✓				
6	Are san	nple flow rates recorded	? How?		✓	SSRF, call-in			
7	Are san fashion	nples sent to the lab on a ?	regular sche	dule in a timely					
8	Are filt and shi	ers protected from conta pping? How?	mination du	ring handling	✓	Clean gloves on and	d off		
9	Are the operation	site conditions reported ons manager or staff?	regularly to	the field	✓				
QC	Check P	erformed	Fre	quency			Compliant		
I	Multi-poi	nt MFC Calibrations	✓ Sem	niannually					
1	Flow Syst	tem Leak Checks	✓ Wee	ekly			\checkmark		
I	Filter Pac	k Inspection							
I	Flow Rate	e Setting Checks	✓ Wee	ekly			\checkmark		
I	visual Ch	neck of Flow Rate Rotom	eter 🗹 Wee	kly					
I	In-line Filter Inspection/Replacement Semiannually								
Sample Line Check for Dirt/Water Weekly									
Prov 1atu	vide any a ral or ma	additional explanation (J an-made, that may affec	ohotograph o t the monitor	r sketch if neces ing parameters:	sary :	r) regarding condition	ons listed above,	or any other features,	

Site ID	SAL133	Technician	Eric Hebert	Site Visit Date	11/15/2024	
Site op	eration procedures					

Site Visit Sensors					
Parameter	Manufacturer	Model	S/N	Client ID	
Computer	Dell	Inspiron 15	Unknown	07011	
DAS	Campbell	CR3000	2129	000351	
Elevation	Elevation	1	None	None	
Filter pack flow pump	Thomas	107CA110	0000141	00765	
Flow Rate	Арех	AXMC105LPMDPC	50743	000547	
Infrastructure	Infrastructure	none	none	none	
Modem	Digi	LR54	unknown	07206	
Ozone	ThermoElectron Inc	49i A1NAA	1009241785	000622	
Ozone Standard	ThermoElectron Inc	49i A3NAA	0726124692	000371	
Sample Tower	Aluma Tower	B	AT-51065-5-G-A	none	
Shelter Temperature	Campbell	107-L	none	none	
Siting Criteria	Siting Criteria	1	None	None	
Temperature	RM Young	41342	14043	06410	
Zero air pump	Werther International	C 70/4	000814286	06876	

Technician Eric Hebert

Field Systems Data Form

SAL133

Site ID

F-02058-1500-S10-rev002

Site Visit Date 11/15/2024

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number			
CTH	'TH110-Eric Hebert-11/17/2024								
1	11/17/2024	Computer	Dell	07273	Inspiron 15	Unknown			
2	11/17/2024	DAS	Campbell	000415	CR3000	2510			
3	11/17/2024	Elevation	Elevation	None	1	None			
4	11/17/2024	Filter pack flow pump	Thomas	02664	107CA18	1092135217			
5	11/17/2024	Flow Rate	Арех	000917	AXMC105LPMDPCV	illegible			
6	11/17/2024	Infrastructure	Infrastructure	none	none	none			
7	11/17/2024	Modem	Digi	07208	LR54	unknown			
8	11/17/2024	Ozone	ThermoElectron Inc	000611	49i A1NAA	1009241795			
9	11/17/2024	Ozone Standard	ThermoElectron Inc	000447	49i A3NAA	CM08200023			
10	11/17/2024	Sample Tower	Aluma Tower	666363	В	AT-5107-E-4-10			
11	11/17/2024	Shelter Temperature	Campbell	none	107-L	none			
12	11/17/2024	Siting Criteria	Siting Criteria	None	1	None			
13	11/17/2024	Temperature	RM Young	06301	41342	12540			
14	11/17/2024	Zero air pump	Werther International	06864	PC70/4	000815261			

DAS Time Max Error: 0

DAS Data Form

Mfg	Serial Number	Site	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2510	CTH110	Eric Hebert	11/17/2024	DAS	Primary
Das Date:11Das Time:Das Day:	/17/2024 Audit 13:31:10 Audit 322 Audit	Date 11/17/2024 Fime 13:31:10 Day 322	Mfg Serial Number	Datel 15510194	Parameter Tfer Desc.	DAS Source generator (D
Low Channel:	High C	hannel:	Tfer ID	01320		
Avg Diff: N	1ax Diff: Avg Dif	f: Max Diff:	Slope	1.0000	0 Intercept	0.00000
0.0000	0.0000		Cert Date	2/13/201	2 CorrCoff	1.00000
			Mfg	Fluke	Parameter	DAS
			Serial Number	95740135	Tfer Desc.	DVM
			Tfer ID	01311		
			Slope	1.0000	0 Intercept	0.00000
			Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	nput DVM Outp	ut DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000 0.	0000 0.000	00 V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	nber Tag	Site	Tee	Technician		Date Paran	neter	Owner ID
Apex	illegible		CTH110	Er	ic Hebert	11/17/2024	Flow F	late	000917
					Mfg	BIOS	P	arameter Flo	w Rate
					Serial Number	148613	Т	fer Desc. Blo	OS 220-H
					Tfer ID	01421			
					Slope	1.	.00871 Int	ercept	0.00110
					Cert Date	2/1	6/2024 Co	rrCoff	0.99999
DAS 1:		DAS 2:			Cal Factor Z	ero		0	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	w M Dif	Cal Factor F	ull Scale		0	
0.00%	0.00%				Rotometer R	eading:	1.	55	
Desc.	Test type	Input l/n	n Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignal	I 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	0.000	0.02	l/m	l/m	
primary	test pt 1	1.514	1.500	1.52	0.000	1.50	l/m	l/m	0.00%
primary	test pt 2	1.515	1.500	1.52	0.000	1.50	l/m	l/m	0.00%
primary	test pt 3	1.516	1.500	1.52	0.000	1.50	l/m	l/m	0.00%
Sensor Comp	onent Leak Tes	t		Conditio	n		Statu	s pass	
Sensor Comp	onent Tubing C	ondition		Conditio	n Good		Statu	s pass	
Sensor Comp	onent Filter Pos	sition		Conditio	n Good		Statu	s pass	
Sensor Comp	onent Rotomete	er Conditio	n	Conditio	Clean and dry		Statu	s pass	
Sensor Comp	onent Moisture	Present		Conditio	See comments	3	Statu	s pass	
Sensor Comp	onent Filter Dis	tance		Conditio	3.0 cm		Statu	s pass	
Sensor Comp	onent Filter Dep	oth		Conditio	4.0 cm		Statu	pass	
Sensor Comp	onent Filter Azi	muth		Conditio	n 180 deg		Statu	pass	
Sensor Comp	onent System N	/lemo		Conditio	n		Statu	s pass	

Ozone Data Form

Mfg		Serial Num	ber Tag	Site		Te	chnician	Site Visit Date	Paramete	er Owner ID
ThermoElect	tron Inc	100924179	5	CTH110)	Er	ic Hebert	11/17/2024	Ozone	000611
Slope: [Intercept [CorrCoff: [0.98336 Sl 0.60393 In 1.00000 Ca	ope: tercept orrCoff:		0.00000 0.00000 0.00000		Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Para	ameter ozone r Desc. Ozone primary stan
DAS 1.			DAS 2.				CI.	0.0007		0.21710
A Avg % D	iff: A N	Max % Dif	A Avg %	Diff A	Max %	6 Dif	Slope	0.9997	U Interc	ept 0.31710
0.0)%	0.0%					Cert Date	2/14/202	24 CorrC	Coff 1.00000
UseDescri	ption	ConcGroup	Tfe	r Raw	Tfe	er Corr	Site	Site Unit	RelPerD	Dif AbsDif
primar	у	1	0	.43		0.11	-0.38	ppb		-0.49
primar	у	2	14	4.69	1	4.38	13.44	ppb		-0.94
primar	у	3	30	6.35	3	6.07	34.85	ppb		-3.44
primar	y v	4	11	8.80	1	11.00	108.60	ppb ppb		-2.00
Sensor Co	ompone	ent Audit Pres	ssure	1.20		Conditio	on 712 mmHg	ppo	Status P	pass
Sensor Co	ompone	ent 26.6 degr	ee unobs	tructed ru	le	Conditi	on True		Status P	pass
Sensor Co	ompone	ent Tree dew	line >10m	or below	inlet	Conditi	on True		Status P	pass
Sensor Co	ompone	ent ADT 1000)-10000 v	ehicles fu	irther t	Conditi	on True		Status P	pass
Sensor Co	ompone	ent ADT <100	0 vehicle	s further	than 5	Conditi	on True		Status P	pass
Sensor Co	ompone	ent Sample T	rain			Conditi	on Good		Status P	pass
Sensor Co	ompone	ent Inlet Filter	r Conditio	n		Conditio	on Moderately cle	an	Status P	pass
Sensor Co	ompone	ent Offset				Conditi	on -0.5		Status P	ass
Sensor Co	ompone	ent Span				Conditi	on 1.010		Status P	pass
Sensor Co	ompone	ent Zero Volta	age			Conditi	on N/A		Status P	pass
Sensor Co	ompone	ent Fullscale	Voltage			Conditi	on N/A		Status P	pass
Sensor Co	ompone	ent Cell A Fre	eq.			Conditi	on 92.7 kHz		Status P	pass
Sensor Co	ompone	ent Cell A No	ise			Conditio	on Not tested		Status P	bass
Sensor Co	ompone	ent Cell A Flo	W			Conditi	on 0.71 lpm		Status P	pass
Sensor Co	ompone	ent Cell A Pre	essure			Conditio	on 680.5 mmHg		Status P	pass
Sensor Co	ompone	ent Cell A Tr	ıp.			Conditio	on 26.7 C		Status P	pass
Sensor Co	ompone	ent Cell B Fre	eq.			Condition	on 94.2 kHz		Status p	pass
Sensor Co	ompone	ent Cell B No	ise			Conditio	on Not tested		Status P	pass
Sensor Co	ompone	ent Cell B Flo	W			Conditio	on 0.71 lpm		Status P	Dass
Sensor Co	ompone	ent Cell B Pre	essure			Conditio	on 679.9 mmHg		Status P	Dass
Sensor Co	ompone	ent Nafion dry	yer installe	ed		Condition	on True		Status P	pass
Sensor Co	ompone	ent System M	lemo			Conditi	on		Status P	ass

Temperature Data Form

Mfg	Serial Number Tag Site		Т	echni	echnician Site Vis		isit Date	Param	eter	Owner ID
RM Young	12540	12540 CTH110		Eric Hebert		11/17	/2024	Temper	ature	06301
				Mf	g	Fluke		Pa	rameter Te	mperature
				Ser	ial Number	61960	02	Tf	er Desc. R	D
				Tfe	er ID	01224				
DAS 1:	DAS	2:		Slo	ре		1.0000	0 Inte	rcept	0.00046
Abs Avg Err	Abs Max Err Abs	Avg Err Abs	Max Err	Cer	rt Date		9/26/202	3 Cor	rCoff	1.00000
0.22	0.40									
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference
primary T	emp Low Range	0.16	0.16		0.000		0.2	2	С	0.07
primary T	emp Mid Range	24.99	24.99		0.000		24.	8	С	-0.2
primary T	emp High Range	45.38	45.38		0.000		45.	0	С	-0.4
Sensor Comp	onent Shield		Condi	tion N	/loderately clea	an		Status	pass	
Sensor Comp	onent Blower		Condi	tion N	I/A			Status	pass	
Sensor Component Properly Sited Co			Condi	Condition Properly sited				Status	pass	
Sensor Comp	onent System Memo		Condi	tion				Status	pass	

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	CTH110	Eric Hebert	11/17/2024	Shelter Temperature	none
DAS 1: Abs Avg Err Abs 0.71	DAS 2:CrrAbs Max ErrAbs Avg ErrAbs Max Err0.710.80		Mfg Serial Number Tfer ID	Fluke 6196002 01224	Parameter She	Iter Temperature
			Slope Cert Date	9/26/202	0 Intercept 23 CorrCoff	0.00046

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	16.80	16.80	0.000	17.6	С	0.8
primary	Temp Mid Range	17.06	17.06	0.000	17.7	С	0.62
Sensor Con	ponent System Memo		Condition		Status	pass	

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	CTH110	Technician Eric Heb	ert Site Visit Date 11/17/2024
Shelter	Make	Shelter Model	Shelter Size
Ekto		8810 (s/n 2116-6)	640 cuft
10 January and the second			

Sensor Component Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component Conduit	Condition	N/A	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	Pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Good	Status	pass
Sensor Component Shelter Condition	Condition	Fair	Status	pass
Sensor Component Shelter Door	Condition	Fair	Status	pass
Sensor Component Shelter Roof	Condition	Fair	Status	pass
Sensor Component Shelter Floor	Condition	Poor	Status	pass
Sensor Component Shelter walls	Condition	Fair	Status	pass
Sensor Component Excessive mold present	Condition	Fair	Status	pass
Sensor Component Signal Cable	Condition	Fair	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

Site Visit Comments

Parameter	Site	Technician	S.V. Date	Component	Mfg	Serial No.	Hazard	Problem
Flow Rate	CTH110	Eric Hebert	11/17/2024	Moisture Present	Apex	4841		
The filter sample tubing h	as drops of mois	ture in low sections	outside the she	lter.				

Field Systems Comments

1 Parameter: DasComments

The site laptop computer has not functioned since at least 10/29/2024, therefore some variable information and previous calibration results are not available and are not reported .

2 Parameter: SiteOpsProcedures

The ozone inlet filter is replaced and a Z/S/P is performed every two weeks.

3 Parameter: SitingCriteriaCom

There is a point source north of Ithaca within 40 km of the site. The tree line is less than 50 m from the site. The siting is acceptable even with the noted exceptions. Trees and overgrowth have recently been removed from the site which has improved siting criteria.

4 Parameter: ShelterCleanNotes

The condition of the shelter walls are continuing to deteriorate. Floor tiles are loose. Plastic is covering the computer but it is not clear if the roof is leaking.

5 Parameter: MetSensorComme

The temperature sensor is mounted on the east leg of the sample tower.

Field Systems Data Form

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Site ID CTH1	10	Technician Eric Hebert	Site Visit Date 11/1	7/2024				
				Mashian				
Site Sponsor (agenc	y)	EPA	USGS Map					
Operating Group		IES	Map Scale					
AQS #		36-109-9991	Map Date					
Meteorological Type	e	R.M. Young]					
Air Pollutant Analy	zer	Ozone, ammonia	QAPP Latitude	42.4010				
Deposition Measure	position Measurement dry, wet		QAPP Longitude	-76.6535				
Land Use		woodland - mixed	QAPP Elevation Meters	515				
Terrain		rolling	QAPP Declination	12.3				
Conforms to MLM		No	QAPP Declination Date	12/28/2004				
Site Telephone		(607) 564-7622	Audit Latitude	42.400875				
Site Address 1	dress 1 CR 136 (Connecticut Hill Road)		Audit Longitude	-76.653516				
Site Address 2	Address 2		Audit Elevation	511				
County	Tompkins		Audit Declination	-12.0				
City, State		Newfield, NY	Present					
Zip Code		14867	Fire Extinguisher 🗹	New in 2015				
Time Zone		Eastern	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 Steps ✓					
Shelter Working Ro	om 🗸	Make Ekto M	lodel 8810 (s/n 2116-6)	Shelter Size 640 cuft				
Shelter Clean		Notes The condition of the shelter we covering the computer but it is	alls are continuing to deteriorate a not clear if the roof is leaking	e. Floor tiles are loose. Plastic is				
Site OK	\checkmark	Notes						
Driving Directions	From entrar Corne onto (on the	Ithaca take route 13 south to hwy 327. Ences for Robert Treman St Park. Turn leters Road. Continue on Trumbell Corners Connecticut Hill Road and continue for an eleft just after the turn in the road.	Bear right onto hwy 327 and go ft at the second left past the upp Rd for approximately one mile proximately 1/4 mile where it ve	past both the lower and upper ber entrance to the park onto Trumbell to the stop sign. Turn right at the stop eers to the right. The site is up the hill				
Fi	eld Sy	stems Data Fo	orm				F-0205	8-1500-S3-rev002
------	--	---	--	---	---	-----------------	---------------	------------------
Site	e ID	CTH110	Technician E	ric Hebert		Site Visit Date	11/17/2024	
1	Are wind being in	d speed and direction fluenced by obstructio	sensors sited so a ons?	s to avoid	✓	N/A		
2	Are wind (i.e. wind horizont tower in	d sensors mounted so d sensors should be m ally extended boom > to the prevailing wind	as to minimize to ounted atop the to 2x the max diame l)	wer effects? ower or on a eter of the		N/A		
3	Are the	tower and sensors plu	mb?		✓	N/A		
4	Are the avoid ra	temperature shields p diated heat sources su	ointed north or p ich as buildings, v	ositioned to valls, etc?	✓	East		
5	Are tem conditio surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped swater should be avoi	sors sited to avoid y sensors should b l. Ridges, hollows, ded)	unnatural e natural , and areas of				
6	Is the so	lar radiation sensor p	lumb?		✓	N/A		
7	Is it site	d to avoid shading, or	any artificial or r	reflected light?	✓	N/A		
8	Is the ra	in gauge plumb?			✓	N/A		
9	Is it sited towers, o	d to avoid sheltering e etc?	ffects from buildi	ings, trees,	✓	N/A		
10	Is the su facing n	rface wetness sensor s orth?	sited with the grid	l surface	✓	N/A		
11	Is it incl	lined approximately 3	0 degrees?		✓	N/A		
						L		

The temperature sensor is mounted on the east leg of the sample tower.

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Site	e ID	CTH110	Technician	Eric Hebert		Site Visit Date 11/17/2024
1 2	Do all th condition Are all t reportin	e meterological sensor n, and well maintained he meteorological sens g data?	rs appear to be i 1? sors operational	ntact, in good online, and	✓	Temperature only Temperature only
3	Are the	shields for the tempera	ature and RH se	ensors clean?	✓	
4	Are the	aspirated motors work	king?		✓	N/A
5	Is the so scratche	lar radiation sensor's l	lens clean and fr	ree of		N/A
6	Is the su	rface wetness sensor g	grid clean and ur	ndamaged?	✓	N/A
7	Are the s condition	sensor signal and pow n, and well maintained	er cables intact, 1? er cable connect	in good		
8	from the	elements and well ma	aintained?	ions protected		

Fi	eld Systems	Data Form		F-02058-1	500-S5-rev002
Sit	e ID CTH110	Technician Eric	: Hebert	Site Visit Date 11/17/2024	
	Siting Criteria: A	re the pollutant analyzers and c	leposition equipm	ent sited in accordance with 40 CFR 5	58, Appendix E
1	Do the sample inle unrestricted airflo	ets have at least a 270 degree ar w?	°c of ✓		
2	Are the sample inl	lets 3 - 15 meters above the gro	und?		
3	Are the sample inl and 20 meters from	lets > 1 meter from any major o m trees?	obstruction,		
	Pollutant analyzer	rs and deposition equipment op	erations and main	<u>itenance</u>	
1	Do the analyzers a condition and well	and equipment appear to be in g I maintained?	good 🗹		
2	Are the analyzers reporting data?	and monitors operational, on-l	ine, and 🗹		
3	Describe ozone sa	mple tube.		1/4 teflon by 12 meters	
4	Describe dry dep s	sample tube.		3/8 teflon by 12 meters	
5	Are in-line filters indicate location)	used in the ozone sample line? ((if yes	At inlet only	
6	Are sample lines c obstructions?	lean, free of kinks, moisture, a	nd 🗹		
7	Is the zero air sup	ply desiccant unsaturated?			
8	Are there moistur	e traps in the sample lines?		ooth flow and ozone	
9	Is there a rotomet clean?	er in the dry deposition filter li	ne, and is it 🗹 🤅	Clean and dry	

Fi	eld Sy	stems Data Fo	orm				F-0 2	2058-15	00-S6-rev002
Site	e ID	CTH110	Technician	Eric Hebert		Site Visit Date	11/17/2024	4	
	<u>DAS, se</u>	nsor translators, and g	peripheral equi	pment operation	<u>s ar</u>	<u>nd maintenance</u>			
1	Do the l well ma	DAS instruments appe intained?	ar to be in good	l condition and	✓				
2	Are all modem,	the components of the backup, etc)	DAS operation	al? (printers,	✓				
3	Do the a lightnin	nalyzer and sensor sig g protection circuitry?	gnal leads pass	through		Met sensors only			
4	Are the well ma	signal connections pro intained?	otected from the	e weather and					
5	Are the	signal leads connected	to the correct	DAS channel?					
6	Are the ground	DAS, sensor translato ed?	rs, and shelter	properly	✓				
7	Does the	e instrument shelter ha	ave a stable pov	ver source?	✓				
8	Is the in	strument shelter temp	erature contro	lled?	✓				
9	Is the m	et tower stable and gr	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	grounded?						
11	Tower o	comments?				Met tower removed			

The site laptop computer has not functioned since at least 10/29/2024, therefore some variable information and previous calibration results are not available and are not reported .

