



Sumatra, FL (SUM156)

2015 CASTNET Annual Network Plan

Clean Air Markets Division
Office of Atmospheric Programs
US Environmental Protection Agency

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1. Network Overview

The Clean Air Status and Trends Network (CASTNET) is a long-term monitoring network designed to measure acidic pollutants and ambient ozone concentrations in rural areas. CASTNET is managed collaboratively by the Environmental Protection Agency – Clean Air Markets Division (EPA), the National Park Service – Air Resources Division (NPS), and the Bureau of Land Management – Wyoming State Office (BLM-WSO). In addition to EPA, NPS, and BLM-WSO, numerous other participants including tribes, other federal agencies, States, private land owners, and universities provide network support. The EPA contractor, AMEC Foster Wheeler (AMEC), operates the EPA-sponsored sites while the NPS and BLM-WSO contractor, Air Resource Specialists, Inc. (ARS), operates the remaining sites. An overview of the CASTNET monitoring program can be found here: http://epa.gov/castnet/javaweb/docs/CASTNET_Factsheet_2013.pdf.

All CASTNET sites measure weekly concentrations of SO₂, SO₄²⁻, HNO₃, NO₃⁻, NH₄⁺, Cl⁻ and the base cations using a 3-stage filter pack. Most CASTNET sites also monitor ambient ozone (O₃) concentrations, reported as hourly averages, using a continuous analyzer. All CASTNET O₃ monitors, except the Howland AmeriFlux site, ME (HOW191), meet the siting criteria as specified within 40 Code of Federal Regulations (CFR) Part 58 Appendices D and E. These O₃ monitors collect hourly measurements on a continuous basis for the entire year and utilize daily one-point quality control (QC) checks. Additional information regarding detailed siting criteria, monitoring objectives, site types, and other relevant parameters for each monitoring site per the requirements of 40 CFR Part 58.10(b) may be found in Appendix A.

As of June 2015, 93 CASTNET sites include a 3-stage filter pack. Seventy-nine CASTNET sites collect ambient O₃ concentrations and 32 of these sites measure meteorology continuously. CASTNET also measures continuous trace level NO_y, SO₂, and CO at select sites. To ensure consistency across the network, EPA operates a collocated site (ROM206) at Rocky Mountain National Park, Colorado (ROM406). Also, EPA operates a collocated monitor (MCK231) at Mackville, KY (MCK131). Data are routinely compared to identify any biases between ambient data from collocated instruments. The CASTNET quality assurance (QA) program is managed by an independent QA Manager and QA Project Supervisor. Additionally, network QA is maintained through an independent audit program supported by Environmental Engineering & Measurement Services, Inc. (EE&MS). EE&MS performs annual Performance Evaluations (PE) at every CASTNET O₃ site unless a State or EPA Regional Office performs this annual audit. EE&MS also performs a Technical Systems Audit (TSA) at every CASTNET site every other year. A third-party auditor performs the facility TSA at the operations centers for both the EPA and NPS/BLM-WSO contractors and laboratories every third year.

The NPS established their regulatory O₃ monitoring program before 1990. In 2010 and 2011, EPA upgraded all EPA-sponsored CASTNET O₃ analyzers to Thermo Scientific™ Model 49i monitors, installed Thermo Scientific™ Model 49i monitors with onboard O₃-generators as on-site transfer standards, and updated the QA/QC procedures at all EPA-sponsored sites to comply with the requirements in 40 CFR Part 58. This upgrade improved the overall quality of data, reliability of the analyzers, and comparability of the data with other regulatory monitoring networks (e.g., State and Local Air Monitoring Sites (SLAMS), NCore).

CASTNET O₃ data are used to calculate design values for all sites where data completeness requirements are met. The CASTNET program follows QA/QC procedures and schedules to meet the regulatory requirements detailed in Appendix B. The procedures in this annual network plan originate from the requirements placed on States for SLAMS per guidance in 40 CFR Part 58.10, but have been adjusted to encompass a federally-operated national monitoring network.

2. Ozone Data

CASTNET monitors measure ambient O₃ concentrations for the entire year, which extends beyond the required ozone season for most states (Appendix C). CASTNET submits ambient concentrations in near real time to AIRNow Tech <www.airnowtech.org> and reports data to the CASTNET website daily <<http://epa.gov/castnet/javaweb/index.html>>. BLM-WSO also displays O₃ data on their website <<http://www.blmwarms.net/>>. AMEC and ARS submit the hourly O₃ concentrations to EPA's Air Quality System's (AQS) database on a monthly basis and daily 1-point precision results on a quarterly basis.

EPA submits O₃ data from two collocated monitors (ROM206 and MCK231) to AQS, but the data are identified as 'NAAQS Excluded' as these data are used for QA purposes. In addition to the collocated QA monitors, EPA operates a non-regulatory O₃ analyzer above the tree canopy (23.5 meters (m)) at the Howland AmeriFlux site, ME (HOW191). The HOW191 O₃ monitor does not meet the siting criteria in 40 CFR Part 58 Appendix E, so these data are not submitted to AQS.

Following guidance in 40 CFR Part 58.15, CASTNET site managers submit their annual data certification letter, including the AQS Data Certification Report (AMP600) to the EPA Office of Air Quality Planning and Standards (OAQPS) and applicable EPA Regional Offices by May 1 of each year. When air monitoring data are affected by exceptional events, States may petition EPA to exclude those data from any use related to NAAQS determinations. As detailed in 40 CFR Part 50.14 and the Exceptional Events Rule <<http://www.epa.gov/ttn/analysis/exevents.htm>>, State agencies are required to demonstrate to their EPA Regional Office when an exceptional event occurred. States have until July 1 of the following calendar year to identify hourly O₃ values that may have been affected by an exceptional event and request that the data be flagged accordingly in AQS. When a State agency believes that CASTNET O₃ data are affected by an exceptional event, the agency should submit the following information to Timothy Sharac (sharac.timothy@epa.gov) to request the data be flagged as a possible exceptional event:

- date/time range of incident,
- type of exceptional event, and
- CASTNET site(s)

Exceptional event types and their associated AQS qualifier codes are listed at the following website: <<https://aq5.epa.gov/aqsweb/codes/data/QualifierCodes.html>>.