Field	Systems Data	Fo	rm				F-0 2	2058-	-1500-S7	-rev002
Site ID	CTH110		Techn	i <mark>ician</mark> Eric He	ebert	Site Visit Date 1	1/17/2024	4		
Доси	mentation									
Deer	<u>mentation</u> the site base the second	and the				1-9				
Does	the site have the requi	Vec	<u>strume</u>	<u>nt and equipr</u>	nent manua	<u>IIS :</u>	Vac	No	NT/A	
Wind sr	oeed sensor				Data lo	gger				
Wind di	rection sensor			\checkmark	Data lo	gger				
Temper	ature sensor	\checkmark			Strip cl	hart recorder			\checkmark	
Relative	humidity sensor			\checkmark	Compu	iter		\checkmark		
Solar ra	diation sensor			\checkmark	Moden	1				
Surface	wetness sensor			\checkmark	Printer				\checkmark	
Wind se	ensor translator			\checkmark	Zero ai	r pump		\checkmark		
Temper	ature translator			\checkmark	Filter f	low pump		\checkmark		
Humidi	ty sensor translator				Surge p	protector			\checkmark	
Solar ra	diation translator				UPS				\checkmark	
Tipping	bucket rain gauge				Lightni	ing protection device			\checkmark	
Ozone a	nalyzer	\checkmark			Shelter	heater		\checkmark		
Filter pa	ack flow controller		\checkmark		Shelter	air conditioner	\checkmark			
Filter pa	ack MFC power supply	у 🗌								
Doe	s the site have the requ	uired a	and mos	t recent QC	documents :	and report forms?				
		Pres	ent				Curre	ent		
Station	Log		✓				\checkmark			
SSRF			✓				\checkmark			
Site Ops	s Manual			Oct 2001						
HASP				Oct 2015						
Field O	ps Manual			Oct 2015						
Calibra	tion Reports						\checkmark			
Ozone z	/s/p Control Charts									
Prevent	ive maintenance sched	ule								
1 Is t	he station log properly	y comp	leted d	uring every s	ite visit? 🔽	Minimal information				
2 Are	e the Site Status Repor rrent?	rt Forn	ns beinş	g completed a	ind 🔽]				
3 Are san	e the chain-of-custody nple transfer to and fr	forms om lat	proper ?	ly used to do	cument 🔽]				
4 Are	e ozone z/s/p control cl rrent?	harts p	roperly	completed a	nd] Control charts not use	ed			
Provide	any additional explan	ation (photog	raph or sketc	h if necessa	ry) regarding condition	ons listed	above,	or any other	features,

natural or man-made, that may affect the monitoring parameters:

CTH110 Technician Eric Hebert Site Visit Date 11/17/2024 Site ID Site operation procedures Trained at ESE in 1987 Has the site operator attended a formal CASTNET training 1 course? If yes, when and who instructed? 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed? Is the site visited regularly on the required Tuesday ✓ 3 schedule? ✓ Are the standard CASTNET operational procedures being 4 flollowed by the site operator? Is the site operator(s) knowledgeable of, and able to perform 5 the required site activities? (including documentation)

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

QC Check Performed
Multipoint Calibrations

Frequency

Multipoint Calibrations	\checkmark	Semiannually	\checkmark
Visual Inspections	\checkmark	Weekly	\checkmark
Translator Zero/Span Tests (climatronics)	\checkmark	N/A	\checkmark
Manual Rain Gauge Test	\checkmark	N/A	\checkmark
Confirm Reasonableness of Current Values	\checkmark	Weekly	\checkmark
Test Surface Wetness Response	\checkmark	N/A	\checkmark

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

\mathbf{OC}	Chook	Dauformad
VU	CHECK	reriorineu

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests Automatic Precision Level Tests Manual Precision Level Test Analyzer Diagnostics Tests In-line Filter Replacement (at inlet) In-line Filter Replacement (at analyze Sample Line Check for Dirt/Water **Zero Air Desiccant Check**

Frequency	Co
Semiannually	
Daily	
Daily	
•	
Weekly	
Every 2 weeks	
N/A	
Weekly	
Weekly	

- 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?
- Are the automatic and manual z/s/p checks monitored and 3 reported? If yes, how?

	Unknown
✓	
✓	SSRF, call-in

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 inlet filter is replaced and a Z/S/P is performed every two weeks.

mpliant

Compliant

F-02058-1500-S8-rev002

Site ID The line Technician Eric Hebert Site Visit Date 11/17/2024 Site operation procedures I Is the filter pack being changed every Tuesday as scheduled? Filter changed mornings 2 Are the Site Status Report Forms being completed and filed correctly? Site Visit Date Image: Correctly and the scheduled and filed correctly? 3 Are the Site Status Report Forms being performed as scheduled? No longer required 4 Are general observations being made and recorded? How? SSRF 5 Are stas supplies on-band and replenished in a timely fashion? SSRF, call-in 6 Are sample flow rates recorded? How? SSRF, call-in 7 Are sample sent to the lab on a regular schedule in a timely and shipping? How? SSRF, call-in 8 Are filters protected from contamination during handling and shipping? How? Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or stati? Semiannually 9 Frequency Compliant 9 Frequency Compliant 9 Semiannually Yeekly 9 Flow System Leak Checks Weekly 9 Flow Rate Setting Checks Weekly 9 Semiannually Yeekly 9 Ster Inspection Yeekly 9 Ster Inspection Yeekly	Fi	eld Sy	stems Data Form			F-02058-1500-S9-rev002
Site operation procedures 1 Is the filter pack being changed every Tuesday as scheduled? Filter changed mornings 2 Are the Site Status Report Forms being completed and filed correctly? Image: Site operations and backups being performed as scheduled? No longer required 3 Are data downloads and backups being performed as scheduled? No longer required SSRF 4 Are general observations being made and recorded? How? Image: SSRF SSRF 5 Are site supplies on-hand and replenished in a timely fashion? SSRF, call-in 6 Are sample flow rates recorded? How? SSRF, call-in 7 Are sample sent to the lab on a regular schedule in a timely fashion? SSRF, call-in 8 Are filters protected from contamination during handling and shipping? How? Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or staff? Image: Sention and Staff 9 Arete Ket Checks Weekly Image: Sention and Staff 9 No longer required Image: Sention and Staff 9 Ketky Image: Sention and Staff Image: Sention and Staff 9 Ketky Image: Sention and Staff Image: Sention and Staff	Sit	e ID	CTH110 Tec	hnician Eric Hebert		Site Visit Date 11/17/2024
1 Is the filter pack being changed every Tuesday as scheduled? Filter changed momings 2 Are the Site Status Report Forms being completed and filed correctly? No longer required 3 Are data downloads and backups being performed as scheduled? No longer required 4 Are general observations being made and recorded? How? SSRF 5 Are site supplies on-hand and replenished in a timely fashion? SSRF, call-in 6 Are sample flow rates recorded? How? SSRF, call-in 7 Are samples sent to the lab on a regular schedule in a timely fashion? SSRF, call-in 8 Are filters protected from contamination during handling operations manager or staff? Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or staff? Multi-point MFC Calibrations Semiannually Flow System Leak Checks Weekly Yeekly Yeekly Yeekly Flow Rate Setting Checks Weekly Yeekly Yeekly Yeekly Flow Rate Rotometer Weekly Yeekly Yeekly Yeekly Yeekly Subjection Yeekly Yeekly Yeekly Yeekly Yeekly Yeekly Sample Li		<u>Site ope</u>	ration procedures			
2 Are the Site Status Report Forms being completed and filed correctly? Image: Correctly? 3 Are data downloads and backups being performed as scheduled? Image: Correctly? 4 Are general observations being made and recorded? How? Image: Correctly? 5 Are site supplies on-hand and replenished in a timely fashion? Image: Correctly? 6 Are sample flow rates recorded? How? Image: Correctly? 7 Are samples sent to the lab on a regular schedule in a timely fashion? Image: Correctly? 8 Are filters protected from contamination during handling and shipping? How? Image: Correctly? Image: Correctly? 9 Are the site conditions reported regularly to the field operations manager or staff? Image: Correctly? Image: Correctly? 9 Multi-point MFC Calibrations Image: Semiannually Image: Correctly? Image: Correctly? 9 Neekly Image: Correctly? Image: Correctly? Image: Correctly? Image: Correctly? 9 Multi-point MFC Calibrations Image: Correctly? Image: Correctly? Image: Correctly? Image: Correctly? 9 Multi-point MFC Calibrations Image: Semiannually Image: Correctly? Image: Correctly? Image: Correct	1	Is the fi	lter pack being changed ever	y Tuesday as scheduled	l? ☑	Filter changed mornings
3 Are data downloads and backups being performed as scheduled? 4 Are general observations being made and recorded? How? 5 Are site supplies on-hand and replenished in a timely fashion? 6 Are sample flow rates recorded? How? 7 Are samples sent to the lab on a regular schedule in a timely fashion? 8 Are filters protected from contamination during handling and shipping? How? 9 Are the site conditions reported regularly to the field operations manager or staff? QC Check Performed Frequency Flow System Leak Checks Weekly Filter Pack Inspection Image: Semiannually Filter Pack Inspection Image: Semiannually Visual Check of Flow Rate Rotometer Weekly Visual Check for Dirt/Water Weekly Visual Check for Dirt/Water Weekly	2	Are the correctl	Site Status Report Forms be y?	ing completed and filed		
4 Are general observations being made and recorded? How? ✓ SSRF 5 Are site supplies on-hand and replenished in a timely fashion? ✓ SSRF, call-in 6 Are sample flow rates recorded? How? ✓ SSRF, call-in 7 Are samples sent to the lab on a regular schedule in a timely fashion? ✓ SSRF, call-in 8 Are filters protected from contamination during handling and shipping? How? ✓ Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or staff? ✓ Compliant QC Check Performed Frequency Compliant Multi-point MFC Calibrations Semiannually ✓ Flow System Leak Checks Weekly ✓ Flow Rate Setting Checks Weekly ✓ Visual Check of Flow Rate Rotometer Weekly ✓ In-line Filter Inspection/Replacement Semiannually ✓ Sample Line Check for Dirt/Water ✓ ✓	3	Are dat schedul	a downloads and backups be ed?	ing performed as		No longer required
5 Are site supplies on-hand and replenished in a timely fashion? SRF, call-in 6 Are sample flow rates recorded? How? SSRF, call-in 7 Are samples sent to the lab on a regular schedule in a timely fashion? SSRF, call-in 8 Are filters protected from contamination during handling and shipping? How? Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or staff? Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or staff? Multi-point MFC Calibrations 9 Multi-point MFC Calibrations Semiannually Image: Semiannually 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Calibrations Multi-point MFC Calibrations 9 Filter Pack Inspection Multi-point MFC Mate Rotometer Multi-point MEC Mate Rotometer 9 Multi-point MEC Mate Rotometer Multi-point MEC Mate Rotometer Multi-point ME	4	Are gen	eral observations being mad	e and recorded? How?		SSRF
6 Are sample flow rates recorded? How? SSRF, call-in 7 Are samples sent to the lab on a regular schedule in a timely fashion? Image: Complex comple	5	Are site fashion	supplies on-hand and replen ?	ished in a timely	✓	
7 Are samples sent to the lab on a regular schedule in a timely fashion? ✓ 8 Are filters protected from contamination during handling and shipping? How? ✓ Clean gloves on and off 9 Are the site conditions reported regularly to the field operations manager or staff? ✓ Clean gloves on and off QC Frequency Compliant Multi-point MFC Calibrations ✓ Semiannually ✓ Flow System Leak Checks ✓ Weekly ✓ Flow Rate Setting Checks ✓ Weekly ✓ Visual Check of Flow Rate Rotometer In-line Filter Inspection/Replacement Sample Line Check for Dirt/Water ✓ ✓	6	Are san	nple flow rates recorded? Ho	w?	✓	SSRF, call-in
 8 Are filters protected from contamination during handling and shipping? How? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions reported regularly to the field operations manager or staff? 9 Are the site conditions of the semiannually 9 Are the setting Checks 9 Weekly 9 Are the setting Checks of Flow Rate Rotometer 9 Weekly 9 Are the setting Check for Dirt/Water 9 Are the setting Check	7	Are san fashion	pples sent to the lab on a regu ?	ılar schedule in a timel	y 🔽	
9 Are the site conditions reported regularly to the field operations manager or staff? QC Check Performed Frequency Multi-point MFC Calibrations Semiannually Flow System Leak Checks Weekly Filter Pack Inspection Flow Rate Setting Checks Weekly Visual Check of Flow Rate Rotometer Neekly Semiannually Weekly Visual Check of Flow Rate Rotometer Neekly Yeekly Yeekly	8	Are filte and shij	ers protected from contamina oping? How?	ation during handling	✓	Clean gloves on and off
QC Check PerformedFrequencyCompliantMulti-point MFC CalibrationsI SemiannuallyIFlow System Leak ChecksI WeeklyIFilter Pack InspectionIIFilter Pack InspectionIIVisual Check of Flow Rate RotometerI WeeklyIVisual Check of Flow Rate RotometerI WeeklyIIn-line Filter Inspection/ReplacementI SemiannuallyIWeeklyIIWeeklyIIIn-line Filter Inspection/ReplacementI WeeklyIWeeklyIIWeeklyIIIn-line Filter Inspection/ReplacementI WeeklyIIn-line Check for Dirt/WaterI WeeklyI	9	Are the operation	site conditions reported regu ons manager or staff?	llarly to the field		
Multi-point MFC CalibrationsSemiannuallyIFlow System Leak ChecksWeeklyIFilter Pack InspectionIIFlow Rate Setting ChecksWeeklyIVisual Check of Flow Rate RotometerWeeklyIIn-line Filter Inspection/ReplacementSemiannuallyISample Line Check for Dirt/WaterWeeklyI	QC	Check P	erformed	Frequency		Compliant
Flow System Leak Checks Image: Weekly Filter Pack Inspection Image: Checks Flow Rate Setting Checks Image: Weekly Visual Check of Flow Rate Rotometer Image: Weekly In-line Filter Inspection/Replacement Image: Semiannually Sample Line Check for Dirt/Water Image: Weekly	N	Aulti-poi	nt MFC Calibrations	Semiannually		
Filter Pack Inspection Flow Rate Setting Checks Visual Check of Flow Rate Rotometer Visual Check of Flow Rate Rotometer Veekly In-line Filter Inspection/Replacement Sample Line Check for Dirt/Water Veekly	I	low Syst	em Leak Checks	✓ Weekly		
Flow Rate Setting Checks Image: Check of Flow Rate Rotometer Image: Check of Flow Rate Rotometer </td <td>ŀ</td> <td>ilter Pac</td> <td>k Inspection</td> <td></td> <td></td> <td></td>	ŀ	ilter Pac	k Inspection			
Visual Check of Flow Rate Rotometer Image: Weekly Image: Weekly In-line Filter Inspection/Replacement Image: Semiannually Image: Weekly Sample Line Check for Dirt/Water Image: Weekly Image: Weekly	ŀ	low Rate	e Setting Checks	✓ Weekly		
In-line Filter Inspection/Replacement ✓ Semiannually ✓ Sample Line Check for Dirt/Water ✓ Weekly ✓	١	visual Ch	eck of Flow Rate Rotometer	✓ Weekly		
Sample Line Check for Dirt/Water 🗹 Weekly	I	n-line Fil	ter Inspection/Replacement	 Semiannually 		
	S	ample L	ine Check for Dirt/Water	✓ Weekly		

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	Inspiron 15	Unknown	07273
DAS	Campbell	CR3000	2510	000415
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CA18	1092135217	02664
Flow Rate	Арех	AXMC105LPMDPC	illegible	000917
Infrastructure	Infrastructure	none	none	none
Modem	Digi	LR54	unknown	07208
Ozone	ThermoElectron Inc	49i A1NAA	1009241795	000611
Ozone Standard	ThermoElectron Inc	49i A3NAA	CM08200023	000447
Sample Tower	Aluma Tower	B	AT-5107-E-4-10	666363
Shelter Temperature	Campbell	107-L	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342	12540	06301
7	Marthan International	DC70/4	000815261	06964

Technician Eric Hebert

Field Systems Data Form

CTH110

Site ID

Site Visit Sensors

F-02058-1500-S10-rev002

Site Visit Date 11/17/2024

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
CAT	175-Eric H	ebert-11/18/2024				
1	11/18/2024	DAS	Campbell	000834	CR850	32796
2	11/18/2024	Elevation	Elevation	None	1	None
3	11/18/2024	Filter pack flow pump	Brailsford	none	TD-4X2N	1016
4	11/18/2024	Flow Rate	Арех	000904	AXMC105LPMDPCV	illegible
5	11/18/2024	Infrastructure	Infrastructure	none	none	none
6	11/18/2024	Modem	Sierra wireless	07184	GX440	10328
7	11/18/2024	Sample Tower	Aluma Tower	666359	В	none
8	11/18/2024	Shield (10 meter)	RM Young	none	41003	none
9	11/18/2024	Siting Criteria	Siting Criteria	None	1	None
10	11/18/2024	Temperature	RM Young	06113	41342VC	10177
11	11/18/2024	UPS	ProSine	04576	1000w	unknown

DAS Time Max Error: 0

DAS	Data	Form

Mfg	Serial Nu	mber Site	Т	echnician	Site Visit Date	Parameter	Use Desc.
Campbell	32796	CAT	Т175 Е	Eric Hebert	11/18/2024	DAS	Primary
Das Date:	11/18/2024 14:03:50	Audit Date Audit Time	11/18/2024 14:03:50	Mfg	Datel	Parameter	DAS
Das Day:	323	Audit Day _ High Channe	323	Tfer ID	01320	Tter Desc.	Source generator (D
Avg Diff: 0.0000	Max Diff: 0.0000	Avg Diff:	Max Diff:	Slope	1.0000	0 Intercept	0.00000
				Cert Date	2/13/201	2 CorrCoff	1.00000
				Mig Serial Number	95740135	Tfer Desc.	DVM
				Tfer ID	01311		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	Input D	OVM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.0000	V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	ıber Tag	Site	Тес	chnician	Site Visit D	ate Param	neter	Owner ID
Apex	illegible		CAT175	Eri	ic Hebert	11/18/2024	Flow R	late	000904
					Mfg		BIOS		w Rate
					Serial Number 14		Т	fer Desc. BIO	S 220-H
					Tfer ID 01				
					Slope		00871 Inte	ercept	0.00110
					Cert Date	2/16	/2024 Cor	rrCoff	0.99999
DAS 1:		DAS 2:			Cal Factor Z	ero	0.00	04	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	x % Dif	Cal Factor F	ull Scale	1.01	17	
2.60%	2.60%				Rotometer R	eading:	1	.5	
Desc.	Test type	Input l/n	n Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	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	0.01	0.000	0.02	l/m	l/m	
primary	test pt 1	1.470	1.460	1.48	0.000	1.50	l/m	l/m	2.60%
primary	test pt 2	1.472	1.460	1.48	0.000	1.50	l/m	l/m	2.60%
primary	test pt 3	1.469	1.460	1.48	0.000	1.50	l/m	l/m	2.60%
Sensor Comp	onent Leak Tes	t		Conditio	on	Status		s pass	
Sensor Comp	onent Tubing C	ondition		Conditio	Good		Status pas		
Sensor Comp	onent Filter Pos	ition		Conditio	Good		Status	s pass	
Sensor Comp	onent Rotomete	er Conditio	n	Conditio	Clean and dry		Status	s pass	
Sensor Comp	onent Moisture	Present		Conditio	No moisture pr	resent	Status	s pass	
Sensor Comp	onent Filter Dist	tance		Conditio	n 5.5 cm		Status	s pass	
Sensor Comp	onent Filter Dep	oth		Conditio	2.5 cm		Status	s pass	
Sensor Comp	onent Filter Azir	muth		Conditio	180 deg		Status	s pass	
Sensor Component System Memo				Conditio	n		Status	s pass	

Temperature Data Form

Mfg	Serial Number	Tag Site]	Technician		Site V	isit Date	Param	eter	Owner ID	
RM Young	10177	CAT175		Eric H	ebert	11/18	/2024	Temper	ature	06113	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Serial Number		6196002 Tf		er Desc. R	D		
				Tfer ID		01224					
DAS 1: DAS 2:				Slo	pe	1.00000 Intercep		rcept	cept 0.00046		
Abs Avg Err Abs Max Err Abs Avg Err Abs Ma		Max Err	Err Cert Date			9/26/2023 CorrCoff		rCoff	1.00000	0	
0.25	ō 0.32										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	0.12	0.12		0.000		0.3	3	С	0.18	
primary	Temp Mid Range	23.49	23.49)	0.000		23.	2	С	-0.25	
primary	Temp High Range	44.45	44.45	5	0.000		44.	1	С	-0.32	
Sensor Con	ponent Shield		Condi	ition C	Clean			Status	pass		
Sensor Con	nponent Blower		Condi	ition N	I/A			Status	pass		
Sensor Component Properly Sited			Condi	Condition Properly sited				Status	pass		
Sensor Con	ponent System Memory)	Condi	Condition				Status	pass		

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	CAT175	Technician Eric Het	ert Site Visit Date 11/18/2024
Shelter	Make	Shelter Model	Shelter Size
Ekto		8810 (s/n 1977-1)	640 cuft
Elsonacione moner			

Sensor Component Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component Conduit	Condition	N/A	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	N/A	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Good	Status	pass
Sensor Component Shelter Condition	Condition	N/A	Status	pass
Sensor Component Shelter Door	Condition	N/A	Status	pass
Sensor Component Shelter Roof	Condition	N/A	Status	pass
Sensor Component Shelter Floor	Condition	N/A	Status	pass
Sensor Component Shelter walls	Condition	N/A	Status	pass
Sensor Component Excessive mold present	Condition	N/A	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

Field Systems Comments

1 Parameter: DasComments

The shelter is no longer used for other than storage and solar panel mount.

2 Parameter: DocumentationCo

The site copies of the SSRF are no longer kept onsite.

3 Parameter: ShelterCleanNotes

The shelter is seriously deteriorated with rot and mold on the walls. However, the shelter is no longer used for other than batteries and the solar panel mount. A small foot-print system has been installed on the sample tower.

4 Parameter: PollAnalyzerCom

Small foot-print site with just filter pack and temperature.

F-02058-1500-S1-rev002

Site ID CAT175	Technician Eric Hebert	Site Visit Date 11/18	3/2024			
Site Spanson (aganay)	FPΔ	USGS Man	Claryville			
Site Sponsor (agency)		Man Scale				
Operating Group		Map Scale				
AQS #		Map Date				
Meteorological Type	R.M. Young					
Air Pollutant Analyzer	Ozone	QAPP Latitude	41.9423			
Deposition Measurement	dry	QAPP Longitude	-74.5519			
Land Use	woodland - mixed	QAPP Elevation Meters	765			
Terrain	complex	QAPP Declination	13.5			
Conforms to MLM	No	QAPP Declination Date	2/22/2006			
Site Telephone	(845) 798-0947	Audit Latitude	41.942325			
Site Address 1	Wildcat Mt. Road	Audit Longitude	-74.551999			
Site Address 2		Audit Elevation	754			
County	Ulster	Audit Declination	-13.2			
City, State	Claryville, NY	Present				
Zip Code	12725	Fire Extinguisher 🔽	New in 2015			
Time Zone	Eastern	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 Steps				
Shelter Working Room	Make Ekto M	odel 8810 (s/n 1977-1)	Shelter Size 640 cuft			
Shelter Clean	Notes The shelter is seriously deterior used for other than batteries a on the sample tower.	prated with rot and mold on the nd the solar panel mount. A sm	walls. However, the shelter is no longer nall foot-print system has been installed			
Site OK	Notes					
Driving Directions From Liberty, NY go west on route 52 toward Grahamsville. Just before reaching Grahamsville, turn left onto County Road 19 to Claryville. Stay on 19 through Claryville and turn left on Wildcat Mt Road immediately after crossing the bridge at the far end of town. Bear right and follow the semi-paved road for about 0.7 miles to the fork. Go right at the fork and turn left at the first house on the left. The site is about .75 miles up the dirt road behind the house.						