CASTNET uses the measurement quality objectives and validation templates described in the *Quality Assurance Handbook for Air Pollution Measurement Systems QA Handbook Volume II, Appendix D Revision 0, May 2013*

<<http://www.epa.gov/ttnamti1/files/ambient/pm25/qa/QA-Handbook-Vol-II.pdf>> (reproduced in Appendix B of this document) to ensure that the highest quality data are being submitted to AQS. These validation templates describe operational and systematic criteria for O₃ measurements, including requirements for frequency of measurements or audits, calibration schedules, and acceptance criteria for QC checks.

In addition to the QC checks required for meeting the measurement quality objectives and validation templates, semi-annual system checks are performed at each CASTNET site. During these checks, a field operations technician challenges the on-site analyzer and re-verifies the on-site transfer standard, calibrates the on-site analyzer to the traveling transfer standard (Level 2) as needed, and verifies the data logger and the shelter temperature probe using National Institute of Standards and Technology (NIST) traceable standards. All on-site O₃ transfer standards at CASTNET sites are NIST-traceable at Level 3. CASTNET contractors use the results from these system checks to perform the final validation of the hourly O₃ measurement data. A flow chart diagram of the O₃ certification process is illustrated in Appendix D.

3. Network Audit Requirements

The network audit requirements for 40 CFR Part 58 compliance are summarized in Appendix B. CASTNET managers provide EPA Regional Offices with the facility and field TSA schedules at least 6 months in advance to ensure EPA Regional Offices have sufficient time to arrange for travel if they choose to attend the audit. The EPA Regional Office contacts are listed in Appendix E.

4. Daily Quality Control Checks

Automated zero/precision/span (ZPS) scans are performed nightly at 0, 60, and 225 ppb, respectively, but additional scans may be run manually to troubleshoot problems. The criteria for the automated ZPS scans are included in Appendix B. Three additional audit points at 40, 90, and 150 ppb are verified during the Sunday multi-point check at EPA-sponsored CASTNET sites. Daily QC results are updated on the CASTNET website daily for EPA-sponsored CASTNET sites.

5. Performance Evaluations (PE)

An independent auditor performs annual PEs in accordance with EPA's *Quality Assurance Handbook for Air Pollution Measurement Systems: Volume II - Ambient Air Specific Methods*, and *40 CFR Parts 53 and Parts 58 Revisions to Ambient Air Monitoring Regulations: Final Rule* and submits these results to AQS on a quarterly basis. Verification of the O₃ analyzer during the PE audit requires that the zero/span be within $\pm 2\%$ of the full scale of the best fit linear line. The auditor selects target concentration values among the ten audit levels, as described in guidance from OAQPS in 2011 <<http://www.epa.gov/ttn/airs/airsaqs/memos/expanded%20audit.pdf>>. A minimum of three audit levels that represent routine concentrations at the monitoring site are required (see Table 1 for acceptable audit ranges). Audit levels 1 and 2 must be within ± 1.5 ppb or within $\pm 15\%$, whichever is greater, to meet the acceptance criteria. Levels 3-10 must be within $\pm 15\%$ to meet the acceptance criteria. The target values must bracket 85% of a site's concentration levels.

Table 1 Audit Levels for Performance Evaluations (PE)¹

Audit Level	Concentration Range, ppm	Acceptance Criteria
1	0.004 – 0.0059	±1.5 ppb or ±15%, whichever is greater
2	0.006 – 0.019	±1.5 ppb or ±15%, whichever is greater
3	0.020 – 0.039	±15%
4	0.040 – 0.069	±15%
5	0.070 – 0.089	±15%
6	0.090 – 0.119	±15%
7	0.120 – 0.139	±15%
8	0.140 – 0.169	±15%
9	0.170 – 0.189	±15%
10	0.190 - 0.259	±15%

¹ US EPA OAQPS. “Guidance on Statistics for Use at Audit Levels 1 and 2 of the Expanded List of Audit Levels for Annual Performance Evaluation for SO₂, NO₂, O₃, and CO as Described in 40 CFR Part 58 Appendix A Section 3.2.2” Feb 17, 2011.

The proposed PE and TSA audit schedule for CASTNET sites is shown in Table 2 below. The independent auditor uses equipment that is NIST-certified (verified twice per year). The independent auditor performs a PE audit at each site annually and performs a field TSA which includes flow, meteorological sensors, and related parameters every other year. States may perform PE audits if they coordinate with the sponsoring agency, site supervisor, and independent auditor as explained in the third-party CASTNET audit document <http://www.epa.gov/castnet/javaweb/ozone/Third_Party_Audits.pdf>.

Table 2 Proposed PE and Field TSA Schedule for 2015 and 2016

EPA Rgn	State	AQS ID	POC	SITE ID	Site Name	Audit Type Even Years	Audit Month Even Years	Audit Type Odd Years	Audit Month Odd Years
1	CT	090159991	1	ABT147	Abington	TSA	October	PE	September
1	ME	230090103	1	ACA416	Acadia NP	TSA	October	PE	September
1	ME	230039991	1	ASH135	Ashland	TSA	September	PE	September
1	NH	330099991	1	WST109	Woodstock	TSA	October	PE	September
2	NJ	340219991	1	WSP144	Wash. Crossing	PE	October	TSA	October
2	NY	361099991	1	CTH110	Connecticut Hill	TSA	September	PE	November
2	NY	360319991	1	HWF187	Huntington Wildlife Forest	TSA	September	PE	September
3	MD	240339991	1	BEL116	Beltsville	TSA	November	PE	October
3	MD	240199991	1	BWR139	Blackwater NWR	PE	November	TSA	October
3	PA	420019991	1	ARE128	Arendtsville	TSA	November	PE	October
3	PA	420479991	1	KEF112	Kane Exp. Forest	TSA	October	PE	November
3	PA	421119991	1	LRL117	Laurel Hill	PE	October	TSA	November
3	PA	420859991	1	MKG113	M.K. Goddard	TSA	October	PE	November
3	PA	420279991	1	PSU106	Penn State	TSA	November	PE	October
3	WV	540219991	1	CDR119	Cedar Creek	PE	October	TSA	November
3	WV	540939991	1	PAR107	Parsons	PE	October	TSA	November
3	VA	511479991	1	PED108	Prince Edward	PE	September	TSA	September
3	VA	510719991	1	VPI120	Horton Station	PE	September	TSA	September
3	VA	511130003	1	SHN418	Shenandoah NP - Big Meadows	PE	November	TSA	November
4	AL	010499991	1	SND152	Sand Mountain	TSA	February	PE	February

Table 2 Proposed PE and Field TSA Schedule for 2015 and 2016 (continued)

EPA Rgn	State	AQS ID	POC	SITE ID	Site Name	Audit Type Even Years	Audit Month Even Years	Audit Type Odd Years	Audit Month Odd Years
4	FL	120619991	1	IRL141	Indian River Lagoon	TSA	February	PE	February
4	FL	120779991	1	SUM156	Sumatra	TSA	February	PE	February
4	GA	132319991	1	GAS153	Georgia Station	TSA	February	PE	February
4	KY	212219991	1	CDZ171	Cadiz	PE	March	TSA	March
4	KY	211759991	1	CKT136	Crockett	PE	April	TSA	March
4	KY	212299991	1	MCK131	Mackville	PE	March	TSA	March
4	KY	212299991	2	MCK231	Mackville Collocated	PE	March	TSA	March
4	KY	210610501	1	MAC426	Mammoth Cave NP	PE	March	TSA	March
4	MS	281619991	1	CVL151	Coffeetown	PE	March	TSA	February
4	NC	370319991	1	BFT142	Beaufort	PE	November	TSA	October
4	NC	371239991	1	CND125	Candor	PE	November	TSA	October
4	NC	371139991	1	COW137	Coweeta	TSA	March	PE	March
4	NC	370119991	1	PNF126	Cranberry	TSA	March	PE	March
4	TN	470419991	1	ESP127	Edgar Evins	TSA	April	PE	April
4	TN	470259991	1	SPD111	Speedwell	TSA	March	PE	April
4	TN	470090101	1	GRS420	Great Smoky NP - Look Rock	PE	October	TSA	September
5	IL	171199991	1	ALH157	Alhambra	PE	June	TSA	August
5	IL	170191001	1	BVL130	Bondville	PE	August	TSA	August
5	IL	170859991	1	STK138	Stockton	PE	June	TSA	August
5	IN	181699991	1	SAL133	Salamonie Reservoir	TSA	August	PE	August
5	IN	180839991	1	VIN140	Vincennes	PE	June	TSA	August
5	MI	261619991	1	ANA115	Ann Arbor	TSA	August	PE	August
5	MI	261659991	1	HOX148	Hoxeyville	TSA	August	PE	August
5	MI	261579991	1	UVL124	Unionville	TSA	August	PE	August
5	MN	271370034	1	VOY413	Voyageurs NP	PE	August	TSA	August
5	OH	390479991	1	DCP114	Deer Creek	PE	April	TSA	April
5	OH	390179991	1	OXF122	Oxford	PE	April	TSA	April
5	OH	391219991	1	QAK172	Quaker City	PE	April	TSA	April
5	WI	551199991	1	PRK134	Perkinstown	PE	August	TSA	August
6	AR	050199991	1	CAD150	Caddo Valley	PE	February	TSA	February
6	OK	400019009	1	CHE185	Cherokee Nation	PE	February	TSA	March
6	TX	483739991	1	ALC188	Alabama-Coushatta	PE	March	TSA	February
6	TX	480430101	1	BBE401	Big Bend NP	PE	March	TSA	March
6	TX	483819991	1	PAL190	Palo Duro	PE	February	TSA	March
7	NE	311079991	1	SAN189	Santee Sioux	PE	July	TSA	June
8	CO	080519991	1	GTH161	Gothic	PE	June	TSA	June

Table 2 Proposed PE and Field TSA Schedule for 2015 and 2016 (continued)

EPA Rgn	State	AQS ID	POC	SITE ID	Site Name	Audit Type Even Years	Audit Month Even Years	Audit Type Odd Years	Audit Month Odd Years
8	CO	080830101	1	MEV405	Mesa Verde NP	TSA	April	PE	April
8	CO	080699991	1	ROM206	Rocky Mtn NP Collocated	PE	June	TSA	June
8	CO	080690007	1	ROM406	Rocky Mtn NP Collocated	PE	June	TSA	June
8	MT	300298001	1	GLR468	Glacier NP	TSA	June	PE	June
8	ND	380070002	1	THR422	Theodore Roosevelt NP	PE	September	TSA	July
8	SD	460330132	3	WNC429	Wind Cave NP	PE	September	TSA	July
8	UT	490370101	1	CAN407	Canyonlands NP	TSA	April	PE	April
8	UT	490471002	1	DIN431	Dinosaur NM	TSA	July	PE	July
8	WY	560030002	1	BAS601	Basin	PE	June	TSA	June
8	WY	560019991	1	CNT169	Centennial	PE	June	TSA	June
8	WY	560450003	1	NEC602	Newcastle	PE	June	TSA	June
8	WY	560359991	1	PND165	Pinedale	PE	August	TSA	June
8	WY	560391011	1	YEL408	Yellowstone NP	PE	June	TSA	May
9	AZ	040038001	1	CHA467	Chiricahua NM	TSA	April	PE	April
9	AZ	040058001	1	GRC474	Grand Canyon NP	TSA	April	PE	April
9	AZ	040170119	1	PET427	Petrified Forest	TSA	April	PE	April
9	CA	060719002	1	JOT403	Joshua Tree NP	TSA	May	PE	April
9	CA	060893003	1	LAV410	Lassen Volcanic NP	PE	May	TSA	May
9	CA	060690003	1	PIN414	Pinnacles NM	PE	May	TSA	April
9	CA	061070009	1	SEK430	Sequoia NP - Ash Mountain	PE	May	TSA	May
9	CA	060430003	1	YOS404	Yosemite NP - Turtleback Dome	PE	May	TSA	May
9	NV	320330101	1	GRB411	Great Basin NP	TSA	May	PE	April
10	AK	020680003	1	DEN417	Denali NP	TSA	July	PE	June

Note: See Appendix H for CBSA Codes for CASTNET sites as available

6. Field TSA

An independent auditor performs field TSAs every other year at each CASTNET site. The purpose of these audits is to provide an independent assessment of the site, the equipment performance, and the proficiency of the site operator. The auditor verifies that filter pack flow, the O₃ analyzer, and the meteorological sensors meet the criteria listed in Appendix B and the CASTNET QAPP at <http://java.epa.gov/castnet/documents.do>. The auditor also completes a PE for O₃ in addition to field TSAs. The auditor performs through-the-probe (TTP) audits to verify there are no line losses within the system and documents whether any objects or pollutant sources violate the CASTNET siting criteria; see the CASTNET QAPP for siting criteria at <http://java.epa.gov/castnet/documents.do>. During the field TSA, the auditor discusses any issues related to equipment, siting criteria, or operator handling with the operator and/or site supervisor. The independent auditor submits audit results to the site supervisor, site operator, site funding agency, and CASTNET contractor following the audit. A summary of audit results are available in a quarterly report and posted to the CASTNET website under "Quality Assurance" at <http://java.epa.gov/castnet/documents.do>.