Fie	eld Sy	stems Data Fo	orm				F-02058-	1500-S3-rev002
Site	e ID	CAT175	Technician	Eric Hebert		Site Visit Date	11/18/2024	
1	Are win being in	d speed and direction fluenced by obstructio	sensors sited so ons?	as to avoid		N/A		
2	Are wind (i.e. wind horizont tower in	d sensors mounted so d sensors should be me ally extended boom > to the prevailing wind	as to minimize ounted atop the 2x the max dian	tower effects? e tower or on a meter of the		N/A		
3	Are the	tower and sensors plu	mb?		✓	N/A		
4	Are the avoid ra	temperature shields p diated heat sources su	ointed north or ch as buildings	positioned to , walls, etc?	✓			
5	Are tem conditio surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped gwater should be avoi	ors sited to avo sensors should . Ridges, hollov ded)	id unnatural be natural vs, and areas of				
6	Is the so	lar radiation sensor p	lumb?		✓	N/A		
7	Is it site	d to avoid shading, or	any artificial o	r reflected light?	✓	N/A		
8	Is the ra	in gauge plumb?			✓	N/A		
9	Is it site towers, o	d to avoid sheltering e etc?	ffects from buil	dings, trees,	✓	N/A		
10	Is the su facing n	rface wetness sensor s orth?	ited with the g	rid surface	✓	N/A		
11	Is it inc	lined approximately 3	0 degrees?		✓	N/A		
4 5 7 8 9 10 11	Are the avoid ra Are tem conditio surface a standing Is the so Is the so Is the ra Is the ra Is the ra Is the su facing m Is it inc	temperature shields p diated heat sources su perature and RH sens ns? (i.e. ground below and not steeply sloped y water should be avoi lar radiation sensor p d to avoid shading, or in gauge plumb? d to avoid sheltering e etc? rface wetness sensor s orth? lined approximately 3	ointed north or ich as buildings ors sited to avo sensors should . Ridges, hollow ded) lumb? any artificial of ffects from buil ited with the gr 0 degrees?	positioned to , walls, etc? id unnatural be natural vs, and areas of r reflected light? ddings, trees, rid surface		N/A N/A N/A N/A N/A N/A		

F-02058-1500-S4-rev002

Site	e ID	CAT175	Technician	Eric Hebert		Site Visit Date 11/	/18/2024	
1 2 3	Do all th condition Are all th reporting Are the s	e meterological sensor n, and well maintained he meteorological sens g data? shields for the temper	rs appear to be 1? sors operationa ature and RH s	intact, in good l online, and ensors clean?	>	Temperature only Temperature only		
4	Are the a	aspirated motors worl	king?		✓	Natural aspiration		
5	Is the sol scratche	lar radiation sensor's s?	lens clean and f	iree of	✓	N/A		
6	Is the su	rface wetness sensor g	grid clean and u	ndamaged?		N/A		
7	Are the s condition	sensor signal and pow n, and well maintained	er cables intact 1?	, in good		N/A		
8	Are the s from the	sensor signal and pow elements and well ma	er cable connec aintained?	tions protected		N/A		

Fi	eld Systems Data Form		F-02058-1500-S5-rev002
Site	CAT175 Technician Eric Hebert		Site Visit Date 11/18/2024
	Siting Criteria: Are the pollutant analyzers and deposition eq	uipr	nent 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	l mai	intenance
1	Do the analyzers and equipment appear to be in good condition and well maintained?	✓	Ozone not measured
2	Are the analyzers and monitors operational, on-line, and reporting data?	✓	
3	Describe ozone sample tube.		N/A
4	Describe dry dep sample tube.		3/8 teflon by 18 meters
5	Are in-line filters used in the ozone sample line? (if yes indicate location)		N/A
6	Are sample lines clean, free of kinks, moisture, and obstructions?	✓	
7	Is the zero air supply desiccant unsaturated?		N/A
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

Small foot-print site with just filter pack and temperature.

Fi	eld Sy	stems Data Fo	orm				F-0 2	2058-15	00-S6-rev002
Site	e ID	CAT175	Technician	Eric Hebert		Site Visit Date	e 11/18/2024	4	
	<u>DAS, se</u>	nsor translators, and p	eripheral equip	oment operation	<u>15 an</u>	<u>d maintenance</u>			
1 Do the DAS instruments appear to be in good condition and well maintained?									
2	Are all modem,	he components of the backup, etc)	DAS operationa	al? (printers,					
3	Do the a lightnin	nalyzer and sensor sig g protection circuitry?	gnal leads pass t	hrough		Met sensors only			
4	Are the well ma	signal connections pro intained?	otected from the	weather and					
5	Are the	signal leads connected	to the correct I	DAS channel?					
6	Are the ground	DAS, sensor translator ed?	rs, and shelter p	properly					
7	Does the	e instrument shelter ha	we a stable pow	er source?		Solar power			
8	Is the in	strument shelter temp	erature control	led?		Shelter not temper	ature contro	lled	
9	Is the m	et tower stable and gro	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	grounded?						
11	Tower o	omments?				Met tower removed	b		

The shelter is no longer used for other than storage and solar panel mount.

Field Systems Data F	orm				F-02	058-1	1500-S7-rev002
Site ID CAT175	Techni	cian Eric Hebe	rt	Site Visit Date	11/18/2024		
Documentation							
Does the site have the required	instrument	t and equipmen	<u>t manuals?</u>				
Wind speed sensorIWind direction sensorITemperature sensorIRelative humidity sensorISolar radiation sensorISurface wetness sensorIWind sensor translatorITemperature translatorISolar radiation translatorISolar radiation translatorISolar radiation translatorIFilter pack flow controllerIFilter pack MFC power supplyI		N/A V V V V V V V V V V V V V V V V V V V	Data logger Data logger Strip chart Computer Modem Printer Zero air pu Filter flow Surge prot UPS Lightning J Shelter hea Shelter air	r r recorder imp pump ector protection device iter conditioner	Yes □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □		N/A V V V V V V V V V V V V V V V V V V
Does the site have the require	d and most	recent QC doc	uments and	<u>report forms?</u>	~		
P Station Log	resent				Currei	nt	
SSRF					\checkmark		
Site Ops Manual		ct 2001					
HASP		ct 2015			\checkmark		
Field Ops Manual							
Calibration Reports							
Ozone z/s/p Control Charts	□ N/	A					
Preventive maintenance schedule							
1 Is the station log properly co	mpleted du	ring every site	visit? 🔽				
2 Are the Site Status Report Fo	orms being	completed and		ot present			
3 Are the chain-of-custody form sample transfer to and from	ns properly lab?	v used to docum	ient 🔽				
4 Are ozone z/s/p control chart current?	s properly	completed and	□ N/	/A			
Provide any additional explanatio natural or man-made, that may a	n (photogra ffect the mo	aph or sketch if mitoring param	inecessary)	regarding condition	ons listed a	bove, or	any other features,
The site copies of the SSRF are no I	onger kept o	onsite.					
· ·							

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Site	ID	CAT175	Technician	Eric Hebert	Site Visit Date	11/18/2024	
1	<u>Site ope</u> Has the course?	eration procedures site operator attendec If yes, when and who	l a formal CAS instructed?	STNET training	Trained by previous	operator	
2	Has the training	backup operator atter g course? If yes, when a	nded a formal and who instru	CASTNET			
3	Is the sit	e visited regularly on the second s	the required T	uesday 🗸			
4	Are the flollowed	standard CASTNET o d by the site operator?	perational pro	cedures being			
5	Is the sit the requ	e operator(s) knowled ired site activities? (in	geable of, and cluding docum	able to perform 🔽 entation)			
	Are regi	ılar operational QA/Q	<u>C checks perfo</u>	ormed on meteorolo	gical instruments?		
QC	Check P	erformed		Frequency		Compliant	
Mu	ltipoint (Calibrations	V	Semiannually		\checkmark	
Vis	ual Inspe	ctions	\checkmark	Weekly			
Tra	nslator Z	Zero/Span Tests (clima	tronics) 🗌	N/A			
Ma	nual Rai	n Gauge Test	\checkmark	N/A		\checkmark	
Confirm Reasonableness of Current Values				Weekly		\checkmark	
Tes	t Surface	Wetness Response	\checkmark	N/A			
	Are regi	ılar operational QA/Q	C checks perfo	ormed on the ozone	analyzer?		
QC	Check P	erformed		Frequency		Compliant	

		The second secon
Multi-point Calibrations	N/A	
Automatic Zero/Span Tests	N/A	
Manual Zero/Span Tests	N/A	\checkmark
Automatic Precision Level Tests	N/A	\checkmark
Manual Precision Level Test	N/A	\checkmark
Analyzer Diagnostics Tests	N/A	\checkmark
In-line Filter Replacement (at inlet)	N/A	\checkmark
In-line Filter Replacement (at analyze	N/A	\checkmark
Sample Line Check for Dirt/Water	N/A	\checkmark
Zero Air Desiccant Check	N/A	\checkmark

- **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 n	nanual z/s/p checks	monitored and
	reported? If yes, how?		

N/A
N/A
N/A

Fi	Field Systems Data Form					F-02058-1500-89-rev00					
Sit	e ID CAT175	Tec	hnician	Eric Hebert		Site Visit Date	11/18/2024				
	Site operation proc	<u>cedures</u>									
1	Is the filter pack be	eing changed ever	y Tuesda	y as scheduled?		Filter changed mor	nings 95% of the time				
2	Are the Site Status correctly?	Report Forms be	ing comp	leted and filed							
3	Are data download scheduled?	ls and backups bei	ing perfo	rmed as		No longer required					
4	Are general observ	ations being made	e and rec	orded? How?							
5	Are site supplies of fashion?	n-hand and replen	ished in a	a timely							
6	Are sample flow ra	ites recorded? How	w?		✓	SSRF, logbook					
7	Are samples sent to fashion?	o the lab on a regu	ılar sched	lule in a timely							
8	Are filters protecte and shipping? How	ed from contamina v?	tion dur	ing handling	✓	Clean gloves on an	nd off				
9	Are the site condition operations managed	ions reported regu er or staff?	larly to t	he field							
QC	Check Performed		Freq	uency			Compliant				
I	Multi-point MFC Ca	librations	✓ Semi	annually							
1	Flow System Leak C	hecks	✓ Weel	kly							
1	Filter Pack Inspectio	n	✓ Weel	kly							
1	Flow Rate Setting Cl	necks	✓ Weel	kly							
	Visual Check of Flow	v Rate Rotometer	✓ Weel	kly							
I	n-line Filter Inspect	ion/Replacement	 Semi 	annually							
5	Sample Line Check f	or Dirt/Water	✓ Weel	kly							

Field Systems Data Form						F-02058-150	0-S10-rev002
	Site ID	CAT175	Technician	Eric Hebert	Site Visit Date	11/18/2024	

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
DAS	Campbell	CR850	32796	000834
Elevation	Elevation	1	None	None
Filter pack flow pump	Brailsford	TD-4X2N	1016	none
Flow Rate	Арех	AXMC105LPMDPC	illegible	000904
Infrastructure	Infrastructure	none	none	none
Modem	Sierra wireless	GX440	10328	07184
Sample Tower	Aluma Tower	В	none	666359
Shield (10 meter)	RM Young	41003	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342VC	10177	06113
UPS	ProSine	1000w	unknown	04576

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number				
SPD	PD111-Eric Hebert-11/24/2024									
1	11/24/2024	Computer	Dell	07057	Inspiron 15	4H4MC12				
2	11/24/2024	DAS	Campbell	000405	CR3000	2522				
3	11/24/2024	Elevation	Elevation	None	1	None				
4	11/24/2024	Filter pack flow pump	Thomas	04857	107CAB18	060300020002				
5	11/24/2024	Flow Rate	Арех	000887	AXMC105LPMDPCV	illegible				
6	11/24/2024	Infrastructure	Infrastructure	none	none	none				
7	11/24/2024	Modem	Digi	07188	LR54	unknown				
8	11/24/2024	Ozone	ThermoElectron Inc	000615	49i A1NAA	1009241787				
9	11/24/2024	Ozone Standard	ThermoElectron Inc	000435	49i A3NAA	CM08200011				
10	11/24/2024	Sample Tower	Aluma Tower	03548	A	none				
11	11/24/2024	Shelter Temperature	Campbell	none	107-L	none				
12	11/24/2024	Siting Criteria	Siting Criteria	None	1	None				
13	11/24/2024	Temperature	RM Young	04314	41342	4011				
14	11/24/2024	Zero air pump	Werther International	06928	C 70/4	000822222				

DAS Time Max Error: 0

DAS Data Fo

Mfg	Serial Nu	ımber Site	Т	echnician	Site Visit Date	Parameter	Use Desc.
Campbell	2522	SPD	9111 E	Eric Hebert	11/24/2024	DAS	Primary
Das Date:	11/24/2024 14:34:00	Audit Date	11/24/2024 14:34:00	Mfg	Datel	Parameter	DAS
Das Day:	329	Audit Day	329	Serial Number	15510194	Tfer Desc.	Source generator (D
Low Channel	:	High Channel	:	Tfer ID	01320		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:	Slope	1.0000	0 Intercept	0.00000
0.0000	0.000	0.0000	0.0000	Cert Date	2/13/201	2 CorrCoff	1.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740135	Tfer Desc.	DVM
				Tfer ID	01311		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	Input I	OVM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.0000	V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	ıber Tag	Site	Тес	chnician	Site Visit l	Date Parar	neter	Owner ID
Apex	illegible		SPD111	Eri	ic Hebert	11/24/202	4 Flow F	Rate	000887
					Mfg	BIOS	I	Parameter Flow	v Rate
					Serial Number	148613]	Fer Desc. BIO	S 220-H
					Tfer ID				
					Slope	1	.00871 Int	ercept	0.00110
					Cert Date	2/1	6/2024 Co	rrCoff	0.99999
DAS 1:		DAS 2:			Cal Factor Z	ero	0.	01	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	: % Dif	Cal Factor F	ull Scale	0.	97	
1.75%	1.96%				Rotometer R	eading:	1.	45	
Desc.	Test type	Input l/n	n Input Corr_	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.01	l/m	l/m	
primary	leak check	0.000	0.000	0.00	0.000	0.02	l/m	l/m	
primary	test pt 1	1.537	1.520	1.55	0.000	1.50	l/m	l/m	-1.32%
primary	test pt 2	1.540	1.530	1.55	0.000	1.50	l/m	l/m	-1.96%
primary	test pt 3	1.542	1.530	1.55	0.000	1.50	l/m	l/m	-1.96%
Sensor Comp	onent Leak Tes	t		Conditio	on		Status pass		
Sensor Comp	onent Tubing C	ondition		Conditio	Good		Statu	<mark>s</mark> pass	
Sensor Comp	onent Filter Pos	ition		Conditio	Good		Statu	s pass	
Sensor Comp	onent Rotomete	er Conditio	n	Conditio	Clean and dry		Statu	<mark>s</mark> pass	
Sensor Comp	onent Moisture	Present		Conditio	No moisture pr	resent	Statu	s pass	
Sensor Component Filter Distance			Conditio	5.0 cm		Statu	<mark>s</mark> pass		
Sensor Component Filter Depth			Conditio	4.0 cm		Statu	s pass		
Sensor Comp	onent Filter Azir	muth		Conditio	n 110 deg		Statu	<mark>s</mark> pass	
Sensor Comp	onent System N	lemo		Conditio	Condition			s pass	

Ozone Data Form

Mfg	Serial Numbe	er Ta Site	Те	chnician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1009241787	SPD11	1 Ei	ric Hebert	11/24/2024	Ozone	000615
Slope: Intercept CorrCoff	1.00198 Slop 0.02563 Inter 0.99999 Corr	e:	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Parameter	er ozone c. Ozone primary stan
DAS 1:	DA	AS 2:		Slope	0.9997	O Intercept	0.31710
A Avg % Diff: A M	Max % Di A	Avg %Diff A	Max % Di	Cont Data	2/14/202		1 00000
0.0%	0.0%			Cert Date	2/14/202	- CorrColl	1.00000
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.50	0.18	0.25	ppb		0.07
primary	2	14.50	14.25	14.51	ppb		0.26
primary	3	33.21	32.92	32.82	ppb	-0.3	
primary	5	113.40	113.20	113.61	ppb	0.36	
Sensor Compone	ent Audit Pressu	ure	Conditi	on 739 mmHg		Status pass	
Sensor Compone	ent 26.6 degree	unobstructed ru	le Conditi	on True		Status pass	
Sensor Component Tree dewline >10m or below inlet				on True		Status pass	
Sensor Component ADT 1000-10000 vehicles further				on True		Status pass	
Sensor Component ADT <1000 vehicles further than			than Conditi	on True		Status pass	
Sensor Component Sample Train			Conditi	on Good		Status pass	
Sensor Compone	Inlet Filter C	ondition	Conditi	on Clean		Status pass	
Sensor Compone	ent Offset		Conditi	on -0.10		Status pass	
Sensor Compone	ent Span		Conditi	on 1.002		Status pass	
Sensor Compone	ent Zero Voltage	9	Conditi	on N/A		Status pass	
Sensor Compone	Ent Fullscale Vo	ltage	Conditi	on N/A		Status pass	
Sensor Compone	ent Cell A Freq.		Conditi	on 98.7 kHz		Status pass	
Sensor Compone	ent Cell A Noise	;	Conditi	on Not tested		Status pass	
Sensor Compone	Cell A Flow		Conditi	on 0.68 lpm		Status pass	
Sensor Compone	ent Cell A Press	sure	Conditi	on 713.1 mmHg		Status pass	
Sensor Compone	Cell A Tmp.		Conditi	on Not tested		Status pass	
Sensor Compone	ent Cell B Freq.		Conditi	on 93.3 kHz		Status pass	
Sensor Compone	Cell B Noise	;	Conditi	on Not tested		Status pass	
Sensor Compone	Cell B Flow		Conditi	on 0.69 lpm		Status pass	
Sensor Compone	ent Cell B Press	sure	Conditi	on 712.8 mmHg		Status pass	
Sensor Component Nafion dryer installed			Conditi	on False		Status pass	
Sensor Component System Memo				on		Status pass	

Temperature Data Form

Mfg	Serial Number	Tag Site	1	Technician		Site V	isit Date	Param	eter	Owner ID	
RM Young	4011	SPD111		Eric H	ebert	11/24	/2024	Temper	ature	04314	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Ser	ial Number	61960	02	Tf	fer Desc. RI	D	
				Tfe	er ID	01224					
DAS 1: DAS 2:				Slo	ре	1.00000 Intercept		rcept	pt 0.00046		
Abs Avg Err Abs Max Err Abs Avg Err Abs Max			Max Err	Cer	rt Date		9/26/202	3 Cor	rCoff	1.00000	
0.17	0.29										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	0.11	0.11		0.000		0.1		С	-0.01	
primary	Temp Mid Range	24.08	24.08	8	0.000		23.	8	С	-0.29	
primary	Temp High Range	44.57	44.57	7	0.000		44.	4	С	-0.2	
Sensor Con	ponent Shield		Condi	tion N	/loderately clea	an		Status	pass		
Sensor Component Blower			Condi	tion N	I/A			Status	pass		
Sensor Component Properly Sited			Condi	ondition Properly sited				Status	pass		
Sensor Con	ponent System Memo)	Condi	Condition				Status	pass		

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	SPD111	Eric Hebert	11/24/2024	Shelter Temperature	none
DAS 1: Abs Avg Err Abs 0.28	DAS 2:Max ErrAbs Avg0.28	Err Abs Max Err	Mfg Serial Number Tfer ID	Fluke 6196002 01224	Parameter She	ter Temperature
			Slope Cert Date	1.0000 9/26/202	0 Intercept 23 CorrCoff	0.00046

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	20.86	20.86	0.000	21.1	С	0.28
Sensor Component System Memo			Condition		Status	pass	

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition	Status pass
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	SPD111	Technician Eric Hel	bert Site Visit Date 11/24/2024
Shelter	Make	Shelter Model	Shelter Size
Ekto		8810	640 cuft

Sensor Component Sample Tower Type	Condition	Туре А	Status	pass
Sensor Component Conduit	Condition	N/A	Status	pass
Sensor Component Met Tower	Condition	N/A	Status	pass
Sensor Component Moisture Trap	Condition	Installed	Status	pass
Sensor Component Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component Power Cables	Condition	Good	Status	pass
Sensor Component Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component Rotometer	Condition	Installed	Status	pass
Sensor Component Sample Tower	Condition	Fair	Status	pass
Sensor Component Shelter Condition	Condition	Poor	Status	Fail
Sensor Component Shelter Door	Condition	Fair	Status	pass
Sensor Component Shelter Roof	Condition	Good	Status	pass
Sensor Component Shelter Floor	Condition	Poor	Status	Fail
Sensor Component Shelter walls	Condition	Poor	Status	Fail
Sensor Component Excessive mold present	Condition	Fair	Status	pass
Sensor Component Signal Cable	Condition	Good	Status	pass
Sensor Component Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component Sample Train	Condition	Good	Status	pass
Sensor Component System Memo	Condition		Status	pass

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Site ID SPD111	Technician Eric Hebert	Site Visit Date 11/24	4/2024			
		USCS Man	Ausmus			
Site Sponsor (agency)	EPA					
Operating Group	private	Map Scale				
AQS #	47-025-9991	Map Date				
Meteorological Type	R.M. Young					
Air Pollutant Analyzer	Ozone	QAPP Latitude				
Deposition Measurement	dry, wet	QAPP Longitude				
Land Use	Agriculture, dairy, woodland - mixed	QAPP Elevation Meters				
Terrain	rolling / complex	QAPP Declination				
Conforms to MLM	Marginally	QAPP Declination Date				
Site Telephone	4238698159	Audit Latitude	36.46983			
Site Address 1	718 Russell Hill Road	Audit Longitude	-83.826511			
Site Address 2		Audit Elevation	361			
County	Claiborne	Audit Declination	-5.1			
City, State	, TN	Present				
Zip Code	37870	Fire Extinguisher 🗹	New in 2015			
Time Zone	Eastern	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 Steps ✓				
Shelter Working Room	Make Ekto M	odel 8810	Shelter Size 640 cuft			
Shelter Clean	¹ Notes The shelter has deteriorated severely during the last year. The site operator is currently obtaining optimates for repair to the floor and wells.					
Site OK	Notes					
Driving Directions From	I-75 take exit 134, 25W to 63 and LaFolle	tte. Continue through LaFollet	te on 63 into Claiborne county. Just			
past i will en	nile marker 6 and the B&B gas and tire s d at a Tee after about 150 vds. Turn left	tation in Claiborne county, turn at the Tee and then an immedi	right on an unmarked road. This road ate right at the next intersection onto			
Russe	II Hill Rd. The site will be on the right in t	he pasture behind the silo.				