The independent auditor sends TSA announcement letters to the agency contractor, site operator, and site sponsor describing the purpose of the site visit 2-4 weeks prior to field TSA to ensure all parties involved are prepared. An EPA, NPS, or BLM-WSO representative may also attend the field TSA. CASTNET staff coordinate with States and EPA Regional Offices to provide six months' notice prior to the field TSAs and their participation in the field TSAs is encouraged. The EPA Regional Office contacts are listed in Appendix E. The proposed schedule for 2015 is shown in Table 2. It is required that at least ten percent of all CASTNET sites have a field TSA completed each year. CASTNET performs field TSAs at fifty percent of the network sites each year to ensure network-wide consistency in the data, exceeding the ten percent requirement for regulatory monitors.

7. National Performance Audit Program (NPAP)

The purpose of the NPAP is to assess the proficiency of the monitoring organization. The EPA Clean Air Markets Division (CAMD) coordinates with OAQPS, EPA Regional Offices (listed in Appendix E), and the Environmental Services Assistance Team (ESAT) to fulfill the requirements under the NPAP. Each network is required to complete NPAP audits at 20% of the sites each year. OAQPS is responsible for selecting the sites to audit, and special priority is given to those sites with design values near the ozone NAAQS. The NPAP auditor is responsible for submitting the audit results to AQS. Through-the-probe audits are also performed during an NPAP audit using a zero air generator to supply the carrier gas to an ozone generator. Audit ozone concentrations are delivered to the through-the-probe dual glass manifold connected to the monitor's inlet probe while venting excess flow to the atmosphere. The ozone generator is referenced back to a level 2 ozone standard which is in turn referenced to a level 1 standard reference photometer. The auditor selects 3 or 4 known target concentrations to determine the accuracy of the on-site ozone analyzer. The acceptable ranges are the same as those used for the annual performance evaluations in Table 1.

Table 3 NPAP Audit History for 2011-2015 Period (as of June 2015)

EPA Region	Audited	Total Sites	Completed (%)	Scheduled for 2015	Scheduled Completion for 2015 (%)
1	5	5	100	0	100
2	3	3	100	0	100
3	7	12	58	5	100
4	8	17	47	9	100
5	8	13	62	5	100
6	5	5	100	0	100
7	1	1	100	0	100
8	11	13	85	2	100
9	8	9	89	1	100
10	1	1	100	0	100

8. Facilities TSA

CASTNET uses an independent auditor to conduct the facilities portion of the TSA at contractor ozone laboratories once every three years. CASTNET staff may also attend the facility audit when travel funds are available. CASTNET staff provide the date of the scheduled audit to the EPA Regional Offices at least six months prior to the visit. The purpose of the facility TSA is to provide a qualitative appraisal of the total measurement system. Site planning, organization, documentation and operation are evaluated to ensure that good QA/QC practices are being applied throughout the monitoring program. An outline of the facility TSA is available in Appendix F. RTI International last performed facility TSAs at AMEC, Inc. in Newberry, FL in 2012 and at ARS, Inc. in Fort Collins, CO in 2013. An independent auditor will be selected for the 2015 AMEC Foster Wheeler facility audit. The facility TSA consists of an

assessment of the staff, facilities, data and document control, and the quality control programs. Results, findings, and the responses to the findings can be found on the CASTNET/Ozone webpage <<http://epa.gov/castnet/javaweb/ozone.html>>.

9. Annual Monitoring Network Plans and Network Assessment

CASTNET staff prepare an annual CASTNET monitoring network plan for public review. The network plan focuses on the CASTNET O₃ program and addresses the monitoring requirements of 40 CFR 58.10(b). EPA, NPS, and BLM-WSO consult with OAQPS and applicable EPA Regional Offices ahead of adding or discontinuing O₃ monitors in accordance with 40 CFR 58.14 and any changes are included in this CASTNET annual network plan. CASTNET staff collect additional comments on the CASTNET annual network plan by sending draft copies to the National Association of Clean Air Agencies (NACAA) and the Association of Air Pollution Control Agencies (AAPCA). A draft copy is also distributed through OAQPS’ monitoring list-serve. CASTNET staff contact States directly if these States use a CASTNET monitor in place of a State-operated O₃ monitor (e.g., SLAMS) to ensure their participation in the planning process. CASTNET staff submit a final version of the annual network plan and responses to any comments received to the draft annual network plan to the EPA CASTNET ozone webpage <<http://epa.gov/castnet/javaweb/ozone.html>> and OAQPS’ AMTIC webpage <<http://www.epa.gov/ttn/amtic/plans.html>>. The schedule for these activities is outlined in Table 4. The Division Director or a designee at the EPA’s Clean Air Markets Division approves this plan with input from the public by July 1. OAQPS provides comments within 120 days on any plans proposing changes to the O₃ network.

Table 4 Network Plan Schedule

Date	Network Plan Steps
March 1	Submit network plan to NPS/BLM-WSO for review
May 1	Distribute network plan to OAQPS, OAQPS list-serve, EPA Regional Offices, NACAA, AAPCA and post for public review on the CASTNET webpage
June 1	Deadline for public comments to network plan
June 25	CASTNET staff complete response to public comments
July 1	CASTNET staff distribute final version of plan
October 31	OAQPS/Lead EPA Regional Office review plan and provide approval

EPA completes a network assessment every 5 years in accordance with 40 CFR 58.10(d). CASTNET staff submit the network assessment to the EPA CASTNET ozone webpage <<http://epa.gov/castnet/javaweb/ozone.html>> and OAQPS’ AMTIC webpage <<http://www.epa.gov/ttn/amtic/plans.html>>. The next assessment is due July 1, 2020, and every 5 years thereafter.

Some States include CASTNET sites in their network plan to fulfill their requirement for rural monitoring sites. These States should notify the CASTNET agency sponsor that they will be using the CASTNET site in their plan so that the State may be included in any discussions related to changes at the site.