						F-02058-	-1500-S3-rev002
Site ID	SPD111	Technician	Eric Hebert		Site Visit Date	11/24/2024	
1 Ar bei	re wind speed and direction ing influenced by obstruction	sensors sited so ons?	as to avoid		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)					N/A		
3 Are the tower and sensors plumb?					N/A		
4 Are the temperature shields pointed north or positioned to avoid radiated heat sources such as buildings, walls, etc?				✓			
5 Ar con sun sta	re temperature and RH sens nditions? (i.e. ground below rface and not steeply sloped unding water should be avoi	ors sited to avoi sensors should l. Ridges, hollow ded)	id unnatural be natural rs, and areas of				
6 Ist	the solar radiation sensor p	lumb?	٦	✓	N/A		
7 Is i	it sited to avoid shading, or	any artificial or	reflected light?	✓	N/A		
8 Is t	the rain gauge plumb?		٦	✓	N/A		
9 Is i tov	it sited to avoid sheltering e wers, etc?	ffects from buil	dings, trees,	<	N/A		
10 Is t fac	the surface wetness sensor s sing north?	sited with the gr	id surface	✓	N/A		
11 Is i	it inclined approximately 3	0 degrees?		~	N/A		

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Site	e ID	SPD111	Technician	Eric Hebert		Site Visit Date	11/24/2024	
1	Do all th conditio	e meterological sensor n, and well maintained	rs appear to be l?	intact, in good	✓			
2	2 Are all the meteorological sensors operational online, and reporting data?							
3	3 Are the shields for the temperature and RH sensors clean?							
4	4 Are the aspirated motors working?					N/A		
5	5 Is the solar radiation sensor's lens clean and free of scratches?			✓	N/A			
6	Is the su	rface wetness sensor g	rid clean and u	ndamaged?		N/A		
7	Are the condition	sensor signal and powe n, and well maintained	er cables intact l?	, in good	✓	Signs of wear		
8	Are the s from the	sensor signal and powe e elements and well ma	er cable connec intained?	tions protected	✓			

Fi	eld Sy	stems Data Fo	rm			F-02058-1500-S5-rev002			
Site	e ID	SPD111	Technician E	Fric Hebert		Site Visit Date 11/24/2024			
	<u>Siting C</u>	Criteria: Are the polluta	ant analyzers an	d deposition eq	<u>uipn</u>	ment sited in accordance with 40 CFR 58, Appendix E			
1	Do the sunrestri	sample inlets have at least test in the second strain the second strain the second strain test is the second strain test i	ast a 270 degree	arc of					
2	Are the	sample inlets 3 - 15 me	eters above the g	round?	✓				
3	Are the sample inlets > 1 meter from any major obstruction, and 20 meters from trees?								
	<u>Polluta</u>	nt analyzers and deposi	tion equipment	operations and	mai	<u>uintenance</u>			
1	Do the a condition	analyzers and equipme on and well maintained	nt appear to be i ?	n good					
2	Are the reportin	analyzers and monitor 1g data?	rs operational, or	1-line, and					
3	Describ	e ozone sample tube.				1/4 teflon by 12 meters			
4	Describ	e dry dep sample tube.				3/8 teflon by 12 meters			
5	Are in-l indicate	ine filters used in the o e location)	zone sample line	e? (if yes		At inlet only			
6	Are san obstruc	nple lines clean, free of tions?	kinks, moisture,	and	✓				
7	Is the ze	ero air supply desiccan	t unsaturated?		✓				
8	Are the	re moisture traps in the	e sample lines?		✓	Flow line only			
9	Is there clean?	a rotometer in the dry	deposition filter	line, and is it		Clean and dry			
Fi	Field Systems Data Form					F-02058-1500-S6-rev002			
--	-------------------------	---	-------------------	----------------	---	------------------------	------------	----------	--
Site	e ID	SPD111	Technician	Eric Hebert		Site Visit Date	11/24/2024	4	
DAS, sensor translators, and peripheral equipment operations						<u>1d maintenance</u>			
1	Do the l well ma	DAS instruments appea intained?	ar to be in good	condition and					
2	Are all t modem,	the components of the backup, etc)	DAS operation	al? (printers,	✓				
3	Do the a lightnin	nalyzer and sensor sig g protection circuitry?	gnal leads pass (through	✓	Met sensors only			
4	Are the well ma	signal connections pro intained?	otected from the	e weather and	✓				
5	Are the	signal leads connected	to the correct	DAS channel?	✓				
6	Are the grounde	DAS, sensor translator ed?	rs, and shelter j	properly	✓				
7	Does the	e instrument shelter ha	ave a stable pow	ver source?	✓				
8	Is the in	strument shelter temp	erature control	led?	✓				
9	Is the m	et tower stable and gro	ounded?			Stable		Grounded	
10	Is the sa	mple tower stable and	grounded?						
11	Tower o	comments?				Met tower removed			

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 sample tower is an older Type A tower and some small cracks are present in the tower legs. The tower clamps are very rusty. The current tower location is meeting NADP siting criteria.

Fiel	d Sy	stems Data	ı For	·m				F-02	058 -1	1500- S7-rev 002
Site I	D	SPD111		Techn	ician	Eric Hebert	Site Visit Da	te 11/24/2024		
D .		- 1								
<u>D0</u>	cument	<u>ation</u>								
<u>Do</u>	es the si	<u>ite have the requ</u>	ired ins	strumen	t and	<u>equipment manua</u>	<u>uls?</u>			
Wind	sneed s	ensor	Yes			A Data k	oger	Yes		N/A
Wind	directi	on sensor				Data k Data k)gger			
Temp	erature	sensor				Strip c	hart recorder			
Relati	ve hum	idity sensor				Сотр	iter	\checkmark		
Solar	radiati	on sensor				Moden	n		\checkmark	
Surfa	ce wetn	ess sensor				Printer	•			
Wind	sensor	translator				Zero a	ir pump			
Temp	erature	translator				Filter f	low pump		\checkmark	
Humi	dity sen	sor translator				Surge	protector			\checkmark
Solar	radiati	on translator				UPS	•	\checkmark		
Тірріі	ng buck	et rain gauge				Lightn	ing protection devi	ice		\checkmark
Ozone	e analyz	zer	\checkmark			Shelter	• heater		\checkmark	
Filter	pack fl	ow controller		\checkmark		Shelter	· air conditioner	\checkmark		
Filter	pack M	IFC power suppl	у 🗌		\checkmark					
D	oes the	site have the req	uired a	nd mos	t rece	nt OC documents	and report forms?			
			Pres	ent				Currer	nt	
Statio	n Log		IICS						it.	
SSRF	n Log		L I							
Site O	os Mar	nual	[ov 20 ²	11				
HASP)		•		ov 20	и И				
Field	Ops Ma	anual	•		ulv 190					
Calib	ration F	Reports	•							
Ozone	e z/s/p (Control Charts	[
Preve	ntive m	aintenance sched	lule [
1 I	s the sta	ation log properl	y comp	leted du	uring (every site visit?	0			
2 A c	Are the arrent?	Site Status Repo	rt Forn	ıs being	; comp	oleted and	•			
3 A s	Are the ample t	chain-of-custody ransfer to and fr	forms om lab	properl ?	y used	l to document	2			
4 A c	Are ozoi urrent?	ne z/s/p control c	harts p	roperly	comp	leted and	Control charts not	t used		
							L			

Field Systems Data Form

SPD111 Technician Eric Hebert Site Visit Date 11/24/2024 Site ID Site operation procedures Trained by ESE employee EOH during site installation Has the site operator attended a formal CASTNET training 1 course? If yes, when and who instructed? 2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed? Is the site visited regularly on the required Tuesday ✓ 3 schedule? \checkmark Are the standard CASTNET operational procedures being 4 flollowed by the site operator? Is the site operator(s) knowledgeable of, and able to perform 5 the required site activities? (including documentation)

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

QC Check Performed	l
--------------------	---

Frequency

Multipoint Calibrations	\checkmark	Semiannually	✓
Visual Inspections	✓	N/A	✓
Translator Zero/Span Tests (climatronics)		N/A	✓
Manual Rain Gauge Test	\checkmark	N/A	✓
Confirm Reasonableness of Current Values	\checkmark	Weekly	✓
Test Surface Wetness Response	\checkmark	N/A	✓

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

QC	Check	Perf	ormed
χv	Chech		/I IIICu

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests Automatic Precision Level Tests Manual Precision Level Test Analyzer Diagnostics Tests In-line Filter Replacement (at inlet) In-line Filter Replacement (at analyze Sample Line Check for Dirt/Water **Zero Air Desiccant Check**

Frequency	
Semiannually	
Daily	
As needed	
Daily	
As needed	
Weekly	
Every 2 weeks	
N/A	
Weekly	
Weekly	

- 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?
- Are the automatic and manual z/s/p checks monitored and 3 reported? If yes, how?

	Unknown
✓	
✓	Call-in only

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:

Compliant

Compliant

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Fi	Field Systems Data Form					F-02058-1500-S9-rev002			
Sit	e ID	SPD111 Te	echnician	Eric Hebert		Site Visit Date	11/24/2024		
	<u>Site ope</u>	ration procedures							
1	Is the fi	lter pack being changed eve	ry Tuesd	ay as scheduled	? ✓	Filter changed after	noons		
2	Are the correctl	Site Status Report Forms b y?	eing com	pleted and filed	✓				
3	Are dat schedul	a downloads and backups b ed?	eing perf	formed as		No longer required			
4	Are gen	eral observations being ma	de and re	corded? How?	✓	SSRF, logbook			
5	Are site fashion	supplies on-hand and reple ?	nished in	a timely	✓				
6	Are sample flow rates recorded? How?			✓	SSRF, call-in				
7	Are san fashion	nples sent to the lab on a reg ?	gular scho	edule in a timely					
8	Are filte and shij	ers protected from contamin oping? How?	nation du	ring handling	✓	Clean gloves on and off			
9	Are the operation	site conditions reported reg ons manager or staff?	gularly to	the field	✓				
QC	Check P	erformed	Fre	equency			Compliant		
]	Multi-poi	nt MFC Calibrations	✓ Ser	niannually					
]	Flow Syst	em Leak Checks	✓ We	ekly					
]	Filter Pac	k Inspection	✓ We	ekly			\checkmark		
]	Flow Rate	e Setting Checks	🖌 We	ekly			\checkmark		
1	Visual Ch	eck of Flow Rate Rotometer	r 🗹 We	ekly			\checkmark		
]	In-line Fil	ter Inspection/Replacement	Ser Ser	niannually			\checkmark		
\$	Sample Li	ine Check for Dirt/Water	✓ We	ekly					

Field	Systems	Data	Form	
IIUU	Dystellis	Data		

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Technician Eric Hebert

Site Visit Date 11/24/2024

Site Visit Sensors

SPD111

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	Inspiron 15	4H4MC12	07057
DAS	Campbell	CR3000	2522	000405
Elevation	Elevation	1	None	None
Filter pack flow pump	Thomas	107CAB18	060300020002	04857
Flow Rate	Арех	AXMC105LPMDPC	illegible	000887
Infrastructure	Infrastructure	none	none	none
Modem	Digi	LR54	unknown	07188
Ozone	ThermoElectron Inc	49i A1NAA	1009241787	000615
Ozone Standard	ThermoElectron Inc	49i A3NAA	CM08200011	000435
Sample Tower	Aluma Tower	A	none	03548
Shelter Temperature	Campbell	107-L	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342	4011	04314
Zero air pump	Werther International	C 70/4	000822222	06928

Site Inventory by Site Visit

Site V	'isit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
CHEI	85-Martin	v Valvur-12/05/2024				
1	12/5/2024	DAS	Environmental Sys Corp	CHE146999	8864	G20059
2	12/5/2024	Ozone	Teledyne	132357	T400	6546

Ozone Data Form

Mfg	Serial Numbe	er Ta Site	Те	chnician	Site Visit Date	Parameter	Owner ID
Teledyne	6546	CHE185	5 Ma	artin Valvur	12/05/2024	Ozone	132357
Slope:	0.98317 Slop -0.34900 Inter 0.99999 Corr	e: () rcept () rCoff ()	0.00000 0.00000 0.00000	Mfg Serial Number	ThermoElectron CM23147126	Inc Paramet	er ozone c. Ozone primary stan
				Tfer ID	01116		
DAS 1:	DA	AS 2:		Slope	0.9926	0 Intercept	0.04790
A Avg % Diff: A 0.0%	Max % Di A 0.0%	Avg %Diff A	Max % Di	Cert Date	4/10/202	24 CorrCoff	0.99999
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.50	0.45	0.30	ppb		-0.15
primary	2	15.42	15.39	14.69	ppb		-0.7
primary	3	34.91	34.92	33.93	ppb	-2.88	
primary	4	65.01	65.07	63.42	ppb	-2.57	
primary		114.80	114.94	112.80	ррв	-1.88	
Sensor Compon	ent 20.6 degree			on True		Status pass	
Sensor Compon	ent Tree dewline	e >10m or below	inlet Condition			Status pass	
Sensor Compon	ent ADT 1000-1	0000 vehicles fu	Irther Condition	on True		Status pass	
Sensor Compon	ent ADT <1000	vehicles further	than Condition	n True		Status pass	
Sensor Compone	ent Sample Trai	n	Condition	on Good		Status pass	
Sensor Compone	ent Inlet Filter C	ondition	Conditio	on Clean		Status pass	
Sensor Compone	ent Offset		Conditio	on -1.7		Status pass	
Sensor Compone	<mark>ent</mark> Span		Conditio	0.999		Status pass	
Sensor Compone	ent Zero Voltage	Э	Conditio	on N/A		Status pass	
Sensor Compone	ent Fullscale Vo	ltage	Conditio	n N/A		Status pass	
Sensor Compon	ent Cell A Freq.		Conditio	n N/A		Status pass	
Sensor Compon	ent Cell A Noise	•	Conditio	on N/A		Status pass	
Sensor Compon	ent Cell A Flow		Conditio	0.53 lpm		Status pass	
Sensor Compone	ent Cell A Press	sure	Conditio	on 26.6 inHg		Status pass	
Sensor Compone	ent Cell A Tmp.		Conditio	on 27.2 C		Status pass	
Sensor Compone	ent Cell B Freq.		Conditio	Dn N/A		Status pass	
Sensor Compone	ent Cell B Noise	;	Conditio	n N/A		Status pass	
Sensor Compone	ent Cell B Flow		Conditio	n N/A		Status pass	
Sensor Compone	ent Cell B Press	sure	Conditio	n N/A		Status pass	
Sensor Compone	ent Nafion dryer	installed	Conditio	n False		Status pass	
Sensor Compone	ent System Mer	no	Conditio	on		Status pass	

Site Inventory by Site Visit

Site V	isit Date/	Parameter	Mfg	Owner ID	Model Number	Serial Number
CKT	136-Eric H	ebert-12/07/2024				
1	12/7/2024	DAS	Campbell	000345	CR3000	2124
2	12/7/2024	Ozone	ThermoElectron Inc	000678	49i A1NAA	1030244791
3	12/7/2024	Ozone Standard	ThermoElectron Inc	000200	49i A3NAA	0607315738
4	12/7/2024	Zero air pump	Werther International	000894	C 120/TC	001121939

Ozone Data Form

Mfg	Serial Number	r Ta Site	Те	echnician	Site Visit Date	Parameter	Owner ID
ThermoElectron Inc	1030244791	CKT136) E	ric Hebert	12/07/2024	Ozone	000678
Slope: Intercept CorrCoff DAS 1: A Avg % Diff: A N 0.0%	0.99265 Slope 0.06494 Inter 0.99998 Corr DA Max % Di A 4 0.0%	e: () cept () Coff () Avg %Diff ()	0.00000 0.00000 0.00000 Max % Di	Mfg Serial Number Tfer ID Slope Cert Date	ThermoElectron 1180030022 01114 0.9997 2/14/202	Inc Paramete Tfer Des 0 Intercept 24 CorrCoff	er ozone c. Ozone primary stan 0.31710 1.00000
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.29	-0.02	0.13	ppb	Refreibit	0.15
primary	2	15.21	14.90	14.74	ppb		-0.16
primary	3	34.71	34.43	34.07	ppb	-1.05	
primary	4	67.80	67.55	66.50	ppb	-1.57	
primary	5	113.90	113.70	113.10	ppb	-0.53	
Sensor Compone	ent Audit Pressu	re	Conditi	on 733 mmHg		Status pass	
Sensor Compone	ent 26.6 degree	unobstructed ru	lle Conditi	on True		Status pass	
Sensor Compone	Tree dewline	>10m or below	inlet Conditi	on True		Status pass	
Sensor Compone	ent ADT 1000-10	0000 vehicles fu	Irther Conditi	on True		Status pass	
Sensor Compone	ent ADT <1000 v	ehicles further	than Conditi	on True		Status pass	
Sensor Compone	ent Sample Trair	ı	Conditi	on Good		Status pass	
Sensor Compone	ent Inlet Filter Co	ondition	Conditi	on Clean		Status pass	
Sensor Compone	ent Offset		Conditi	on 0.000		Status pass	
Sensor Compone	ent Span		Conditi	on 0.999		Status pass	
Sensor Compone	ent Zero Voltage	•	Conditi	on N/A		Status pass	
Sensor Compone	ent Fullscale Vol	tage	Conditi	on N/A		Status pass	
Sensor Compone	ent Cell A Freq.		Conditi	on 89.8 kHz		Status pass	
Sensor Compone	ent Cell A Noise		Conditi	on Not tested		Status pass	
Sensor Compone	ent Cell A Flow		Conditi	on 0.70 lpm		Status pass	
Sensor Compone	ent Cell A Press	ure	Conditi	on 706.5 mmHg		Status pass	
Sensor Compone	ent Cell A Tmp.		Conditi	on 34.2 C		Status pass	
Sensor Compone	ent Cell B Freq.		Conditi	on 87.3 kHz		Status pass	
Sensor Compone	ent Cell B Noise		Conditi	on Not tested		Status pass	
Sensor Compone	ent Cell B Flow		Conditi	on 0.69 lpm		Status pass	
Sensor Compone	ent Cell B Press	ure	Conditi	on 707.1 mmHg		Status pass	
Sensor Compone	ent Nafion dryer	installed	Conditi	on False		Status pass	
Sensor Compone	ent System Mem	10	Conditi	on		Status pass	

Site Inventory by Site Visit

Site V	isit Date/	Parameter	Mfg	Owner ID	Model Number	Serial Number
CND.	125-Sandy	Grenville-12/08/2024				
1	12/8/2024	DAS	Campbell	000499	CR3000	3816
2	12/8/2024	Ozone	ThermoElectron Inc	000614	49i A1NAA	1009241794
3	12/8/2024	Ozone Standard	ThermoElectron Inc	000329	49i A3NAA	0622717853
4	12/8/2024	Zero air pump	Werther International	06868	C 70/4	000814284

Ozone Data Form

Mfg	Serial Numb	er Ta Site	Te	echnician	Site Visit Date	Parameter	Owner ID
ThermoElectron	Inc 1009241794	CND1	25 S	andy Grenville	12/08/2024	Ozone	000614
Slope: Intercept CorrCoff	1.00520 Slop 0.15701 Integration 0.999999 Corr	pe: ercept rCoff	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Paramet	er ozone c. Ozone primary stan
DAS 1:	D	AS 2:		Slope	0.9997	'0 Intercent	0.31710
A Avg % Diff:	A Max % Di A	Avg %Diff	A Max % Di	Stope	0/44/000		1 00000
0.0%	0.0%			Cert Date	2/14/202	⁴ CorrCoff	1.00000
UseDescription	1 ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.33	0.01	0.33	ppb		0.32
primary	2	15.07	14.76	14.81	ppb		0.05
primary	3	34.87	34.59	35.00	ppb	1.18	
primary	4	68.98	68./3	69.10	ppb	0.54	
Sensor Comp	onent Audit Press	sure	Condit	ion 750 mmHg	ppo	Status pass	
Sensor Comp	onent 26.6 degree	e unobstructed	rule Condit	ion True		Status pass	
Sensor Comp	onent Tree dewlir	ne >10m or belo	w inlet Condit	ion True		Status pass	
Sensor Comp	onent ADT 1000-	10000 vehicles	further Condit	ion True		Status pass	
Sensor Comp	onent ADT <1000) vehicles furthe	r than Condit	ion True		Status pass	
Sensor Comp	onent Sample Tra	ain	Condit	ion Good		Status pass	
Sensor Comp	onent Inlet Filter (Condition	Condit	ion Clean		Status pass	
Sensor Comp	onent Offset		Condit	ion -0.20		Status pass	
Sensor Comp	onent Span		Condit	ion 1.038		Status pass	
Sensor Comp	onent Zero Voltag	je	Condit	ion N/A		Status pass	
Sensor Comp	onent Fullscale V	oltage	Condit	ion N/A		Status pass	
Sensor Comp	onent Cell A Freq		Condit	ion 105 kHz		Status pass	
Sensor Comp	onent Cell A Nois	e	Condit	ion Not tested		Status pass	
Sensor Comp	onent Cell A Flow	1	Condit	ion 0.73 lpm		Status pass	
Sensor Comp	onent Cell A Pres	sure	Condit	ion 711.7 mmHg		Status pass	
Sensor Comp	onent Cell A Tmp	•	Condit	ion Not tested		Status pass	
Sensor Comp	onent Cell B Freq		Condit	ion 96 kHz		Status pass	
Sensor Comp	onent Cell B Nois	e	Condit	ion Not tested		Status pass	
Sensor Comp	onent Cell B Flow		Condit	ion 0.72 lpm		Status pass	
Sensor Comp	onent Cell B Pres	sure	Condit	ion 711.1 mmHg		Status pass	
Sensor Comp	onent Nafion drye	er installed	Condit	ion True		Status pass	
Sensor Comp	onent System Me	mo	Condit	ion		Status pass	

Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
СОЙ	V137-Eric H	Hebert-12/09/2024				
1	12/9/2024	Computer	Dell	07049	Inspiron 15	1K2MC12
2	12/9/2024	DAS	Campbell	000401	CR3000	2529
3	12/9/2024	elevation	Elevation	none	1	None
4	12/9/2024	Filter pack flow pump	Thomas	02758	107CAB18	001871
5	12/9/2024	Flow Rate	Арех	000555	AXMC105LPMDPCV	illegible
6	12/9/2024	Infrastructure	Infrastructure	none	none	none
7	12/9/2024	Modem	Digi	07164	LR54	unknown
8	12/9/2024	Ozone	ThermoElectron Inc	000684	49i A1NAA	1030244795
9	12/9/2024	Ozone Standard	ThermoElectron Inc	000882	49i A3NAA	1200706582
10	12/9/2024	Sample Tower	Aluma Tower	03499	A	none
11	12/9/2024	Shelter Temperature	Campbell	none	107-L	none
12	12/9/2024	Siting Criteria	Siting Criteria	None	1	None
13	12/9/2024	Temperature	RM Young	02934	41342	none
14	12/9/2024	UPS	APC	none	650	unknown
15	12/9/2024	Zero air pump	Werther International	06940	C 70/4	000821897