10. Ozone Network Modification

As of June 2015, the following network modifications have occurred:

- Ahead of the 2015 O₃ season, CASTNET adjusted the monitor monitoring objective type of the collocated ozone monitor in Mackville, KY from “Highest concentration” to “Quality assurance” (MCK231 21-229-9991, POC 2) and applied the Monitor NAAQS Exclusion identifier to this monitor beginning on January 1, 2015.
- The National Park Service announced plans to add an additional CASTNET O₃ site at Chaco National Park in New Mexico to be operated by the Bureau of Land Management – New Mexico.

11. Data Reporting and Certification

CASTNET staff submit applicable ambient and quality assurance data to AQS within 90 days after the end of each quarterly reporting period. CASTNET complies with the annual air monitoring certification requirements in accordance with 40 CFR 58.15-16. EPA, NPS, and BLM-WSO certify CASTNET ambient O₃ and quality assurance data by May 1 for the prior calendar year for their respective CASTNET sites and submit the data to OAQPS for review.

Appendix A. Detailed Site Information (Page 1 of 79)

CASTNET O₃ monitors meet the siting criteria as specified within 40 CFR Part 58 Appendices D and E. Following guidance from 40 CFR Part 58.10b, the following detailed information required for each CASTNET monitor is listed in the following pages.

The following parameters are the same at all CASTNET sites:

- Current sampling frequency is continuous
- Sampling season is 01/01 – 12/31
- Frequency of one-point QC check is daily

Parameters required by Part 58.10b, but not available include:

- Traffic count (AADT)

Appendix A. Detailed Site Information (Page 2 of 79)

AQS ID	01-049-9991
CASTNET ID	SND152
Site Name	Sand Mountain
GPS Coordinates	34.289001, -85.970065
Street Address	Sand Mountain Alabama Agricultural Experiment Station, Crossville, AL 35962
County	DeKalb
Distance to Roadway	> 100 meters
CBSA Name	Fort Payne, AL Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	05-MAR-14

Appendix A. Detailed Site Information (Page 3 of 79)

AQS ID	02-068-0003
CASTNET ID	DEN417
Site Name	Denali NP
GPS Coordinates	63.7232, -148.9676
Street Address	Denali National Park
County	Denali
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Unknown
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Neighborhood
Reporting Agency	National Park Service
Start Date	01-JUN-87
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	24-JUN-14

Appendix A. Detailed Site Information (Page 4 of 79)

AQS ID	04-003-8001
CASTNET ID	CHA467
Site Name	Chiricahua NM
GPS Coordinates	32.009405, -109.389058
Street Address	Chiricahua National Monument
County	Cochise
Distance to Roadway	> 100 meters
CBSA Name	Sierra Vista-Douglas, AZ Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-JUL-89
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	23-APR-14

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AQS ID	04-005-8001
CASTNET ID	GRC474
Site Name	Grand Canyon NP
GPS Coordinates	36.058642, -112.183575
Street Address	Grand Canyon National Park, W Rim Drive
County	Coconino
Distance to Roadway	> 100 meters
CBSA Name	Flagstaff, AZ Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-JUL-89
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	08-APR-14

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AQS ID	04-017-0119
CASTNET ID	PET427
Site Name	Petrified Forest
GPS Coordinates	34.822508, -109.892485
Street Address	Petrified Forest NP, Near Old Sw Entrance On Old Route 180
County	Navajo
Distance to Roadway	> 100 meters
CBSA Name	Show Low, AZ Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-OCT-02
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	07-APR-14

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AQS ID	05-019-9991
CASTNET ID	CAD150
Site Name	Caddo Valley
GPS Coordinates	34.179278, -93.098755
Street Address	Lower Lake Recreation Area, Caddo Valley, Ar 71923
County	Clark
Distance to Roadway	> 100 meters
CBSA Name	Arkadelphia, AR Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	25-FEB-14

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AQS ID	06-043-0003
CASTNET ID	YOS404
Site Name	Yosemite NP - Turtleback Dome
GPS Coordinates	37.713251, -119.706196
Street Address	Turtleback Dome, Yosemite Natl' Pk 95389
County	Mariposa
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-SEP-90
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	07-OCT-14

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AQS ID	06-069-0003
CASTNET ID	PIN414
Site Name	Pinnacles NM
GPS Coordinates	36.483235, -121.156876
Street Address	NE Entrance, Pinnacles NM
County	San Benito
Distance to Roadway	> 100 meters
CBSA Name	San Jose-Sunnyvale-Santa Clara, CA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Neighborhood
Reporting Agency	National Park Service
Start Date	01-APR-87
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	17-SEP-14

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AQS ID	06-071-9002
CASTNET ID	JOT403
Site Name	Joshua Tree NP
GPS Coordinates	34.069569, -116.388933
Street Address	Joshua Tree National Monument
County	San Bernardino
Distance to Roadway	> 100 meters
CBSA Name	Riverside-San Bernardino-Ontario, CA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Regional Scale
Reporting Agency	National Park Service
Start Date	01-OCT-93
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	06-MAY-14

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AQS ID	06-089-3003
CASTNET ID	LAV410
Site Name	Lassen Volcanic NP
GPS Coordinates	40.539991, -121.576462
Street Address	Manzanita Lake Rs, Lassen Volcanic NP
County	Shasta
Distance to Roadway	25 meters
CBSA Name	Redding, CA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Neighborhood
Reporting Agency	National Park Service
Start Date	01-NOV-87
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	10 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	31-MAY-14

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AQS ID	06-107-0009
CASTNET ID	SEK430
Site Name	Sequoia NP - Ash Mountain
GPS Coordinates	36.489469, -118.829153
Street Address	Sequoia & Kings Canyon NP
County	Tulare
Distance to Roadway	40 meters
CBSA Name	Visalia-Porterville, CA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-JUL-99
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	5 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	08-OCT-14

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AQS ID	08-051-9991
CASTNET ID	GTH161
Site Name	Gothic
GPS Coordinates	38.95627, -106.98587
Street Address	Gunnison National Forest, Crested Butte, Co 81224
County	Gunnison
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	21-AUG-14