DAS Data Form

DAS Time Max Error: 0.02

Mfg	Serial Nu	mber Site	e .	Technician	Site Visit Date	Parameter	Use Desc.
Campbell	2529	CC	OW137	Eric Hebert	12/09/2024	DAS	Primary
Das Date:	12/9 /2024	Audit Date	12/9 /2024	Mfg	Datel	Parameter	DAS
Das Day:	344	Audit Day	344	Serial Number	15510194	Tfer Desc.	Source generator (D
Low Channel:		High Chann	iel:	Tfer ID	01320		
Avg Diff:	Max Diff:	Avg Diff:	Max Diff:	Slope	1.0000	0 Intercept	0.00000
0.0000	0.0000	0.000	0.0000	Cert Date	2/13/201	2 CorrCoff	1.00000
				Mfg	Fluke	Parameter	DAS
				Serial Number	95740135	Tfer Desc.	DVM
				Tfer ID	01311		
				Slope	1.0000	0 Intercept	0.00000
				Cert Date	1/31/202	4 CorrCoff	1.00000
Channel	Input D	VM Output	DAS Output	InputUnit	OutputUnit	Difference	
4	0.0000	0.0000	0.000	0 V	V	0.0000	

Flow Data Form

Mfg	Serial Nun	nber Tag	Site	Tee	chnician	Site Visit I	Date Paran	neter	Owner ID
Apex	illegible		COW137	Er	ic Hebert	12/09/2024	Flow R	late	000555
					Mfg	BIOS	P	arameter Flo	w Rate
					Serial Number	148613	Т	fer Desc. BIC	DS 220-H
					Tfer ID	01421			
					Slope	1	.00871 Inte	ercept	0.00110
					Cert Date	2/1	6/2024 Co l	rrCoff	0.99999
DAS 1:		DAS 2:			Cal Factor Z	ero	0.0	04	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	x % Dif	Cal Factor F	ull Scale		1	
0.22%	0.67%				Rotometer R	eading:	1.	55	
Desc.	Test type	Input l/n	n Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignal	PctDifference
primary	pump off	0.000	0.000	0.00	0.000	0.04	l/m	l/m	
primary	leak check	0.000	0.000	0.02	0.000	0.05	l/m	l/m	
primary	test pt 1	1.509	1.490	1.51	0.000	1.50	l/m	l/m	0.67%
primary	test pt 2	1.510	1.500	1.51	0.000	1.50	l/m	l/m	0.00%
primary	test pt 3	1.510	1.500	1.51	0.000	1.50	l/m	l/m	0.00%
Sensor Comp	onent Leak Tes	st		Conditio	on		Statu	s pass	
Sensor Comp	onent Tubing C	ondition		Conditio	n Good		Status	s pass	
Sensor Comp	onent Filter Pos	sition		Conditio	n Good		Statu	s pass	
Sensor Comp	onent Rotomete	er Conditio	n	Conditio	Clean and dry		Statu	pass	
Sensor Comp	onent Moisture	Present		Conditio	n No moisture pr	resent	Status	s pass	
Sensor Comp	onent Filter Dis	tance		Conditio	n 5.5 cm		Statu	s pass	
Sensor Comp	onent Filter Dep	oth		Conditio	n 1.0 cm		Status	s pass	
Sensor Comp	onent Filter Azi	muth		Conditio	n 120 deg		Status	s pass	
Sensor Comp	onent System N	Лето		Conditio	n		Statu	pass	

Ozone Data Form

Mfg		Serial Num	ber Tag	Site		Te	chnician	Site Visit Date	Param	eter	Owner ID	
ThermoElect	ron Inc	103024479	5	COW13	7	Er	ic Hebert	12/09/2024	Ozone		000684	
Slope: Intercept CorrCoff:		0.98867 Slo 0.56770 In 0.99999 Co	ope: tercept orrCoff:).00000).00000).00000)))	Mfg Serial Number	ThermoElectron 1180030022	Inc Pr	aramete fer Desc	r ozone Ozone primary sta	n
DAC 1.		,					Tier ID	01114				-
DAS 1: A Avg % Di 0.0	iff: A N %	/lax % Dif 0.0%	DAS 2: A Avg %	Diff A	Max %	% Dif	Slope Cert Date	0.9997	²⁰ Inte ²⁴ Cor	rcept rCoff	0.31710]
UseDescrip	otion	ConcGroup	Tfe	r Raw	Tf	er Corr	Site	Site Unit	RelPe	rDif	AbsDif	
primary	y	1	0	0.57		0.25	-0.19	ppb			-0.44	
primary	y v	3	3	5.90 5.10		15.60 84.82	33 54	ppb ppb		-3 74	-0.66	
primary	y y	4	6	9.29		59.04	67.72	ppb		-1.93		
primary	y	5	10	5.60	1	05.39	103.70	ppb		-1.62		
Sensor Co	mpone	ent Audit Pres	sure			Conditi	on 702 mmHg		Status	pass		
Sensor Co	mpone	ent 26.6 degre	ee unobs	tructed ru	le	Conditi	on True		Status	pass		
Sensor Co	mpone	nt Tree dewl	ine >10m	or below	inlet	Conditi	on True		Status	pass		
Sensor Co	mpone	ent ADT 1000	-10000 v	ehicles fu	rther t	Conditi	on True		Status	pass		
Sensor Co	mpone	ent ADT <100	0 vehicle	s further	than 5	Conditi	on True		Status	pass		
Sensor Co	mpone	ent Sample T	ain			Conditi	on Good		Status	pass		
Sensor Co	mpone	ent Inlet Filter	Conditio	n		Conditi	on Moderately cle	an	Status	pass		
Sensor Co	mpone	ent Offset				Conditi	on -0.80		Status	pass		
Sensor Co	mpone	ent Span				Conditi	on 1.012		Status	pass		
Sensor Co	mpone	ent Zero Volta	ige			Conditi	on N/A		Status	pass		
Sensor Co	mpone	ent Fullscale V	/oltage			Conditi	on N/A		Status	pass		
Sensor Co	mpone	ent Cell A Fre	q.			Conditi	on 103.5 kHz		Status	pass		
Sensor Co	mpone	ent Cell A Noi	se			Conditi	on Not tested		Status	pass		
Sensor Co	mpone	ent Cell A Flor	N			Conditi	on 0.67 lpm		Status	pass		
Sensor Co	mpone	ent Cell A Pre	ssure			Conditi	on 637.7 mmHg		Status	pass		
Sensor Co	mpone	ent Cell A Tm	р.			Conditi	on 35.2 C		Status	pass		
Sensor Co	mpone	ent Cell B Fre	q.			Conditi	on 95.1 kHz		Status	pass		
Sensor Co	mpone	ent Cell B Noi	se			Conditi	on Not tested		Status	pass		
Sensor Co	mpone	ent Cell B Flor	N			Conditi	on 0.66 lpm		Status	pass		
Sensor Co	mpone	ent Cell B Pre	ssure			Conditi	on 638.3 mmHg		Status	pass		
Sensor Co	mpone	nt Nafion dry	er install	ed		Conditi	on True		Status	pass		
Sensor Co	mpone	ent System M	emo			Conditi	on		Status	pass		

Temperature Data Form

Mfg	Serial Number	Tag Site	Т	echni	ician	Site V	isit Date	Paramo	eter	Owner ID	
RM Young	none	COW137	I	Eric H	ebert	12/09	/2024	Temper	ature	02934	
				Mf	ġ	Fluke		Pa	rameter Te	mperature	
				Ser	rial Number	61960	02	Tf	er Desc. RT	D	
				Tfe	er ID	01224					
DAS 1:	DAS	5 2:		Slo	pe		1.0000	0 Inte	rcept	0.0004	46
Abs Avg Err	Abs Max Err Abs	Avg Err Abs	Max Err	Cer	rt Date		9/26/202	3 Cori	Coff	1.000	00
0.16	0.33										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	0.13	0.13		0.000		0.1		С	-0.01	
primary	Temp Mid Range	20.69	20.69		0.000		20.	8	С	0.14	
primary	Temp High Range	47.91	47.91		0.000		47.	6	С	-0.33	
Sensor Com	ponent Shield		Condi	tion C	Clean			Status	pass		
Sensor Com	ponent Blower		Condi	tion N	I/A			Status	pass		
Sensor Com	ponent Properly Sited		Condi	tion F	Properly sited			Status	pass		
Sensor Com	iponent System Memo)	Condi	tion				Status	pass		

Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	COW137	Eric Hebert	12/09/2024	Shelter Temperatur	e none
DAS 1:	DAS 2:		Mfg	Fluke	Parameter St	nelter Temperature
Abs Avg Err Abs	S Max Err Abs Avg 0.38	Err Abs Max Err	Serial Number	6196002	Tfer Desc. R	TD
			Tfer ID	01224		
			Slope	1.0000	0 Intercept	0.00046
			Cert Date	9/26/202	23 CorrCoff	1.00000

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	24.33	24.33	0.000	24.7	С	0.38
primary	Temp Mid Range	25.04	25.04	0.000	24.9	С	-0.19
primary	Temp Mid Range	24.76	24.76	0.000	25.0	С	0.2
Sensor Component System Memo Condition Status pass							

Siting Criteria Form

Sensor Component Large point source of So2 or Nox	Condition	Status pass
Sensor Component City > 50,000	Condition	Status pass
Sensor Component City 1,000 to 10,000	Condition	Status pass
Sensor Component City 10,000 to 50,000	Condition	Status pass
Sensor Component Feedlot operations	Condition	Status pass
Sensor Component Large parking lot	Condition	Status pass
Sensor Component Limited agriculture operations	Condition	Status pass
Sensor Component Major industrial source	Condition	Status pass
Sensor Component Secondary road < or = 100 per da	Condition	Status pass
Sensor Component Secondary road >100 vehicles/da	Condition	Status pass
Sensor Component Small parking lot	Condition 60 m	Status Fail
Sensor Component System Memo	Condition	Status pass
Sensor Component Major highway, airport, or rail yard	Condition	Status pass
Sensor Component Intensive agriculture operations	Condition	Status pass

Infrastructure Data For

Site ID	COW137	Technician Eric He	bert Site Visit Date 12/09/2024
Shelter	Make	Shelter Model	Shelter Size
Ekto		8810	640 cuft

Sensor Component	Sample Tower Type	Condition	Туре В	Status	pass
Sensor Component	Conduit	Condition	N/A	Status	pass
Sensor Component	Met Tower	Condition	N/A	Status	pass
Sensor Component	Moisture Trap	Condition	Installed	Status	pass
Sensor Component	Moisture Trap Type	Condition	Glass bottle and filter	Status	pass
Sensor Component	Power Cables	Condition	Good	Status	pass
Sensor Component	Shelter Temp Control	Condition	Functioning	Status	pass
Sensor Component	Rotometer	Condition	Installed	Status	pass
Sensor Component	Sample Tower	Condition	Good	Status	pass
Sensor Component	Shelter Condition	Condition	Good	Status	pass
Sensor Component	Shelter Door	Condition	Fair	Status	pass
Sensor Component	Shelter Roof	Condition	Good	Status	pass
Sensor Component	Shelter Floor	Condition	Good	Status	pass
Sensor Component	Shelter walls	Condition	Good	Status	pass
Sensor Component	Excessive mold present	Condition	Good	Status	pass
Sensor Component	Signal Cable	Condition	Good	Status	pass
Sensor Component	Tubing Type	Condition	3/8 teflon	Status	pass
Sensor Component	Sample Train	Condition	Good	Status	pass
Sensor Component	System Memo	Condition		Status	pass

Field Systems Comments

1 **Parameter:** ShelterCleanNotes

The shelter floor and walls have been replaced.

Field Systems Data Form

F-02058-1500-S1-rev002

Site ID COW137	Technician Eric Hebert	Site Visit Date 12/0	9/2024
Site Sponsor (agency)	EPA	USGS Map	Prentiss
Operating Group	USFS	Map Scale	
AQS #	37-113-9991	Map Date	
Meteorological Type	Climatronics		
Air Pollutant Analyzer	Ozone	QAPP Latitude	
Deposition Measurement	dry, wet	QAPP Longitude	
Land Use	Woodland - mixed	QAPP Elevation Meters	
Terrain	complex	QAPP Declination	
Conforms to MLM	No	QAPP Declination Date	
Site Telephone	8283697919	Audit Latitude	35.060527
Site Address 1	Southeastern Forest Experiment Statio	Audit Longitude	-83.43034
Site Address 2	3160 Coweeta Lab Road	Audit Elevation	683
County	Macon	Audit Declination	-5.1
City, State	, NC	Present	
Zip Code	28763	Fire Extinguisher 🔽	Inspected June 2021
Time Zone	Eastern	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 Steps	
Shelter Working Room	Make Ekto Mo	odel 8810	Shelter Size 640 cuft
Shelter Clean	Notes The shelter floor and walls have	e been replaced.	
Site OK	Notes		
Driving Directions			

Fie	eld Sy	stems Data Fo	orm		F-02058-1500-S3-rev00				-rev002	
Site	e ID	COW137	Technician	Eric Hebert		Site Visit Date	12/09/2024]	
1	Are wind being in	d speed and direction fluenced by obstructio	sensors sited so ons?	as to avoid	✓	N/A				
2	Are wind (i.e. wind horizont tower in	d sensors mounted so d sensors should be mo ally extended boom > to the prevailing wind	as to minimize ounted atop the 2x the max dian l)	tower effects? e tower or on a neter of the		N/A				
3	Are the	tower and sensors plu	mb?		✓	N/A				
4	Are the avoid ra	temperature shields p diated heat sources su	ointed north or ich as buildings	positioned to , walls, etc?	✓					
5	Are tem conditio surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped swater should be avoid	ors sited to avo sensors should . Ridges, hollov ded)	id unnatural be natural vs, and areas of						
6	Is the so	lar radiation sensor p	lumb?		✓	N/A				
7	Is it site	l to avoid shading, or	any artificial o	r reflected light?	✓	N/A				
8	Is the ra	in gauge plumb?			✓	N/A				
9	Is it site towers, o	d to avoid sheltering e etc?	ffects from buil	dings, trees,	✓	N/A				
10	Is the su facing n	rface wetness sensor s orth?	ited with the g	id surface	✓	N/A				
11	Is it inc	lined approximately 3	0 degrees?		✓	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:

E 02059 1500 82 -.003

Field Systems Data Form

F-02058-1500-S4-rev002

Site	e ID	COW137	Technician	Eric Hebert		Site Visit Date 12/09/2024
1	Do all th condition	e meterological sensor n, and well maintained	rs appear to be i 1?	ntact, in good		Temperature only
2	Are all t reportin	he meteorological sens g data?	sors operational	online, and	✓	Temperature only
3	Are the s	shields for the tempera	ature and RH se	ensors clean?	✓	
4	Are the	aspirated motors worl	king?			
5	Is the sol scratche	lar radiation sensor's l s?	lens clean and fr	ree of	✓	N/A
6	Is the su	rface wetness sensor g	rid clean and ur	ndamaged?	✓	N/A
7	Are the s condition	sensor signal and pow n, and well maintained	er cables intact, 1?	in good	✓	
8	Are the s from the	sensor signal and powe elements and well ma	er cable connect iintained?	ions protected		

Fi	eld Sy	stems Data Fo	orm		F-02058-1500-S5-rev002			
Site	e ID	COW137	Technician Eric Hebert		Site Visit Date	12/09/2024		
	Siting C	Criteria: Are the pollut	ant analyzers and deposition eq	uipr	nent sited in accor	dance with 40 Cl	FR 58, Appendix E	
1	Do the sunrestri	sample inlets have at le icted airflow?	ast a 270 degree arc of	✓				
2	Are the	sample inlets 3 - 15 m	eters above the ground?					
3	Are the and 20	sample inlets > 1 mete meters from trees?	r from any major obstruction,					
	<u>Pollutai</u>	nt analyzers and depos	ition equipment operations and	l ma	intenance			
1	Do the a condition	analyzers and equipme on and well maintained	nt appear to be in good ?	✓				
2	Are the reportin	analyzers and moniton ng data?	rs operational, on-line, and	✓				
3	Describ	e ozone sample tube.			1/4 teflon by 14 me	ters		
4	Describ	e dry dep sample tube.			3/8 teflon by 14 me	ters		
5	Are in-l indicate	line filters used in the o e location)	zone sample line? (if yes	✓	At inlet only			
6	Are san obstruc	nple lines clean, free of tions?	kinks, moisture, and	✓				
7	Is the ze	ero air supply desiccan	t unsaturated?	✓				
8	Are the	re moisture traps in th	e sample lines?	✓	dryer in ozone line,	bottle and filter in	flow line	
9	Is there clean?	a rotometer in the dry	deposition filter line, and is it		Clean and dry			

Fi	eld Sy	stems Data Fo	orm			F-02058-1500-S6-rev002				
Site	e ID	COW137	Technician	Eric Hebert		Site Visit D	ate 12/09/2024	4		
	<u>DAS, se</u>	nsor translators, and g	beripheral equip	oment operation	<u>15 ar</u>	id maintenance	2			
1	Do the l well ma	DAS instruments appe intained?	ar to be in good	condition and	✓					
2	Are all modem,	the components of the , backup, etc)	DAS operation	al? (printers,	✓					
3	Do the a lightnin	analyzer and sensor sig g protection circuitry?	gnal leads pass t	hrough		Temperature or	lly			
4	Are the well ma	signal connections pro intained?	otected from the	e weather and	✓					
5	Are the	signal leads connected	to the correct	DAS channel?	✓					
6	Are the ground	DAS, sensor translato ed?	rs, and shelter j	properly	✓					
7	Does the	e instrument shelter ha	ave a stable pow	ver source?	✓					
8	Is the in	strument shelter temp	erature control	led?						
9	Is the m	et tower stable and gr	ounded?			Stable		Grounded		
10	Is the sa	mple tower stable and	grounded?							
11	Tower o	comments?						Ŀ		

Field Sy	stems Data I	For	m				F-02	058-1	500-S7-rev002
Site ID	COW137		Technician	Eric Hebert		Site Visit Date	12/09/2024]
<u>Documen</u>	tation								
Does the s	site have the require	<u>d inst</u>	rument and	equipment m	nanuals?				
Wind speed Wind directi Temperatur Relative hun Solar radiati Surface weth Wind sensor Temperatur Humidity se Solar radiati Tipping buc Ozone analy Filter pack f	Y sensor ion sensor e sensor nidity sensor ion sensor tess sensor translator e translator e translator nsor translator ion translator ket rain gauge zer low controller			A D: D: St C(M Pr Z(Fi Su U U Li St St	ata logger ata logger trip chart p omputer lodem rinter ero air pun ilter flow p urge protec PS ightning p helter heat helter air c	recorder mp pump ctor rotection device er conditioner	Yes	No I V V V V V V V V V V V V V V V	
Filter pack N	AFC power supply								
Does the	site have the requir	ed an	id most rece	<u>nt QC docum</u>	ents and r	<u>eport forms?</u>			
]	Prese	nt				Curren	it	
Station Log SSRF Site Ops Ma HASP Field Ops M Calibration Ozone z/s/p Preventive n	nual anual Reports Control Charts 1aintenance schedulo		1 Feb 20 1 Feb 20 1 Feb 20 1 Image: Constraint of the second secon	14					
1 Is the st	ation log properly c	omple	eted during	every site visi	it? 🗹				
2 Are the current	Site Status Report I ?	Forms	s being com	pleted and					
3 Are the sample	chain-of-custody for transfer to and from	rms p 1 lab?	properly use	d to documen	t 🗹				
4 Are ozo current	ne z/s/p control char ?	rts pr	operly comp	oleted and		ntrol charts not us	ed		
Provide any natural or m	additional explanati an-made, that may a	ion (p affect	hotograph of the monito	or sketch if ne ring paramete	ecessary) re ers:	egarding condition	ons listed a	bove, or a	any other features,

Field Systems Data Form

F-02058-1500-S8-rev002

Site	ID	COW137	Technician	Eric Hebert	Site	Visit Date	12/09/2024		
1	Site ope Has the course?	eration procedures site operator attended If yes, when and who	l a formal CAS instructed?	TNET training					
2	Has the training	backup operator atte g course? If yes, when	nded a formal (and who instru	CASTNET cted?					
3	Is the sit schedule	te visited regularly on the second seco	the required Tu	iesday					
4	Are the flollowe	standard CASTNET o d by the site operator?	perational proc	cedures being					
5	Is the sit the requ	te operator(s) knowled ired site activities? (in	geable of, and a cluding docum	able to perform entation)					

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

QC Check Performed		Frequency	Compliant
Multipoint Calibrations	\checkmark	N/A	\checkmark
Visual Inspections	✓	N/A	\checkmark
Translator Zero/Span Tests (climatronics)		N/A	\checkmark
Manual Rain Gauge Test	\checkmark	N/A	\checkmark
Confirm Reasonableness of Current Values	✓	N/A	\checkmark
Test Surface Wetness Response	\checkmark	N/A	\checkmark