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AQS ID	08-069-0007
CASTNET ID	ROM406
Site Name	Rocky Mtn NP
GPS Coordinates	40.278129, -105.545635
Street Address	Rocky Mountain National Park, Estes Park, Co 80517
County	Larimer
Distance to Roadway	> 100 meters
CBSA Name	Fort Collins-Loveland, CO Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Neighborhood
Reporting Agency	National Park Service
Start Date	01-AUG-87
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	7.5 m
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	31-OCT-14

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AQS ID	08-069-9991
CASTNET ID	ROM206
Site Name	Rocky Mtn NP Collocated
GPS Coordinates	40.278129, -105.545635
Street Address	Rocky Mountain National Park, Estes Park, Co 80517
County	Larimer
Distance to Roadway	> 100 meters
CBSA Name	Fort Collins-Loveland, CO Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA, NON-REGULATORY
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	7.5 m
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	16-AUG-14

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AQS ID	08-083-0101
CASTNET ID	MEV405
Site Name	Mesa Verde NP
GPS Coordinates	37.198398, -108.490462
Street Address	Mesa Verde National Park, Colorado
County	Montezuma
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Regional Scale
Reporting Agency	National Park Service
Start Date	01-MAY-93
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	05-MAY-14

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AQS ID	09-015-9991
CASTNET ID	ABT147
Site Name	Abington
GPS Coordinates	41.84046, -72.010368
Street Address	80 Ayers Rd, Abington, Ct 06230
County	Windham
Distance to Roadway	> 100 meters
CBSA Name	Willimantic, CT Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	14-NOV-14

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AQS ID	12-061-9991
CASTNET ID	IRL141
Site Name	Indian River Lagoon
GPS Coordinates	27.849215, -80.455595
Street Address	Sebastian Inlet State Recreation Area, Vero Beach, FL 32963
County	Indian River
Distance to Roadway	> 100 meters
CBSA Name	Sebastian-Vero Beach, FL Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	13-FEB-14

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AQS ID	12-077-9991
CASTNET ID	SUM156
Site Name	Sumatra
GPS Coordinates	30.110226, -84.99038
Street Address	Apalachicola National Forest, Bristol, FL 32321
County	Liberty
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	11-FEB-14

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AQS ID	13-231-9991
CASTNET ID	GAS153
Site Name	Georgia Station
GPS Coordinates	33.181173, -84.410054
Street Address	Georgia Station Georgia Agricultural Experiment Station, Williamson, Ga 30292
County	Pike
Distance to Roadway	> 100 meters
CBSA Name	Atlanta-Sandy Springs-Marietta, GA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	04-MAR-14

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AQS ID	17-019-1001
CASTNET ID	BVL130
Site Name	Bondville
GPS Coordinates	40.051981, -88.372495
Street Address	Twp Rd 500 E.
County	Champaign
Distance to Roadway	> 100 meters
CBSA Name	Champaign-Urbana, IL Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	20-SEP-14

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AQS ID	17-085-9991
CASTNET ID	STK138
Site Name	Stockton
GPS Coordinates	42.287216, -89.99995
Street Address	10952 E. Parker Rd, Stockton, IL 61085
County	Jo Daviess
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	21-JUL-14

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AQS ID	17-119-9991
CASTNET ID	ALH157
Site Name	Alhambra
GPS Coordinates	38.869001, -89.622815
Street Address	5403 State Road 160, Highland, IL 62249
County	Madison
Distance to Roadway	> 100 meters
CBSA Name	St. Louis, MO-IL Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	22-JUL-14

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AQS ID	18-083-9991
CASTNET ID	VIN140
Site Name	Vincennes
GPS Coordinates	38.740792, -87.484923
Street Address	Southwest Purdue Agricultural Center, Vincennes, In 47591
County	Knox
Distance to Roadway	> 100 meters
CBSA Name	Vincennes, IN Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	23-JUL-14

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AQS ID	18-169-9991
CASTNET ID	SAL133
Site Name	Salamonie Reservoir
GPS Coordinates	40.816038, -85.661407
Street Address	Hamilton Rd, Lagro, In 46941
County	Wabash
Distance to Roadway	> 100 meters
CBSA Name	Wabash, IN Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	19-JUL-14

Appendix A. Detailed Site Information (Page 26 of 79)

AQS ID	21-061-0501
CASTNET ID	MAC426
Site Name	Mammoth Cave NP
GPS Coordinates	37.131794, -86.142953
Street Address	Mammoth Cave NP - Alfred Cook Road
County	Edmonson
Distance to Roadway	> 100 meters
CBSA Name	Bowling Green, KY Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-AUG-97
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	16-OCT-14

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AQS ID	21-175-9991
CASTNET ID	CKT136
Site Name	Crockett
GPS Coordinates	37.92146, -83.066295
Street Address	State Highway 437, West Liberty, Ky 41472
County	Morgan
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	31-MAR-14

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AQS ID	21-221-9991
CASTNET ID	CDZ171
Site Name	Cadiz
GPS Coordinates	36.784053, -87.85015
Street Address	5720 Old Dover Rd, Cadiz, Ky 42211
County	Trigg
Distance to Roadway	> 100 meters
CBSA Name	Clarksville, TN-KY Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-MAR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	28-MAR-14

Appendix A. Detailed Site Information (Page 29 of 79)

AQS ID	21-229-9991
CASTNET ID	MCK131/231
Site Name	Mackville
GPS Coordinates	37.704678, -85.048706
Street Address	542 Wesley-Miller Rd, Harrodsburg, Ky 40330
County	Washington
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1/2
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration/Quality Assurance
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-MAR-11
Sampling Frequency	Continuous
Sampling Season	01/01 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	0 m
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N/Y
Frequency for 1 Pt QC	Daily
Last PE Date	30-MAR-14/30-MAR-14

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AQS ID	23-003-9991
CASTNET ID	ASH135
Site Name	Ashland
GPS Coordinates	46.603832, -68.413227
Street Address	45 Radar Rd, Ashland, Me 04732
County	Aroostook
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	20 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	07-OCT-14

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AQS ID	23-009-0103
CASTNET ID	ACA416
Site Name	Acadia NP
GPS Coordinates	44.377086, -68.2608
Street Address	Mcfarland Hill-Air Pollutant Research Site
County	Hancock
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Regional Transport & Upwind Background
Monitor Type	SLAMS & NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	Maine - Dept of Environmental Protection
Spatial Scale	Regional Scale
Reporting Agency	Maine - Dept of Environmental Protection
Start Date	09-FEB-98
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	25 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	04-DEC-14