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

~~~	~ .	
<b>OC</b>	Check	Performed

Multi-point Calibrations Automatic Zero/Span Tests Manual Zero/Span Tests Automatic Precision Level Tests Manual Precision Level Test Analyzer Diagnostics Tests In-line Filter Replacement (at inlet) In-line Filter Replacement (at analyze Sample Line Check for Dirt/Water Zero Air Desiccant Check

Frequency	C
Semiannually	
Daily	
As needed	
Daily	
As needed	
Weekly	
Every 2 weeks	
N/A	
Weekly	
Weekly	

- **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?

Unknown
Logbook, call-in

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:

#### Compliant

Fi	Field Systems Data Form				F-02058-1500-S9-rev002
Sit	e ID	COW137 Tec	hnician Eric Hebert		Site Visit Date 12/09/2024
	<u>Site ope</u>	ration procedures			
1	Is the fi	lter pack being changed ever	y Tuesday as scheduled?		Filter changed mornings
2	Are the correctl	Site Status Report Forms be y?	ing completed and filed	✓	
3	Are dat schedul	a downloads and backups be ed?	ing performed as		No longer required
4	Are gen	eral observations being made	e and recorded? How?	✓	SSRF
5	Are site fashion	supplies on-hand and replen	ished in a timely	✓	
6	Are san	pple flow rates recorded? Ho	w?	✓	SSRF, logbook, call-in
7	Are san fashion	pples sent to the lab on a regu	ılar schedule in a timely	✓	
8	Are filte and shij	ers protected from contamina oping? How?	ation during handling	✓	Clean gloves on and off
9	Are the operation	site conditions reported regu ons manager or staff?	llarly to the field	✓	
QC	Check P	erformed	Frequency		Compliant
N	Aulti-poi	nt MFC Calibrations	Semiannually		
I	- Flow Syst	em Leak Checks	✓ Weekly		
I	ilter Pac	k Inspection			
I	low Rate	e Setting Checks	✓ Weekly		
١	/isual Ch	eck of Flow Rate Rotometer	✓ Weekly		
I	n-line Fil	ter Inspection/Replacement	Semiannually		
S	ample Li	ine Check for Dirt/Water	✓ Weekly		

Parameter	Manufacturer	Model	S/N	Client ID
Computer	Dell	Inspiron 15	1K2MC12	07049
DAS	Campbell	CR3000	2529	000401
elevation	Elevation	1	None	none
Filter pack flow pump	Thomas	107CAB18	001871	02758
Flow Rate	Арех	AXMC105LPMDPC	illegible	000555
Infrastructure	Infrastructure	none	none	none
Modem	Digi	LR54	unknown	07164
Ozone	ThermoElectron Inc	49i A1NAA	1030244795	000684
Ozone Standard	ThermoElectron Inc	49i A3NAA	1200706582	000882
Sample Tower	Aluma Tower	A	none	03499
Shelter Temperature	Campbell	107-L	none	none
Siting Criteria	Siting Criteria	1	None	None
Temperature	RM Young	41342	none	02934
UPS	APC	650	unknown	none
Zero air pump	Werther International	C 70/4	000821897	06940

Technician Eric Hebert

## **Field Systems Data Form**

COW137

Site ID

**Site Visit Sensors** 

#### F-02058-1500-S10-rev002

Site Visit Date 12/09/2024

# Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
DUI	K008-Eric H	lebert-12/17/2024				
1	12/17/2024	DAS	Campbell	000818	CR850	29012
2	12/17/2024	DAS	Campbell	000420	CR3000	2520
3	12/17/2024	Flow Rate	Apex	000918	AXMC105LPMDPCV	illegible
4	12/17/2024	Modem	Sierra wireless	06998	GX440	Unknown
5	12/17/2024	Ozone	ThermoElectron Inc	000616	49i A3NAA	1009241781
6	12/17/2024	Ozone Standard	ThermoElectron Inc	000369	49i A3NAA	0726124690
7	12/17/2024	Temperature	RM Young	06987	41342VC	024331
8	12/17/2024	Zero air pump	Werther International	06915	C 70/4	000829162

DAS Time Max Error:

0

DAS	Data	Form

Mfg **Serial Number** Site Technician Site Visit Date Parameter Use Desc. DUK008 DAS Campbell 29012 Eric Hebert 12/17/2024 Primary 12/17/2024 **Das Date: Audit Date** 12/17/2024 Datel Mfg Parameter DAS 14:34:00 14:34:00 **Das Time: Audit Time** 15510194 Tfer Desc. Source generator (D Serial Number 352 Das Day: Audit Day 352 01320 Tfer ID Low Channel: High Channel: Avg Diff: Avg Diff: **Max Diff:** Max Diff: 0.00000 Slope 1.00000 Intercept 0.0000 0.0000 0.0000 0.0000 2/13/2012 1.00000 **Cert Date CorrCoff** Fluke **Parameter** DAS Mfg Tfer Desc. DVM **Serial Number** 95740135 01311 Tfer ID Slope 1.00000 0.00000 Intercept 1/31/2024 1.00000 **Cert Date CorrCoff** Channel Input DVM Output DAS Output InputUnit OutputUnit Difference 4 0.0000 0.0000 0.0000 V V 0.0000

## Flow Data Form

Mfg	Serial Nun	ıber Tag	Site	Тес	chnician	Site Visit D	Date Param	eter	Owner ID
Apex	illegible		DUK008	Eri	ic Hebert	12/17/2024	Flow R	ate	000918
					Mfg	BIOS	P	arameter Flow	v Rate
					Serial Number	148613	Т	fer Desc. BIO	S 220-H
					Tfer ID	01421			
					Slope	1.	00871 Inte	rcept	0.00110
					Cert Date	2/16	6/2024 <b>Cor</b>	rCoff	0.99999
DAS 1:		<b>DAS 2:</b>			Cal Factor Z	ero	-0.00	13	
A Avg % Diff:	A Max % Dif	A Avg %	Diff A Max	w <b>Dif</b>	Cal Factor F	ull Scale	1.00	9	
2.74%	2.74%				<b>Rotometer R</b>	eading:	1	.5	
Desc.	Test type	Input l/n	n Input Corr	MfcDisp.	OutputSignal	Output S E	InputUnit	OutputSignalI	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	0.01	0.000	0.02	l/m	l/m	
primary	test pt 1	1.475	1.460	1.50	0.000	1.50	l/m	l/m	2.74%
primary	test pt 2	1.478	1.460	1.50	0.000	1.50	l/m	l/m	2.74%
primary	test pt 3	1.476	1.460	1.50	0.000	1.50	l/m	l/m	2.74%
Sensor Comp	onent Leak Tes	t		Conditio	n		Status	pass	
Sensor Comp	onent Tubing C	ondition		Conditio	n Good		Status	pass	
Sensor Comp	onent Filter Pos	sition		Conditio	Good		Status	pass	
Sensor Comp	onent Rotomete	er Conditic	n	Conditio	Clean and dry		Status	pass	
Sensor Comp	onent Moisture	Present		Conditio	n No moisture pr	resent	Status	pass	
Sensor Comp	onent Filter Dis	tance		Conditio	<b>n</b> 3.5 cm		Status	pass	
Sensor Comp	onent Filter Dep	oth		Conditio	<b>n</b> 1.5 cm		Status	pass	
Sensor Comp	onent Filter Azi	muth		Conditio	n 45 deg		Status	pass	
Sensor Comp	onent System N	lemo		Conditio	n		Status	pass	

## **Ozone Data Form**

Mfg	Serial Numb	er Tag Site	1	Fechnician	Site Visit Date	Parameter	<b>Owner ID</b>
ThermoElectron	Inc 1009241781	DUK00	8	Eric Hebert	12/17/2024	Ozone	000616
Slope: Intercept CorrCoff:	0.97387         Slop           0.65573         Intel           0.99996         Cor	pe: ercept rCoff:	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Paramete	er ozone c. Ozone primary stan
DAS 1:	D	AS 2:		<u></u>	0.0007		0 21710
A Avg % Diff: 0.0%	A Max % Dif A 0.0%	Avg %Diff A	Max % Dif	Stope Cert Date	2/14/202	²⁴ CorrCoff	1.00000
UseDescriptio	on ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.40	0.08	1.06	ppb		0.98
primary	2	15.83	15.52	15.65	ppb	0.84	0.13
primary	4	69.73	69.48	67.76	ppo	-0.84	
primary	5	111.48	111.28	109.40	ppb	-1.7	
Sensor Com	ponent Audit Press	ure	Condi	ition 753 mmHg		Status pass	
Sensor Com	ponent 26.6 degree	e unobstructed r	ule Condi	ition True		Status pass	
Sensor Com	ponent Tree dewlin	ie >10m or belov	w inlet Condi	ition True		Status pass	
Sensor Com	ponent ADT 1000-	10000 vehicles f	urther t Condi	ition True		Status pass	
Sensor Com	ponent ADT <1000	vehicles further	than 5 Condi	ition True		Status pass	
Sensor Com	ponent Sample Tra	iin	Condi	ition Good		Status pass	
Sensor Com	ponent Inlet Filter (	Condition	Condi	ition Clean		Status pass	
Sensor Comj	ponent Offset		Condi	ition -0.10		Status pass	
Sensor Comj	ponent Span		Condi	ition 1.024		Status pass	
Sensor Comj	ponent Zero Voltag	le	Condi	ition N/A		Status pass	
Sensor Comj	ponent Fullscale V	oltage	Condi	ition N/A		Status pass	
Sensor Com	ponent Cell A Freq	•	Condi	ition 89.9 kHz		Status pass	
Sensor Com	ponent Cell A Nois	e	Condi	ition Not tested		Status pass	
Sensor Com	ponent Cell A Flow	,	Condi	ition 0.62 lpm		Status pass	
Sensor Com	ponent Cell A Pres	sure	Condi	ition 674.6 mmHg		Status pass	
Sensor Com	ponent Cell A Tmp		Condi	ition 35.5 C		Status pass	
Sensor Com	ponent Cell B Freq	•	Condi	ition 96.0 kHz		Status pass	
Sensor Com	ponent Cell B Nois	е	Condi	ition Not tested		Status pass	
Sensor Com	ponent Cell B Flow		Condi	ition 0.59 lpm		Status pass	
Sensor Com	ponent Cell B Pres	sure	Condi	ition 675.2 mmHg		Status pass	
Sensor Com	ponent Nafion drye	r installed	Condi	ition True		Status pass	
Sensor Com	ponent System Me	mo	Condi	ition		Status pass	

## **Temperature Data Form**

Mfg	Serial Number	Tag Site	1	ſechni	ician	Site V	isit Date	Param	eter	<b>Owner ID</b>	
RM Young	024331	DUK008		Eric H	ebert	12/17	/2024	Temper	ature	06987	
				Mf	g	Fluke		Pa	rameter Te	mperature	
				Ser	rial Number	61960	02	Tf	er Desc. R	D	
				Tfe	er ID	01224					
DAS 1:	DAS	5 2:		Slo	pe		1.0000	0 Inte	rcept	0.00046	į
Abs Avg Err	Abs Max Err Abs	Avg Err Abs	Max Err	Cer	rt Date		9/26/202	23 Cor	rCoff	1.00000	]
0.31	0.36										
UseDesc.	Test type	InputTmpRaw	InputTmp	Corr.	OutputTmpS	Signal	OutputSig	gnalEng	OSE Unit	Difference	
primary	Temp Low Range	0.13	0.13		0.000		0.4	1	С	0.22	
primary	Temp Mid Range	21.08	21.08	3	0.000		20.	7	С	-0.36	
primary	Temp High Range	42.56	42.56	5	0.000		42.	9	С	0.36	
Sensor Con	ponent Shield		Condi	tion C	Clean			Status	pass		
Sensor Com	ponent Blower		Condi	tion N	I/A			Status	pass		
Sensor Com	ponent Properly Sited		Condi	tion F	Properly sited			Status	pass		
Sensor Com	iponent System Memo	)	Condi	tion				Status	pass		

# Shelter Temperature Data For

Mfg	Serial Number Tag	Site	Technician	Site Visit Date	Parameter	Owner ID
Campbell	none	DUK008	Eric Hebert	12/17/2024	Shelter Temperature	none
DAS 1: Abs Avg Err Abs 0.44	Max Err 0.60 DAS 2: Abs Avg	Err Abs Max Err	Mfg Serial Number Tfer ID Slope Cert Date	Fluke 6196002 01224 1.0000 9/26/202	Parameter She Tfer Desc. RTD	0.00046

UseDesc.	Test type	InputTmpRaw	InputTmpCorr.	OutputTmpSignal	OutputSignalEng	OSE Unit	Difference
primary	Temp Mid Range	23.05	23.05	0.000	23.7	С	0.6
primary	Temp Mid Range	22.97	22.97	0.000	23.2	С	0.27
Sensor Con	ponent System Memo	1	Condition		Status	pass	

## Field Systems Data Form

### F-02058-1500-S1-rev002

Site ID DUK008	Technician Eric Hebert	Site Visit Date 12/17	7/2024							
Site Sponsor (agency)	EPA	USGS Map								
<b>Operating Group</b>	EPA	Map Scale								
AQS #		Map Date								
Meteorological Type										
Air Pollutant Analyzer		QAPP Latitude								
<b>Deposition Measurement</b>		QAPP Longitude								
Land Use		<b>QAPP Elevation Meters</b>								
Terrain		QAPP Declination								
Conforms to MLM		QAPP Declination Date								
Site Telephone		Audit Latitude	35.9745							
Site Address 1		Audit Longitude	-79.099							
Site Address 2		Audit Elevation	164							
County	Orange	Audit Declination								
City, State	, NC	Present								
Zip Code		Fire Extinguisher 🔽								
Time Zone	Eastern	First Aid Kit								
Primary Operator		Safety Glasses								
Primary Op. Phone #		Safety Hard Hat								
Primary Op. E-mail		Climbing Belt								
<b>Backup Operator</b>		Security Fence								
Backup Op. Phone #		Secure Shelter								
Backup Op. E-mail		<b>Stable Entry Steps</b> ✓								
Shelter Working Room	Make Custom Me	Ddel Unknown	Shelter Size							
Shelter Clean	Notes The shelter is custom built and	in very good condition.								
Site OK	Notes									
Driving Directions										
Fie	eld Sy	stems Data Fo	orm			F-02058-1500-S3-rev002				
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------	-----------------------------------------------------------------------------------------------------	----------------------------------------------------------------	------------------------------------------------	---	------------------------	------------	--	---	--
Site	e ID	DUK008	Technician	Eric Hebert		Site Visit Date	12/17/2024		]	
1	Are wind being in	d speed and direction fluenced by obstructio	sensors sited so ns?	as to avoid		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)						N/A				
3	Are the	tower and sensors plu	mb?		✓					
4	Are the avoid ra	temperature shields p diated heat sources su		Temperature only						
5	Are tem condition surface a standing	perature and RH sens ns? (i.e. ground below and not steeply sloped s water should be avoid	ors sited to avo sensors should . Ridges, hollov ded)	id unnatural be natural vs, and areas of		Temperature only				
6	Is the so	lar radiation sensor p	lumb?		✓	N/A				
7	Is it sited	d to avoid shading, or	any artificial o	r reflected light?		N/A				
8	Is the ra	in gauge plumb?			✓	N/A				
9	Is it site towers, o	d to avoid sheltering e etc?	ffects from buil	dings, trees,	✓	N/A				
10	Is the su facing n	rface wetness sensor s orth?	ited with the g	rid surface	✓	N/A				
11	Is it inc	lined approximately 3	0 degrees?		✓	N/A				
						L				

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-rev002

Site	e ID	DUK008	Technician E	Fric Hebert		Site Visit Date 12/17/2024
1 Do all the meterological sensors appear to be intact, in good condition, and well maintained?						Temperature only
2	Are all the reporting	he meteorological sens g data?	sors operational o	online, and	✓	Temperature only
3	Are the s	shields for the temper	ature and RH sei	nsors clean?	✓	Temperature only
4	Are the aspirated motors working?					N/A
5	5 Is the solar radiation sensor's lens clean and free of scratches?					N/A
6	Is the su	rface wetness sensor g	grid clean and un	damaged?	✓	N/A
7	Are the s condition	sensor signal and pow 1, and well maintained	er cables intact, i d?	in good	✓	
8	Are the s from the	sensor signal and pow elements and well ma	er cable connecti aintained?	ions protected		

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:

Fi	eld Sy	stems Data Fo	orm				F-02058-1	500-85-rev002
Site	Site ID DUK008 Technician Eric Hebert		Eric Hebert		Site Visit Date 1	12/17/2024		
	<u>Siting C</u>	riteria: Are the pollut	ant analyzers a	nd deposition eq	uipı	<u>nent sited in accord</u>	ance with 40 CFR	58, Appendix E
1	Do the s unrestri	ample inlets have at le cted airflow?	ast a 270 degre	e arc of	✓			
2	Are the	sample inlets 3 - 15 me	eters above the	ground?		47.5 meters above g	round	
3	Are the and 20 r	sample inlets > 1 mete neters from trees?	r from any maj	or obstruction,				
	<u>Pollutar</u>	it analyzers and depos	ition equipmen	t operations and	l ma	<u>intenance</u>		
1	Do the analyzers and equipment appear to be in good condition and well maintained?				✓	N/A		
2	Are the analyzers and monitors operational, on-line, and reporting data?				✓	N/A		
3	Describe	e ozone sample tube.				1/4 teflon by 50 mete	ers	
4	Describ	e dry dep sample tube.				1/4 teflon by 5 meter	ſS	
5	Are in-li indicate	ine filters used in the o location)	zone sample lir	ne? (if yes		N/A		
6	Are sam obstruct	ple lines clean, free of tions?	kinks, moistur	e, and	✓			
7	Is the ze	ero air supply desiccan	t unsaturated?		✓	N/A		
8	Are the	re moisture traps in th	e sample lines?		✓	both flow and ozone		
9	Is there clean?	a rotometer in the dry	deposition filte	er line, and is it				

### 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 located on a 47 meter walkup tower in Duke Forest. There is a small footprint site at the top of the tower with its own data logger, filter pack flow system, and temperature measurement at 47.5 meters above ground. The ozone inlet is also at 47.5 meters. The ozone monitor, zero air system, and ozone level 3 standard are located in a climate controlled shelter at the bottom of the tower with a separate data logger.

Fi	eld Sy	stems Data Fo	orm				<b>F-02</b>	2058-15	500-S6-rev002
Site	e ID	DUK008	Technician	Eric Hebert		Site Visit Date	12/17/2024	l	
	<u>DAS, se</u>	ensor translators, and	peripheral equi	pment operation	<u>15 ai</u>	<u>1d maintenance</u>			
1	Do the well ma	DAS instruments appe intained?	ar to be in good	l condition and					
2	Are all modem	the components of the , backup, etc)	DAS operation	al? (printers,					
3	Do the a lightnin	analyzer and sensor sig g protection circuitry	gnal leads pass ( ?	through	✓	Met sensors only			
4	Are the well ma	signal connections pro intained?	otected from the	e weather and	✓				
5	Are the	signal leads connected	l to the correct ]	DAS channel?	✓				
6	Are the ground	DAS, sensor translato ed?	ors, and shelter	properly	✓				
7	Does th	e instrument shelter h	ave a stable pov	ver source?	✓				
8	Is the in	ıstrument shelter temp	oerature control	lled?		N/A			
9	Is the m	et tower stable and gr	ounded?			Stable		Grounded	]
10	Is the sa	ample tower stable and	l grounded?						
11	Tower o	comments?							

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:

All measurements (temperature and flow rate) are being made above tree canopy approximately 47.5 meters above ground.

Fie	eld Systems Data	Fo	rm				<b>F-02</b>	.058-	1500-87	-rev002
Site	DUK008		Techni	ician	Eric Hebert	Site Visit Date	12/17/2024			
D										
D	<u>locumentation</u>									
D	oes the site have the require	ed in	<u>strumen</u>	<u>t and</u>	<u>equipment manuals?</u>					
<b>W</b> /:	d anood concon	Yes	No	N/A	A Data lagga		Yes	No	N/A	
Win	d direction concor			V V	Data logge	Г м				
Tom	iu ulrection sensor				Data logge	r rocordor				
Rela	iperature sensor				Computer	recorder				
Sola	r radiation sensor				Modem					
Surf	face wetness sensor				Printer					
Win	d sensor translator				Zero air pi	amp				
Tem	iperature translator				Filter flow	pump		$\checkmark$		
Hun	nidity sensor translator				Surge prot	ector			$\checkmark$	
Sola	r radiation translator				UPS				$\checkmark$	
Tip	oing bucket rain gauge				Lightning	protection device			$\checkmark$	
Ozo	ne analyzer				Shelter hea	iter				
Filte	er pack flow controller				Shelter air	conditioner				
Filte	er pack MFC power supply			$\checkmark$						
	Does the site have the requi	red a	and most	t rece	nt OC documents and	report forms?				
		Pres	sent				Curre	nt		
Stat	ion Log									
SSR	F									
Site	<b>Ops Manual</b>									
HAS	SP									
Field	d Ops Manual									
Cali	bration Reports									
Ozo	ne z/s/p Control Charts									
Prev	ventive maintenance schedu	le								
1	Is the station log properly of	comp	oleted du	ring	every site visit? 🔲 T	here is no site logb	ook			
2	Are the Site Status Report current?	Form	ns being	comp	oleted and					
3	Are the chain-of-custody for sample transfer to and from	orms m lat	properly o?	y usec	l to document 🗹					
4	Are ozone z/s/p control cha current?	rts p	oroperly	comp	leted and	/Α				
Prov natu	vide any additional explanat Iral or man-made. that may	tion ( affe	photogr ct the mo	aph o onitor	r sketch if necessary) ing parameters:	regarding conditi	ions listed a	above, o	or any other f	ieatures,
	······				6 F					

### **Field Systems Data Form**

### F-02058-1500-S8-rev002

Site	ID	DUK008	Technicia	n Eric Hebert	Site Visit Date	12/17/2024				
1	<u>Site ope</u> Has the course?	eration procedures e site operator attended ? If yes, when and who i	a formal C instructed?	ASTNET trainin	ng 🗆					
2	2 Has the backup operator attended a formal CASTNET training course? If yes, when and who instructed?									
3	Is the sit	te visited regularly on t e?	he required	Tuesday						
4	Are the standard CASTNET operational procedures being flollowed 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									
QC	Check P	erformed		Frequenc	y	Compliant				
QC Mu	Check P Itipoint C	erformed Calibrations		Frequency ✓ N/A	y	<b>Compliant</b>				
QC Mu Vis	Check P ltipoint C ual Inspe	Performed Calibrations Actions		Frequency     ✓   N/A     ✓   N/A	y	Compliant				
QC Mu Vis Tra	Check P ltipoint C ual Inspe unslator Z	Performed Calibrations Actions Zero/Span Tests (climat	ronics)	Frequency       ✓     N/A       ✓     N/A       ✓     N/A	<b>y</b>	Compliant				
QC Mu Vis Tra Ma	Check P ltipoint C ual Inspe inslator Z nual Raii	Performed Calibrations Actions Zero/Span Tests (climat n Gauge Test	ronics)	Frequency           ✓         N/A           ✓         N/A           ✓         N/A           ✓         N/A	y	Compliant				
QC Mu Vis Tra Ma Co	Check P ltipoint C ual Inspe unslator Z nual Rain nfirm Rea	Performed Calibrations Actions Lero/Span Tests (climat n Gauge Test asonableness of Curren	ronics) t Values	Frequency         ✓         N/A         ✓         N/A         ✓         N/A         ✓         N/A         ✓         Daily	<b>y</b>	Compliant				