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AQS ID	24-019-9991
CASTNET ID	BWR139
Site Name	Blackwater NWR
GPS Coordinates	38.444971, -76.111274
Street Address	Blackwater National Wildlife Refuge, Cambridge, Md 21613
County	Dorchester
Distance to Roadway	> 100 meters
CBSA Name	Cambridge, MD Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	13-NOV-14

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AQS ID	24-033-9991
CASTNET ID	BEL116
Site Name	Beltsville
GPS Coordinates	39.028177, -76.817127
Street Address	Powder Mill Rd, Laurel, Md 20708
County	Prince George's
Distance to Roadway	> 100 meters
CBSA Name	Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	10-NOV-14

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AQS ID	26-157-9991
CASTNET ID	UVL124
Site Name	Unionville
GPS Coordinates	43.613572, -83.359869
Street Address	1821 E. Dickerson Rd, Unionville, Mi 48767
County	Tuscola
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	26-AUG-14

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AQS ID	26-161-9991
CASTNET ID	ANA115
Site Name	Ann Arbor
GPS Coordinates	42.416636, -83.90218
Street Address	10070 Strawberry Lake Rd, Dexter, MI 48130
County	Washtenaw
Distance to Roadway	> 100 meters
CBSA Name	Ann Arbor, MI Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	24-SEP-14

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AQS ID	26-165-9991
CASTNET ID	HOX148
Site Name	Hoxeyville
GPS Coordinates	44.18089, -85.73898
Street Address	10637 S 9 Rd, Cadillac, Mi 49601
County	Wexford
Distance to Roadway	> 100 meters
CBSA Name	Cadillac, MI Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	25-AUG-14

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AQS ID	27-137-0034
CASTNET ID	VOY413
Site Name	Voyageurs NP
GPS Coordinates	48.412518, -92.829225
Street Address	Voyageurs National Park
County	St. Louis
Distance to Roadway	> 100 meters
CBSA Name	Duluth, MN-WI Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-JUL-96
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	08-SEP-14

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AQS ID	28-161-9991
CASTNET ID	CVL151
Site Name	Coffeeville
GPS Coordinates	34.002747, -89.799183
Street Address	Jamie L. Whitten Plant Materials Center, Coffeeville, Ms 38922
County	Yalobusha
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	17 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	28-FEB-14

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AQS ID	30-029-8001
CASTNET ID	GLR468
Site Name	Glacier NP
GPS Coordinates	48.510301, -113.996807
Street Address	Glacier National Park
County	Flathead
Distance to Roadway	> 100 meters
CBSA Name	Kalispell, MT Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-APR-89
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	23-AUG-14

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AQS ID	31-107-9991
CASTNET ID	SAN189
Site Name	Santee Sioux
GPS Coordinates	42.829154, -97.854128
Street Address	State Spur 54d, Niobrara, Ne 68760
County	Knox
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	02-JUN-14

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AQS ID	32-033-0101
CASTNET ID	GRB411
Site Name	Great Basin NP
GPS Coordinates	39.005121, -114.215932
Street Address	Great Basin National Park
County	White Pine
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Regional Scale
Reporting Agency	National Park Service
Start Date	01-SEP-93
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	10 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	27-MAY-14

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AQS ID	33-009-9991
CASTNET ID	WST109
Site Name	Woodstock
GPS Coordinates	43.944519, -71.700787
Street Address	Hubbard Brook Experimental Forest, North Woodstock, Nh 03262
County	Grafton
Distance to Roadway	50 meters
CBSA Name	Lebanon, NH-VT Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	10 - 30 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	11-NOV-14

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AQS ID	34-021-9991
CASTNET ID	WSP144
Site Name	Wash. Crossing
GPS Coordinates	40.312303, -74.872663
Street Address	Washington Crossing State Park, Titusville, NJ 08560
County	Mercer
Distance to Roadway	> 100 meters
CBSA Name	Trenton-Ewing, NJ Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	14-NOV-14

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AQS ID	36-031-9991
CASTNET ID	HWF187
Site Name	Huntington Wildlife Forest
GPS Coordinates	43.973044, -74.223317
Street Address	Huntington Wildlife Forest, Newcomb, Ny 12852
County	Essex
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	20 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	01-OCT-14

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AQS ID	36-109-9991
CASTNET ID	CTH110
Site Name	Connecticut Hill
GPS Coordinates	42.400875, -76.653516
Street Address	Connecticut Hill Wildlife Management Area, Newfield, Ny 14867
County	Tompkins
Distance to Roadway	> 100 meters
CBSA Name	Ithaca, NY Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	30 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	05-SEP-14

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AQS ID	37-011-9991
CASTNET ID	PNF126
Site Name	Cranberry
GPS Coordinates	36.105435, -82.045015
Street Address	Pisgah National Forest, Newland, Nc 28657
County	Avery
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	30-OCT-14

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AQS ID	37-031-9991
CASTNET ID	BFT142
Site Name	Beaufort
GPS Coordinates	34.884668, -76.620666
Street Address	Open Grounds Farm, Beaufort, Nc 28516
County	Carteret
Distance to Roadway	> 100 meters
CBSA Name	Morehead City, NC Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	25-NOV-14

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AQS ID	37-113-9991
CASTNET ID	COW137
Site Name	Coweeta
GPS Coordinates	35.060527, -83.43034
Street Address	USDA Southern Research Station, Coweeta Hydrologic Laboratory, Otto, Nc 28763
County	Macon
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	26-MAR-14

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AQS ID	37-123-9991
CASTNET ID	CND125
Site Name	Candor
GPS Coordinates	35.26333, -79.83754
Street Address	136 Perry Dr, Candor, Nc 27229
County	Montgomery
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	24-NOV-14

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AQS ID	38-007-0002
CASTNET ID	THR422
Site Name	Theodore Roosevelt NP
GPS Coordinates	46.894844, -103.377719
Street Address	13881 I94 East
County	Billings
Distance to Roadway	> 100 meters
CBSA Name	Dickinson, ND Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	SLAMS
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	North Dakota - Dept of Health
Spatial Scale	Regional Scale
Reporting Agency	North Dakota - Dept of Health
Start Date	27-JUL-98
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	12.2 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	11-DEC-14

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AQS ID	39-017-9991
CASTNET ID	OXF122
Site Name	Oxford
GPS Coordinates	39.531115, -84.723547
Street Address	Ecology Research Center, Miami University, Oxford, Ohio 45056
County	Butler
Distance to Roadway	> 100 meters
CBSA Name	Cincinnati-Middletown, OH-KY-IN Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	09-APR-14