QC Mu Vis Tra Ma Con Tes	Check P ltipoint C ual Inspe inslator Z nual Rain nfirm Rea t Surface	Performed Calibrations Actions Zero/Span Tests (climat n Gauge Test asonableness of Curren e Wetness Response	ronics) t Values	Frequency       M/A       M/A       M/A       M/A       Daily       N/A	y	Compliant				
QC Mu Vis Tra Ma Col Tes	Check P ltipoint C ual Inspe inslator Z nual Rain nfirm Rea t Surface <u>Are regu</u>	Performed Calibrations Actions Zero/Span Tests (climat n Gauge Test asonableness of Curren e Wetness Response ular operational OA/Q0	ronics) t Values C checks pe	Frequency         N/A         N/A         N/A         N/A         Daily         N/A	y  pzone analyzer?	Compliant				
QC Mu Vis Tra Ma Con Tes	Check P ltipoint C ual Inspe inslator Z nual Rain nfirm Rea t Surface <u>Are regu</u> Check P	Performed Calibrations Actions Zero/Span Tests (climat n Gauge Test asonableness of Curren e Wetness Response <u>ular operational QA/Q0</u> Performed	ronics) t Values <u>C checks pe</u>	Frequency N/A N/A N/A N/A Daily N/A Formed on the of Frequency	y  <u>vzone analyzer?</u> y	Compliant				
QC Mu Vis Tra Ma Con Tes QC Mu	Check P Itipoint C ual Inspe unslator Z nual Rain firm Rea t Surface <u>Are regu</u> Check P Iti-point	Performed Calibrations Actions Zero/Span Tests (climat n Gauge Test asonableness of Curren e Wetness Response <u>ular operational OA/O</u> Performed Calibrations	ronics) t Values <u>C checks pe</u>	Frequency N/A N/A N/A N/A N/A Daily N/A formed on the on Frequency Semiannua	y <u>v</u> vzone analyzer? y ally	Compliant				
QC Mu Vis Tra Ma Con Tes QC Mu	Check P Itipoint C ual Inspe inslator Z nual Rain firm Rea t Surface <u>Are regu</u> Check P Iti-point C	Performed Calibrations Actions Zero/Span Tests (climat n Gauge Test asonableness of Curren e Wetness Response <u>ular operational OA/OC</u> Performed Calibrations Zero/Span Tests	ronics) t Values <u>C checks pe</u>	Frequency N/A N/A N/A N/A N/A Daily Frequency Frequency Semiannua Daily	y <u>vzone analyzer?</u> y ally	Compliant				
QC Muu Vis Tra Ma Con Tes QC Mu Aut	Check P Itipoint C ual Inspe unslator Z nual Rain ofirm Rea t Surface <u>Are regu</u> Check P Iti-point tomatic Z nual Zere	Performed Calibrations Actions Actions Zero/Span Tests (climat n Gauge Test asonableness of Curren e Wetness Response alar operational OA/OC Performed Calibrations Zero/Span Tests o/Span Tests	ronics) t Values <u>C checks pe</u>	Frequency   Image: N/A   Image: N/A	y <u>vzone analyzer?</u> y ally	Compliant				

Manual Precision Level Test
Analyzer Diagnostics Tests
In-line Filter Replacement (at inlet)

In-line Filter Replacement (at analyze

Sample Line Check for Dirt/Water

Zero Air Desiccant Check

**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?

	Unknown
✓	
✓	

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:

Semiannually	V
Daily	$\checkmark$
N/A	$\checkmark$
Daily	$\checkmark$
N/A	$\checkmark$
N/A	$\checkmark$
Every 2 weeks	$\checkmark$
N/A	$\checkmark$
Weekly	$\checkmark$
Weekly	$\checkmark$

### **Field Systems Data Form**

Site	e ID	DUK008	Techni	cian	Eric Hebert		Site Visit Date	12/17/2024	
	<u>Site oper</u>	ation procedures							
1	Is the file	ter pack being change	d every T	uesd	ay as scheduled?				
2	Are the Site Status Report Forms being completed and filed correctly?								
3	Are data downloads and backups being performed as scheduled?						No longer required		
4	Are gene	eral observations being	g made ar	nd re	corded? How?	✓	SSRF		
5	Are site supplies on-hand and replenished in a timely fashion?								
6	Are sample flow rates recorded? How?					✓	SSRF		
7	Are samples sent to the lab on a regular schedule in a timely fashion?								
8	Are filte and ship	rs protected from cont ping? How?	taminatio	n du	ring handling	✓	Clean gloves on and	l off	
9	Are the soperatio	site conditions reporte ns manager or staff?	d regular	ly to	the field		email		
QC	Check Pe	rformed		Fre	quency			Compliant	
N	Iulti-poin	t MFC Calibrations	$\checkmark$	Sem	niannually				
F	low Syste	m Leak Checks	$\checkmark$	Wee	ekly				
F	Filter Pack Inspection								
Flow Rate Setting Checks									
V	Visual Check of Flow Rate Rotometer Veekly								
I	n-line Filt	er Inspection/Replace	ment 🔽	Sem	niannually				
S	ample Li	ne Check for Dirt/Wat	ter 🔽	Wee	ekly				

F-02058-1500-S9-rev002

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 Sy	stems Data Fo	orm		F-02058-150	00-S10-rev002
Site ID	DUK008	Technician Eric Hebert	Site Visit Date	12/17/2024	

Site Visit Sensors

Parameter	Manufacturer	Model	S/N	Client ID
DAS	Campbell	CR3000	2520	000420
DAS	Campbell	CR850	29012	000818
Flow Rate	Apex	AXMC105LPMDPC	illegible	000918
Modem	Sierra wireless	GX440	Unknown	06998
Ozone	ThermoElectron Inc	49i A3NAA	1009241781	000616
Ozone Standard	ThermoElectron Inc	49i A3NAA	0726124690	000369
Shelter Temperature	Campbell	107-L	none	none
Temperature	RM Young	41342VC	024331	06987
Zero air pump	Werther International	C 70/4	000829162	06915

# Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
BFT	142-Eric H	ebert-12/19/2024				
1	12/19/2024	DAS	Campbell	000499	CR3000	3816
2	12/19/2024	Ozone	ThermoElectron Inc	000746	49i A1NAA	1105347315
3	12/19/2024	Ozone Standard	ThermoElectron Inc	000330	49i A3NAA	0622717854
4	12/19/2024	Zero air pump	Werther International	07291	C 120/TC	001071024

### **Ozone Data Form**

Mfg		Serial Numb	er Ta	Site		Tecł	hnician	Site Visit Date	Param	eter	Owner I	D
ThermoElect	tron Inc	1105347315		BFT142		Eric	: Hebert	12/19/2024	Ozone		000746	
Slope:		1.00982 <b>Slo</b>	ne:	C	0.00000	I	Mfg	ThermoElectron		aramete	ozone	
Intercept	-	0.77761 Int	ercept	(	).00000	5	Serial Number	1180030022		fer Deso	Ozone primary	/ stan
CorrCoff		0.99999 <b>Co</b>	rrCoff	(	0.00000	1	Ffor ID	01114				
DAG 1		T				1			_			
DAS 1: A Avg % D	oiff∙ A I	L Max % Di - A	DAS 2:	Diff A	Max % Di	5	Slope	0.9997	0 Inte	rcept	0.31	710
0.0	)%	0.0%	1119 /0			]	Cert Date	2/14/202	4 Cor	rCoff	1.00	000
UseDescri	ption	ConcGroup	Tfei	r Raw	Tfer Co	rr	Site	Site Unit	RelPer	rDif	AbsDif	
primar	y	1	0	.48	0.15		-0.40	ppb			-0.55	
primar	y	2	15	5.52	14.86		14.14	ppb		1.00	-0.72	
primar	y	3	35	5.10	34.02		33.55	ppb		-1.39		
primar	y v	5	11	3 46	110.66		07.88	ppb		-0.00		
Sensor Co	ompone	ent Audit Press	sure		Cond	litior	1 768 mmHg	<u> </u> <u></u>	Status	pass		
Sensor Co	ompone	ent 26.6 degre	e unobst	tructed ru	le Cond	litior	True		Status	pass		7
Sensor Co	ompone	ent Tree dewlin	ne >10m	or below	inlet Cond	litior	True		Status	pass		7
Sensor Co	ompone	ent ADT 1000-	10000 v	ehicles fu	rther Cond	litior	True		Status	pass		
Sensor Co	ompone	ent ADT <1000	) vehicle	s further	than Cond	litior	True		Status	pass		
Sensor Co	ompone	ent Sample Tra	ain		Cond	litior	Good		Status	pass		
Sensor Co	ompone	ent Inlet Filter	Conditio	n	Cond	litior	Clean		Status	pass		
Sensor Co	ompone	ent Offset			Cond	litior	-0.20		Status	pass		
Sensor Co	ompone	ent Span			Cond	litior	1.011		Status	pass		
Sensor Co	ompone	ent Zero Volta	ge		Cond	litior	N/A		Status	pass		
Sensor Co	ompone	ent Fullscale V	oltage		Cond	litior	N/A		Status	pass		
Sensor Co	ompone	ent Cell A Free	<b>ļ</b> .		Cond	litior	1 84.3 kHz		Status	pass		
Sensor Co	ompone	ent Cell A Nois	e		Cond	litior	Not tested		Status	pass		
Sensor Co	ompone	ent Cell A Flow	/		Cond	litior	0.70 lpm		Status	pass		
Sensor Co	ompone	ent Cell A Pres	sure		Cond	litior	1 699.1 mmHg		Status	pass		
Sensor Co	ompone	ent Cell A Tmp	).		Cond	litior	35.3 C		Status	pass		
Sensor Co	ompone	ent Cell B Free	<b>ļ</b> .		Cond	litior	113.0 kHz		Status	pass		
Sensor Co	ompone	Cell B Nois	e		Cond	litior	Not tested		Status	pass		
Sensor Co	ompone	Cell B Flow	/		Cond	litior	1 0.69 lpm		Status	pass		
Sensor Co	ompone	ent Cell B Pres	sure		Cond	litior	1 699.7 mmHg		Status	pass		
Sensor Co	ompone	ent Nafion drye	er installe	ed	Conc	litior	True		Status	pass		
Sensor Co	ompone	ent System Me	emo		Cond	litior	1		Status	pass		

# Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
VPL	120-Eric He	ebert-12/20/2024				
1	12/20/2024	DAS	Campbell	000402	CR3000	2514
2	12/20/2024	Ozone	ThermoElectron Inc	000613	49i A1NAA	1009241783
3	12/20/2024	Ozone Standard	ThermoElectron Inc	000686	49i A3NAA	1030244818
4	12/20/2024	Zero air pump	Werther International	06929	C 70/4	000829173

### **Ozone Data Form**

Mfg	Serial Numbe	er Ta Site	Те	chnician	Site Visit Date	Parameter	<b>Owner ID</b>
ThermoElectron Inc	1009241783	VPI120	E	ric Hebert	12/20/2024	Ozone	000613
Slope: Intercept CorrCoff	1.00950 Slop -0.56232 Inter 0.99993 Corr	e: () rcept () rCoff ()	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Paramet	er ozone c. Ozone primary stan
DAS I: A Avg % Diff: A I	D/ May % Di A	45 2: Avg %Diff A	May % Di	Slope	0.9997	0 Intercept	0.31710
0.0%	0.0%			Cert Date	2/14/202	24 CorrCoff	1.00000
UseDescription	ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.44	0.12	-0.13	ppb		-0.25
primary	2	14.36	13.73	13.43	ppb		-0.3
primary	3	34.10	33.04	32.65	ppb	-1.19	
primary	4	70.94	69.07	68.32	ppb	-1.09	
Sensor Compone	ent Audit Pressu	Jre	Conditi	on 702.6 mmHg	рро	Status pass	
Sensor Compone	ent 26.6 degree	unobstructed ru	le Conditi	on True		Status pass	
Sensor Compone	ent Tree dewline	e >10m or below	inlet Conditi	on True		Status pass	
Sensor Compone	ent ADT 1000-1	0000 vehicles fu	urther Conditi	on True		Status pass	
Sensor Compone	ent ADT <1000	vehicles further	than Conditi	on True		Status pass	
Sensor Compone	ent Sample Trai	n	Conditi	on Good		Status pass	
Sensor Compone	ent Inlet Filter C	ondition	Conditi	on Clean		Status pass	
Sensor Compone	ent Offset		Conditi	on -0.10		Status pass	
Sensor Compone	ent Span		Conditi	on 1.016		Status pass	
Sensor Compone	ent Zero Voltage	9	Conditi	on N/A		Status pass	
Sensor Compone	ent Fullscale Vo	ltage	Conditi	on N/A		Status pass	
Sensor Compone	ent Cell A Freq.		Conditi	on 93.1 kHz		Status pass	
Sensor Compone	ent Cell A Noise	•	Conditi	on Not tested		Status pass	
Sensor Compone	ent Cell A Flow		Conditi	on 0.67 lpm		Status pass	
Sensor Compone	ent Cell A Press	sure	Conditi	on 676.9 mmHg		Status pass	
Sensor Compone	Cell R Frog			01 37.0 C		Status pass	
Sensor Compone	ent Cell B Noise		Conditi	on Not tested		Status pass	
Sensor Compone		,	Conditi	0.71  lnm		Status pass	
Sensor Compone	ent Cell B Press	sure	Conditi	677.5 mmHa		Status pass	
Sensor Compone	ent Nafion drver	installed	Conditi	on False		Status pass	
Sensor Compone	ent System Mer	no	Conditi	on		Status Dass	
Sensor Compone						Part Part	

# Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
SHN	1418-Eric H	lebert-12/20/2024				
1	12/20/2024	DAS	Environmental Sys Corp	none	8864	C2776
2	12/20/2024	Ozone	ThermoElectron Inc	none	49i A3NAA	0903334535
3	12/20/2024	Ozone Standard	ThermoElectron Inc	none	49i A1NAA	1030745083
4	12/20/2024	Zero air pump	Werther International	none	C 70/4	000855578

### **Ozone Data Form**

Mfg	Serial Numb	er Tag Site	Т	echnician	Site Visit Date	Parameter	<b>Owner ID</b>
ThermoElectron	Inc 0903334535	SHN41	8 E	ric Hebert	12/20/2024	Ozone	none
Slope: Intercept CorrCoff:	0.99310 Sloj -0.11869 Inte 0.999999 Cor	pe: ercept rCoff:	0.00000 0.00000 0.00000	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Paramet	er ozone c. Ozone primary stan
DAS 1:	D	AS 2:		Slope	0 0007	10 Intercent	0 31710
A Avg % Diff: 0.0%	A Max % Dif A 0.0%	Avg %Diff A	Max % Dif	Cert Date	2/14/202	²⁴ CorrCoff	1.00000
UseDescription	n ConcGroup	Tfer Raw	Tfer Corr	Site	Site Unit	RelPerDif	AbsDif
primary	1	0.52	0.20	-0.11	ppb		-0.31
primary	3	15.85	35.43	15.50	ppb ppb	-0.99	0
primary	4	69.19	68.74	68.11	dad	-0.92	
primary	5	116.36	115.83	114.90	ppb	-0.81	
Sensor Comp	onent Audit Press	sure	Condit	ion 666.3 mmHg		Status pass	
Sensor Comp	onent 26.6 degree	e unobstructed r	ule Condit	ion True		Status pass	
Sensor Comp	onent Tree dewlin	ie >10m or belov	v inlet Condit	ion True		Status pass	
Sensor Comp	onent ADT 1000-	10000 vehicles f	urther t Condit	ion True		Status pass	
Sensor Comp	onent ADT <1000	vehicles further	than 5 Condit	ion True		Status pass	
Sensor Comp	onent Sample Tra	ain	Condit	ion Good		Status pass	
Sensor Comp	onent Inlet Filter (	Condition	Condit	ion Clean		Status pass	
Sensor Comp	onent Offset		Condit	ion -0.20		Status pass	
Sensor Comp	onent Span		Condit	ion 1.003		Status pass	
Sensor Comp	onent Zero Voltag	je	Condit	ion N/A		Status pass	
Sensor Comp	onent Fullscale V	oltage	Condit	ion N/A		Status pass	
Sensor Comp	onent Cell A Freq	•	Condit	ion 72.9 kHz		Status pass	
Sensor Comp	onent Cell A Nois	e	Condit	ion Not tested		Status pass	
Sensor Comp	onent Cell A Flow	,	Condit	ion 0.70 lpm		Status pass	
Sensor Comp	onent Cell A Pres	sure	Condit	ion 655.0 mmHg		Status pass	
Sensor Comp	onent Cell A Tmp		Condit	ion 30.4 C		Status pass	
Sensor Comp	onent Cell B Freq		Condit	ion 109.2 kHz		Status pass	
Sensor Comp	onent Cell B Nois	e	Condit	ion Not tested		Status pass	
Sensor Comp	onent Cell B Flow		Condit	ion 0.69 lpm		Status pass	
Sensor Comp	onent Cell B Pres	sure	Condit	ion 654.7 mmHg		Status pass	
Sensor Comp	onent Nafion drye	er installed	Condit	ion False		Status pass	
Sensor Comp	onent System Me	mo	Condit	ion		Status pass	

# Site Inventory by Site Visit

Site	Visit Date	Parameter	Mfg	Owner ID	Model Number	Serial Number
WSF	P144-Eric H	lebert-12/21/2024				
1	12/21/2024	DAS	Campbell	000430	CR3000	2525
2	12/21/2024	Ozone	ThermoElectron Inc	000745	49i A1NAA	1105347310
3	12/21/2024	Ozone Standard	ThermoElectron Inc	000464	49i A3NAA	0622717858
4	12/21/2024	Zero air pump	Werther International	06880	C 70/4	000814273

### **Ozone Data Form**

Mfg		Serial Numb	er Tag	Site		Te	chnician	Site Visit Date	Param	eter	Owner II	)
ThermoElect	ron Inc	1105347310		WSP14	4	Er	ic Hebert	12/21/2024	Ozone		000745	
Slope: Intercept CorrCoff:		0.98264 Slo 0.41039 Int 0.99998 Co	pe: ercept rrCoff:		0.00000 0.00000 0.00000	) ) )	Mfg Serial Number Tfer ID	ThermoElectron 1180030022 01114	Inc Pa	aramete fer Desc	ozone	stan
DAS 1:		Г	DAS 2:				<u>Slava</u>	0.0007	/0 <b>T</b> (		0.21	710
<b>A Avg % Di</b> 0.0	iff: A N %	Max % Dif A 0.0%	Avg %	Diff A	Max %	∕₀ Dif	Slope Cert Date	2/14/202	24 Cor	rcept rCoff	1.00	000
UseDescrip	otion	ConcGroup	Tfe	r Raw	Tf	er Corr	Site	Site Unit	RelPer	rDif	AbsDif	
primary	у	1	0	0.37		0.05	0.72	ppb			0.67	
primary	y	2	1	5.32		14.97	14.75	ppb		0.66	-0.22	
primary	y V	4	6	8.28		57.84	67.29	ppb		-0.81		
primary	y	5	11	1.00	1	10.48	108.90	ppb		-1.44		
Sensor Co	ompone	ent Audit Press	sure			Conditi	on 760.3 mmHg		Status	pass		]
Sensor Co	ompone	ent 26.6 degre	e unobs	tructed ru	lle	Conditi	on True		Status	pass		]
Sensor Co	ompone	ent Tree dewlin	ne >10m	or below	inlet	Conditi	on True		Status	pass		]
Sensor Co	ompone	ent ADT 1000-	10000 v	ehicles fu	irther t	Conditi	on True		Status	pass		]
Sensor Co	ompone	ent ADT <1000	) vehicle	s further	than 5	Conditi	on True		Status	pass		]
Sensor Co	ompone	ent Sample Tra	ain			Conditi	on Good		Status	pass		]
Sensor Co	ompone	ent Inlet Filter	Conditio	n		Conditi	on Clean		Status	pass		
Sensor Co	ompone	offset				Conditi	on -0.50		Status	pass		
Sensor Co	ompone	ent Span				Conditi	on 1.019		Status	pass		
Sensor Co	ompone	ent Zero Volta	ge			Conditi	on N/A		Status	pass		]
Sensor Co	ompone	ent Fullscale V	oltage			Conditi	on N/A		Status	pass		
Sensor Co	ompone	ent Cell A Fred	1.			Conditi	on 96.4 kHz		Status	pass		
Sensor Co	ompone	ent Cell A Nois	e			Conditi	on Not tested		Status	pass		
Sensor Co	ompone	ent Cell A Flow	/			Conditi	on 0.73 lpm		Status	pass		
Sensor Co	ompone	ent Cell A Pres	sure			Conditi	on 732.1 mmHg		Status	pass		
Sensor Co	ompone	ent Cell A Tmp	).			Conditi	on 36.4 C		Status	pass		
Sensor Co	ompone	ent Cell B Free	1.			Conditi	on 103.3 kHz		Status	pass		
Sensor Co	ompone	ent Cell B Nois	e			Conditi	on Not tested		Status	pass		
Sensor Co	ompone	ent Cell B Flow	/			Conditi	on 0.69 lpm		Status	pass		
Sensor Co	ompone	ent Cell B Pres	sure			Conditi	on 733 mmHg		Status	pass		
Sensor Co	ompone	ent Nafion drye	er install	ed		Conditi	on False		Status	pass		
Sensor Co	ompone	ent System Me	emo			Conditi	on		Status	pass		

### **APPENDIX B**

**CASTNET Site Spot Report Forms** 

Data Compiled: 1/13/2025 3:05:57 PM

# SiteVisitDateSiteTechnician12/19/2024BFT142Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	1.00982	unitless	Р
2	Ozone Intercept	Р	0	5	4	-0.77761	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
4	Ozone % difference avg	Р	7	10	4	1.8	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	-0.55	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	-0.72	ppb	Р

**Data Compiled:** 11/13/2024 12:46:50 PM

### SiteVisitDate Site Technician

11/12/2024 BVL130 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature2meter average error	Р	5	0.5	3	1.95	с	Fail
2	Temperature2meter max error	Р	5	0.5	3	3.05	с	Fail
3	Surface Wetness Wetness Sensor		0		1	0		
4	Wind Speed average error below 5m/s in m/s	Р	3	0.5	8	0.05	m/s	Р
5	Wind Speed max error below 5m/s in m/s	Р	3	0.5	8	0.20	m/s	Р
6	Wind Speed average % difference above 5 m/s	Р	3	5	8	0.3	%	Р
7	Wind Speed max % difference above 5 m/s	Р	3	5	8	1.1	%	Р
8	Wind Speed Torque average error	Р	3	0.5	1	0.40	g-cm	Р
9	Wind Speed Torque max error	Р	3	0.5	1	0.4	g-cm	Р
10	Wind Direction Input Deg True average error (de	Р	2	5	8	2.2	degrees	Р
11	Wind Direction Input Deg True max error (deg)	Р	2	5	8	3	degrees	Р
12	Wind Direction Linearity average error (deg)	Р	2	5	16	0.6	degrees	Р
13	Wind Direction Linearity max error (deg)	Р	2	5	16	1	degrees	Р
14	Wind Direction Torque average error	Р	2	30	1	11	g-cm	Р
15	Wind Direction Torque max error	Р	2	30	1	12	g-cm	Р
16	Temperature average error	Р	4	0.5	18	0.34	c	Р
17	Temperature max error	Р	4	0.5	18	0.50	с	Р
18	Relative Humidity average above 85%	Р	6	10	3	2.9	%	Р
19	Relative Humidity max above 85%	Р	6	10	3	2.9	%	Р
20	Relative Humidity average below 85%	Р	6	10	6	1.9	%	Р
21	Relative Humidity max below 85%	Р	6	10	6	1.9	%	Р
22	Solar Radiation % diff of avg	Р	9	10	5	3.58	%	Р
23	Solar Radiation % diff of max STD value	Р	9	10	5	3.7	%	Р
24	Precipitation average % difference	Р	1	10	2	1.0	%	Р
25	Precipitation max % difference	Р	1	10	2	2.0	%	Р
26	Ozone Slope	Р	0	1.1	4	1.00679	unitless	Р
27	Ozone Intercept	Р	0	5	4	-0.90024	ppb	Р
28	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
29	Ozone % difference avg	Р	7	10	4	2.2	%	Р
30	Ozone Absolute Difference gl	Р	7	3	1	-0.69	ppb	Р
31	Ozone Absolute Difference g2	Р	7	1.5	1	-0.86	ppb	Р
32	Flow Rate average % difference	Р	10	5	9	0.67	%	Р
33	Flow Rate max % difference	Р	10	5	9	0.67	%	Р

SiteVisitDate Site	Те	echnician						
11/12/2024 BVL130	Er	ic Hebert						
34 DAS Voltage average e	error	Р	4	0.003	10	0.0000	V	Р
35 Surface Wetness Sensit	tivity test on	Р	12	10000	1	160	k ohms	Р
36 Surface Wetness Sensit	tivity test off	Р	12	10000	1	170	k ohms	Р
37 Surface Wetness Respo	onse	Р	12	0.5	1	1.04		Р
38 Shelter Temperature av	verage error	Р	5	2	18	0.15	с	Р
39 Shelter Temperature ma	ax error	Р	5	2	18	0.26	с	Р

### **Field Performance Comments**

1	Parameter:	Flow Rate	SensorComponent:	Moisture Present	CommentCode:	72
	The filter samp	ple tubing has drops of m	oisture in low sections ou	tside the shelter.		
2	Parameter:	Precipitation	SensorComponent:	System Memo	CommentCode:	193
	Objects violate	e the 45 degree rule for th	e tipping bucket rain gage	2.		
3	Parameter:	Temperature	SensorComponent:	Accuracy High Ran	CommentCode:	67

When the errors for both the 10 meter temperature sensor and the two meter temperature sensor are accounted for, the resulting calculated delta temperature value is outside the acceptance limit.

### **Field Systems Comments**

#### 1 Parameter: SiteOpsProcComm

The operator reported that the filter is not always handled by using the bag as a glove, and the filter is handled with bare hands or work gloves, not laboratory gloves.

#### 2 Parameter: SiteOpsProcedures

Ozone and NCORE sample line filters are replaced, and the sample lines are leaked tested, every 2 weeks by capping the sample inlets. The internal monitor filters are replaced every 4 weeks.

#### 3 Parameter: SitingCriteriaCom

The site is located in an agricultural and atmospheric research center. There are crops within 50 meters.

#### 4 **Parameter:** ShelterCleanNotes

The shelter still has a slight odor of rodent excrement, but it is improving. The shelter door does not completely seal and water enters during heavy rain. The water damage to the floor has been repaired.

#### 5 Parameter: MetSensorComme

The tipping bucket rain gage is mounted near the meteorological tower and in violation of the 45 degree rule.

**Data Compiled:** 11/9/2024 6:48:21 PM

### SiteVisitDate Site Technician

11/01/2024 CAN407 Martin Valvur

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	1	0.00	c	Р
2	Temperature max error	Р	4	0.5	1	0.00	с	Р
3	Ozone Slope	Р	0	1.1	4	0.98830	unitless	Р
4	Ozone Intercept	Р	0	5	4	-0.71827	ppb	Р
5	Ozone correlation	Р	0	0.995	4	0.99997	unitless	Р
6	Ozone % difference avg	Р	7	10	4	4.3	%	Р
7	Ozone Absolute Difference g1	Р	7	3	1	-0.17	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-1.24	ppb	Р
9	DAS Voltage average error	Р	4	0.003	5	0.0000	V	Р
10	Shelter Temperature average error	Р	5	2	27	1.41	с	Р
11	Shelter Temperature max error	Р	5	2	27	1.6	с	Р

### **Field Systems Comments**

#### 1 Parameter: SiteOpsProcComm

The flow rate standard malfunctioned during the audit and the flow rate could not be audited.

#### 2 Parameter: DocumentationCo

Site equipment manuals should be available online.

#### 3 Parameter: SitingCriteriaCom

The small parking lot at the visitors center is approximately 200m to the northeast.

#### 4 Parameter: ShelterCleanNotes

The shelter is in good condition, well organized and well maintained.

### 5 **Parameter:** MetSensorComme

The 2-meter temperature sensor has been replaced with an "all-in-one" sensor mounted at the top of the sample tower. The data logger was not functioning properly and recorded data from the temperature sensor were not available. An audit of the temperature system was not possible.

**Data Compiled:** 11/19/2024 10:13:14 AM

# SiteVisitDate Site Technician 11/18/2024 CAT175 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	3	0.25	с	Р
2	Temperature max error	Р	4	0.5	3	0.32	с	Р
3	Flow Rate average % difference	Р	10	5	2	2.6	%	Р
4	Flow Rate max % difference	Р	10	5	2	2.6	%	Р
5	DAS Voltage average error	Р	4	0.003	2	0.0000	V	Р

### **Field Systems Comments**

1 Parameter: DasComments

The shelter is no longer used for other than storage and solar panel mount.

2 Parameter: DocumentationCo

The site copies of the SSRF are no longer kept onsite.

#### 3 Parameter: ShelterCleanNotes

The shelter is seriously deteriorated with rot and mold on the walls. However, the shelter is no longer used for other than batteries and the solar panel mount. A small foot-print system has been installed on the sample tower.

4 Parameter: PollAnalyzerCom

Small foot-print site with just filter pack and temperature.

**Data Compiled:** 1/13/2025 2:43:06 PM

# SiteVisitDateSiteTechnician12/05/2024CHE185Martin Valvur

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	0.98317	unitless	Р
2	Ozone Intercept	Р	0	5	4	-0.349	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
4	Ozone % difference avg	Р	7	10	4	2.9	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	-0.15	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	-0.7	ppb	Р

**Data Compiled:** 1/13/2025 2:28:39 PM

# SiteVisitDateSiteTechnician12/07/2024CKT136Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	0.99265	unitless	Р
2	Ozone Intercept	Р	0	5	4	-0.06494	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99998	unitless	Р
4	Ozone % difference avg	Р	7	10	4	1.1	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	0.15	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	-0.16	ppb	Р

**Data Compiled:** 1/13/2025 2:54:37 PM

# SiteVisitDateSiteTechnician12/08/2024CND125Sandy Grenville

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	1.0052	unitless	Р
2	Ozone Intercept	Р	0	5	4	0.15701	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
4	Ozone % difference avg	Р	7	10	4	0.7	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	0.32	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	0.05	ppb	Р

Data Compiled: 12/12/2024 10:11:01 AM

### SiteVisitDate Site Technician

12/09/2024 COW137 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	18	0.16	с	Р
2	Temperature max error	Р	4	0.5	18	0.33	с	Р
3	Ozone Slope	Р	0	1.1	4	0.98867	unitless	Р
4	Ozone Intercept	Р	0	5	4	-0.5677	ppb	Р
5	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
6	Ozone % difference avg	Р	7	10	4	2.9	%	Р
7	Ozone Absolute Difference g1	Р	7	3	1	-0.44	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-0.66	ppb	Р
9	Flow Rate average % difference	Р	10	5	6	0.22	%	Р
10	Flow Rate max % difference	Р	10	5	6	0.67	%	Р
11	DAS Voltage average error	Р	4	0.003	15	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	21	0.26	с	Р
13	Shelter Temperature max error	Р	5	2	21	0.38	с	Р

# **Field Systems Comments**

1 Parameter: ShelterCleanNotes

The shelter floor and walls have been replaced.

**Data Compiled:** 11/17/2024 9:39:48 PM

### SiteVisitDate Site Technician

11/17/2024 CTH110 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	15	0.22	с	Р
2	Temperature max error	Р	4	0.5	15	0.40	с	Р
3	Ozone Slope	Р	0	1.1	4	0.98336	unitless	Р
4	Ozone Intercept	Р	0	5	4	-0.60393	ppb	Р
5	Ozone correlation	Р	0	0.995	4	1.00000	unitless	Р
6	Ozone % difference avg	Р	7	10	4	3.7	%	Р
7	Ozone Absolute Difference gl	Р	7	3	1	-0.49	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-0.94	ppb	Р
9	Flow Rate average % difference	Р	10	5	2	0.00	%	Р
10	Flow Rate max % difference	Р	10	5	2	0.00	%	Р
11	DAS Voltage average error	Р	4	0.003	14	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	16	0.71	с	Р
13	Shelter Temperature max error	Р	5	2	16	0.80	с	Р

11/17/2024 CTH110

Technician

#### Eric Hebert

### **Field Performance Comments**

1	Parameter:	Flow Rate	SensorComponent:	Moisture Present	CommentCode: 72
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The filter sample tubing has drops of moisture in low sections outside the shelter.

### **Field Systems Comments**

#### 1 Parameter: DasComments

The site laptop computer has not functioned since at least 10/29/2024, therefore some variable information and previous calibration results are not available and are not reported .

#### 2 Parameter: SiteOpsProcedures

The ozone inlet filter is replaced and a Z/S/P is performed every two weeks.

#### 3 Parameter: SitingCriteriaCom

There is a point source north of Ithaca within 40 km of the site. The tree line is less than 50 m from the site. The siting is acceptable even with the noted exceptions. Trees and overgrowth have recently been removed from the site which has improved siting criteria.

#### 4 Parameter: ShelterCleanNotes

The condition of the shelter walls are continuing to deteriorate. Floor tiles are loose. Plastic is covering the computer but it is not clear if the roof is leaking.

#### 5 Parameter: MetSensorComme

The temperature sensor is mounted on the east leg of the sample tower.

**Data Compiled:** 11/9/2024 7:14:50 PM

### SiteVisitDate Site Technician

10/09/2024 DEN417 Martin Valvur

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	3	0.48	с	Р
2	Temperature max error	Р	4	0.5	3	0.74	с	Fail
3	Ozone Slope	Р	0	1.1	4	0.99164	unitless	Р
4	Ozone Intercept	Р	0	5	4	0.24815	ppb	Р
5	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
6	Ozone % difference avg	Р	7	10	4	0.6	%	Р
7	Ozone Absolute Difference gl	Р	7	3	1	0.47	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-0.17	ppb	Р
9	Flow Rate average % difference	Р	10	5	12	2.21	%	Р
10	Flow Rate max % difference	Р	10	5	12	2.37	%	Р
11	DAS Voltage average error	Р	4	0.003	1	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	3	0.93	с	Р
13	Shelter Temperature max error	Р	5	2	3	1.03	с	Р

# **Field Systems Comments**

#### 1 Parameter: SiteOpsProcComm

The site operator uses one gloved hand, and the same glove, to remove and install the filter pack. Leak checks are performed when the ambient temperature is above -10 C.

### 2 Parameter: ShelterCleanNotes

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

#### 3 Parameter: MetOpMaintCom

The temperature sensor has been replaced with an "all-in-one" which was audited by placing the RTD standard in proximity to the site sensor since it is not submergible.

**Data Compiled:** 11/9/2024 7:44:44 PM

### SiteVisitDate Site Technician

10/31/2024 DIN431 Martin Valvur

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	3	0.83	c	Fail
2	Temperature max error	Р	4	0.5	3	1.2	с	Fail
3	Ozone Slope	Р	0	1.1	4	0.99373	unitless	Р
4	Ozone Intercept	Р	0	5	4	-0.60862	ppb	Р
5	Ozone correlation	Р	0	0.995	4	1.00000	unitless	Р
6	Ozone % difference avg	Р	7	10	4	2.5	%	Р
7	Ozone Absolute Difference gl	Р	7	3	1	-0.61	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-0.65	ppb	Р
9	Flow Rate average % difference	Р	10	5	15	1.6	%	Р
10	Flow Rate max % difference	Р	10	5	15	2.42	%	Р
11	DAS Voltage average error	Р	4	0.003	5	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	18	0.40	с	Р
13	Shelter Temperature max error	Р	5	2	18	1.08	с	Р

### **Field Systems Comments**

#### 1 Parameter: DasComments

All sensors, filter pack, and ozone sample inlet are on a single, crank-down tower.

#### 2 Parameter: SiteOpsProcedures

The site operator is not responsible for manual zero/span/precision checks, or multipoint calibrations, of the ozone analyzer.

#### 3 Parameter: DocumentationCo

There are no hardcopies of manuals and operating procedures on-site. All documentation is available via the internet. Status of updates to documentation is evaluated during TSA by EPA.

#### 4 Parameter: SitingCriteriaCom

A small parking lot for park service employees is located approximately 40 meters north of the site.

#### 5 Parameter: ShelterCleanNotes

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

#### 6 Parameter: MetOpMaintCom

The temperature sensor has been replaced with an "all-in-one" sensor a the top of the sample tower. The sensor is not submergible and therefore it was tested by placing the standard RTD in proximity with the site sensor.
**Data Compiled:** 12/18/2024 7:46:17 AM

### SiteVisitDate Site Technician

12/17/2024 DUK008 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	6	0.31	с	Р
2	Temperature max error	Р	4	0.5	6	0.36	с	Р
3	Ozone Slope	Р	0	1.1	4	0.97387	unitless	Р
4	Ozone Slope	Р	0	1.1	4	0.97387	unitless	Р
5	Ozone Intercept	Р	0	5	4	0.65573	ppb	Р
6	Ozone Intercept	Р	0	5	4	0.65573	ppb	Р
7	Ozone correlation	Р	0	0.995	4	0.99996	unitless	Р
8	Ozone correlation	Р	0	0.995	4	0.99996	unitless	Р
9	Ozone % difference avg	Р	7	10	4	1.5	%	Р
10	Ozone Absolute Difference g1	Р	7	3	1	0.98	ppb	Р
11	Ozone Absolute Difference g2	Р	7	1.5	1	0.13	ppb	Р
12	Flow Rate average % difference	Р	10	5	2	2.74	%	Р
13	Flow Rate max % difference	Р	10	5	2	2.74	%	Р
14	DAS Voltage average error	Р	4	0.003	2	0.0000	V	Р
15	Shelter Temperature average error	Р	5	2	2	0.43	с	Р
16	Shelter Temperature max error	Р	5	2	2	0.60	с	Р

### **Field Systems Comments**

#### 1 Parameter: DasComments

All measurements (temperature and flow rate) are being made above tree canopy approximately 47.5 meters above ground.

#### 2 Parameter: ShelterCleanNotes

The shelter is custom built and in very good condition.

#### 3 Parameter: SitingCriteriaCom

The station measurements are being mace above the tree canopy in the Duke Experimental Forest near Durham, NC.

#### 4 Parameter: PollAnalyzerCom

The site is located on a 47 meter walkup tower in Duke Forest. There is a small footprint site at the top of the tower with its own data logger, filter pack flow system, and temperature measurement at 47.5 meters above ground. The ozone inlet is also at 47.5 meters. The ozone monitor, zero air system, and ozone level 3 standard are located in a climate controlled shelter at the bottom of the tower with a separate data logger.

**Data Compiled:** 11/5/2024 5:18:21 PM

### SiteVisitDate Site Technician

10/20/2024 ESP127 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	12	0.14	с	Р
2	Temperature max error	Р	4	0.5	12	0.23	с	Р
3	Ozone Slope	Р	0	1.1	4	1.01017	unitless	Р
4	Ozone Intercept	Р	0	5	4	-1.19328	ppb	Р
5	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
6	Ozone % difference avg	Р	7	10	4	3.0	%	Р
7	Ozone Absolute Difference gl	Р	7	3	1	-0.88	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-1.09	ppb	Р
9	Flow Rate average % difference	Р	10	5	2	0.67	%	Р
10	Flow Rate max % difference	Р	10	5	2	0.67	%	Р
11	DAS Voltage average error	Р	4	0.003	15	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	16	0.42	с	Р
13	Shelter Temperature max error	Р	5	2	16	0.44	с	Р

### **Field Systems Comments**

#### 1 Parameter: DasComments

The sample tower is the original design, Type A tower, and is now very difficult to close due to lack of clearance between the locking tabs. There is also a dimple at the hinge point that is likely to worsen and eventually break through the tower legs. The tower should be replaced in the near future.

#### 2 **Parameter:** SiteOpsProcedures

Although the SSRF indicates that the ozone inlet filter is replaced every week, it was confirmed with the site operator that it is changed on the regular every two week schedule, and the SSRF entry is in error.

#### 3 Parameter: ShelterCleanNotes

The shelter is in generally good condition, however there is still some rot in the walls.

#### 4 Parameter: PollAnalyzerCom

There is a lawn mower and gasoline stored in the shelter with noticeable odor of gasoline vapor.

**Data Compiled:** 11/9/2024 5:46:07 PM

SiteVisitDate	Site	Technician
10/08/2024	GRS420	Eric Hebert

#### Records with valid pass/fail criteria

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	0.99777	unitless	Р
2	Ozone Intercept	Р	0	5	4	-0.09345	ppb	Р
3	Ozone correlation	Р	0	0.995	4	1.00000	unitless	Р
4	Ozone % difference avg	Р	7	10	4	0.7	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	0.03	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	-0.26	ppb	Р

## **Field Performance Comments**

1	Parameter:	Ozone	SensorComponent:	Cell B Freq.	CommentCode: 99
	This analyzer	liagnostic check is outsic	le the manufacturer's recor	mmended value.	
2	Parameter:	Ozone	SensorComponent:	Cell A Freq.	CommentCode: 99
	This analyzer of	liagnostic check is outsid	le the manufacturer's recor	nmended value.	

**Data Compiled:** 11/16/2024 7:41:37 AM

### SiteVisitDate Site Technician

11/15/2024 SAL133 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	18	0.43	с	Р
2	Temperature max error	Р	4	0.5	18	0.73	с	Fail
3	Ozone Slope	Р	0	1.1	4	1.02273	unitless	Р
4	Ozone Intercept	Р	0	5	4	-0.59647	ppb	Р
5	Ozone correlation	Р	0	0.995	4	1.00000	unitless	Р
6	Ozone % difference avg	Р	7	10	4	1.6	%	Р
7	Ozone Absolute Difference gl	Р	7	3	1	-0.6	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	-0.35	ppb	Р
9	Flow Rate average % difference	Р	10	5	8	0.89	%	Р
10	Flow Rate max % difference	Р	10	5	8	1.32	%	Р
11	DAS Voltage average error	Р	4	0.003	15	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	16	1.03	с	Р
13	Shelter Temperature max error	Р	5	2	16	1.06	c	Р

11/15/2024 SAL133

Technician Eric Hebert

## **Field Performance Comments**

1	Parameter:	Flow Rate	SensorComponent:	Accuracy	CommentCode:	180

An excessive amount of fluctuation in the signal recorded by the DAS for this variable was observed during the audit.

# **Field Systems Comments**

### 1 Parameter: SiteOpsProcedures

The ozone inlet filter is replaced and a zero/span/precision test is performed approximately monthly. The SSRF indicates that the ozone inlet filter "outside" filter is changed every week because "outside" filter is confused with the filter pack. This is not the only observation of incorrect documentation for the ozone inlet filter. It is suggested that the SSRF be changed to replace "outside" filter with "ozone inlet filter".

### 2 Parameter: SitingCriteriaCom

The site is located next to a field usually planted with corn or soy beans.

### 3 Parameter: ShelterCleanNotes

The shelter is in fair condition, ants are present. It is somewhat clean, neat, and well organized.

### 4 Parameter: MetOpMaintCom

The temperature signal cable is showing signs of wear.

**Data Compiled:** 1/15/2025 12:53:03 PM

# SiteVisitDateSiteTechnician12/20/2024SHN418Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	0.99310	unitless	Р
2	Ozone Intercept	Р	0	5	4	-0.11869	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
4	Ozone % difference avg	Р	7	10	4	0.7	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	-0.31	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	0.00	ppb	Р

**Data Compiled:** 1/13/2025 3:22:33 PM

### SiteVisitDate Site Technician

11/24/2024 SPD111 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Temperature average error	Р	4	0.5	24	0.17	с	Р
2	Temperature max error	Р	4	0.5	24	0.29	с	Р
3	Ozone Slope	Р	0	1.1	4	1.00198	unitless	Р
4	Ozone Intercept	Р	0	5	4	0.02563	ppb	Р
5	Ozone correlation	Р	0	0.995	4	0.99999	unitless	Р
6	Ozone % difference avg	Р	7	10	4	0.6	%	Р
7	Ozone Absolute Difference g1	Р	7	3	1	0.07	ppb	Р
8	Ozone Absolute Difference g2	Р	7	1.5	1	0.26	ppb	Р
9	Flow Rate average % difference	Р	10	5	4	1.75	%	Р
10	Flow Rate max % difference	Р	10	5	4	1.96	%	Р
11	DAS Voltage average error	Р	4	0.003	11	0.0000	V	Р
12	Shelter Temperature average error	Р	5	2	8	0.28	с	Р
13	Shelter Temperature max error	Р	5	2	8	0.28	с	Р

### **Field Systems Comments**

#### 1 Parameter: DasComments

The sample tower is an older Type A tower and some small cracks are present in the tower legs. The tower clamps are very rusty. The current tower location is meeting NADP siting criteria.

#### 2 Parameter: ShelterCleanNotes

The shelter has deteriorated severely during the last year. The site operator is currently obtaining estimates for repair to the floor and walls.

#### 3 Parameter: SitingCriteriaCom

The site is in a pasture with as many as 75 cattle. The cattle are fed within 100 meters of the site. When the site is visited the cattle approach to within 10 meters of the site.

**Data Compiled:** 1/13/2025 1:21:31 PM

# SiteVisitDate Site Technician 11/11/2024 STK138 Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	1.01978	unitless	Р
2	Ozone Intercept	Р	0	5	4	0.01972	ppb	Р
3	Ozone correlation	Р	0	0.995	4	1.00000	unitless	Р
4	Ozone % difference avg	Р	7	10	4	2.1	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	-0.07	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	0.25	ppb	Р

**Data Compiled:** 1/13/2025 2:13:26 PM

# SiteVisitDateSiteTechnician12/20/2024VPI120Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	1.0095	unitless	Р
2	Ozone Intercept	Р	0	5	4	-0.56232	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99993	unitless	Р
4	Ozone % difference avg	Р	7	10	4	1.3	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	-0.25	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	-0.3	ppb	Р

**Data Compiled:** 1/15/2025 12:53:40 PM

# SiteVisitDateSiteTechnician12/21/2024WSP144Eric Hebert

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	0.98264	unitless	Р
2	Ozone Intercept	Р	0	5	4	0.41039	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99998	unitless	Р
4	Ozone % difference avg	Р	7	10	4	1.1	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	0.67	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	-0.22	ppb	Р

**Data Compiled:** 1/13/2025 1:12:32 PM

# SiteVisitDateSiteTechnician11/10/2024ZIO433Martin Valvur

Line	Audited Parameter	DAS	Ch. #	Criteria +/-	Counts	QaResult	Units	Pass/Fail
1	Ozone Slope	Р	0	1.1	4	0.98434	unitless	Р
2	Ozone Intercept	Р	0	5	4	0.16074	ppb	Р
3	Ozone correlation	Р	0	0.995	4	0.99994	unitless	Р
4	Ozone % difference avg	Р	7	10	4	0.8	%	Р
5	Ozone Absolute Difference g1	Р	7	3	1	-0.24	ppb	Р
6	Ozone Absolute Difference g2	Р	7	1.5	1	0.04	ppb	Р