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AQS ID	39-047-9991
CASTNET ID	DCP114
Site Name	Deer Creek
GPS Coordinates	39.635888, -83.260563
Street Address	Deer Creek State Park, Mt Sterling, Oh 43143
County	Fayette
Distance to Roadway	> 100 meters
CBSA Name	Washington Court House, OH Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	15 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	09-APR-14

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AQS ID	39-121-9991
CASTNET ID	QAK172
Site Name	Quaker City
GPS Coordinates	39.942714, -81.337914
Street Address	58163 St. Johns Rd, Quaker City, Oh 43773
County	Noble
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	08-APR-14

Appendix A. Detailed Site Information (Page 54 of 79)

AQS ID	40-001-9009
CASTNET ID	CHE185
Site Name	Cherokee Nation
GPS Coordinates	35.750786, -94.669789
Street Address	South Highway 59, Rr1, 1795 Dahlenegah Park Road, Stilwell, Oklahoma
County	Adair
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Regional Transport & General/Background
Monitor Type	TRIBAL & EPA
Instrument	Teledyne ML9811
Method Code	091
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUL-02
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	02-SEP-14

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AQS ID	42-001-9991
CASTNET ID	ARE128
Site Name	Arendtsville
GPS Coordinates	39.923241, -77.307863
Street Address	747 Winding Rd, Biglerville, Pa 17307
County	Adams
Distance to Roadway	> 100 meters
CBSA Name	Gettysburg, PA Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	25-SEP-14

Appendix A. Detailed Site Information (Page 56 of 79)

AQS ID	42-027-9991
CASTNET ID	PSU106
Site Name	Penn State
GPS Coordinates	40.720902, -77.931759
Street Address	1366 Tadpole Rd, Pennsylvania Furnace, Pa 16865
County	Centre
Distance to Roadway	> 100 meters
CBSA Name	State College, PA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	24-SEP-14

Appendix A. Detailed Site Information (Page 57 of 79)

AQS ID	42-047-9991
CASTNET ID	KEF112
Site Name	Kane Exp. Forest
GPS Coordinates	41.598119, -78.767866
Street Address	Kane Experimental Forest, Allegheny National Forest, Wilcox, Pa 15870
County	Elk
Distance to Roadway	> 100 meters
CBSA Name	St. Marys, PA Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	20 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	23-SEP-14

Appendix A. Detailed Site Information (Page 58 of 79)

AQS ID	42-085-9991
CASTNET ID	MKG113
Site Name	M.K. Goddard
GPS Coordinates	41.426847, -80.145247
Street Address	Maurice K Goddard State Park, Sandy Lake, Pa 16145
County	Mercer
Distance to Roadway	60 meters
CBSA Name	Youngstown-Warren-Boardman, OH-PA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	10 - 30 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	20-SEP-14

Appendix A. Detailed Site Information (Page 59 of 79)

AQS ID	42-111-9991
CASTNET ID	LRL117
Site Name	Laurel Hill
GPS Coordinates	39.988309, -79.251573
Street Address	Laurel Hill State Park, Rockwood, Pa 15557
County	Somerset
Distance to Roadway	> 100 meters
CBSA Name	Somerset, PA Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	19-SEP-14

Appendix A. Detailed Site Information (Page 60 of 79)

AQS ID	46-033-0132
CASTNET ID	WNC429
Site Name	Wind Cave NP
GPS Coordinates	43.557639, -103.483856
Street Address	Wind Cave National Park, South Dakota
County	Custer
Distance to Roadway	> 100 meters
Pollutant	Ozone, 3
Parameter Code	44201
NAAQS Monitoring Objective	Regional Transport & General/Background
Monitor Type	SLAMS
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	South Dakota - Dept of Environment and Natural Resources
Spatial Scale	Regional Scale
Reporting Agency	South Dakota - Dept of Environment and Natural Resources
Start Date	01-JAN-05
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	3.35 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Glass
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	11-DEC-14

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AQS ID	47-009-0101
CASTNET ID	GRS420
Site Name	Great Smoky NP - Look Rock
GPS Coordinates	35.633482, -83.941606
Street Address	Great Smoky Mountains NP Look Rock
County	Blount
Distance to Roadway	> 100 meters
CBSA Name	Knoxville, TN Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	SLAMS & NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Neighborhood
Reporting Agency	National Park Service
Start Date	01-JUL-88
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	27-OCT-14

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AQS ID	47-025-9991
CASTNET ID	SPD111
Site Name	Speedwell
GPS Coordinates	36.46983, -83.826511
Street Address	718 Russell Hill Rd, Speedwell, Tn 37870
County	Claiborne
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-MAR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	31-MAR-14

Appendix A. Detailed Site Information (Page 63 of 79)

AQS ID	47-041-9991
CASTNET ID	ESP127
Site Name	Edgar Evins
GPS Coordinates	36.03893, -85.73305
Street Address	Edgar Evans State Park, Smithville, Tn 37166
County	DeKalb
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-MAR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	27-MAR-14

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AQS ID	48-043-0101
CASTNET ID	BBE401
Site Name	Big Bend NP
GPS Coordinates	29.302651, -103.177813
Street Address	Big Bend National Park, Texas
County	Brewster
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Regional Scale
Reporting Agency	National Park Service
Start Date	01-OCT-90
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	20-MAR-14

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AQS ID	48-373-9991
CASTNET ID	ALC188
Site Name	Alabama-Coushatta
GPS Coordinates	30.701577, -94.674011
Street Address	361 Tombigbee Rd, Livingston, Tx 77351
County	Polk
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	12-MAR-14

Appendix A. Detailed Site Information (Page 66 of 79)

AQS ID	48-381-9991
CASTNET ID	PAL190
Site Name	Palo Duro
GPS Coordinates	34.88061, -101.664703
Street Address	Palo Duro Canyon State Park, Canyon, Tx 79015
County	Randall
Distance to Roadway	> 100 meters
CBSA Name	Amarillo, TX Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	25-MAR-14

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AQS ID	49-037-0101
CASTNET ID	CAN407
Site Name	Canyonlands NP
GPS Coordinates	38.458323, -109.82126
Street Address	Canyonlands National Park, Utah
County	San Juan
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Regional Scale
Reporting Agency	National Park Service
Start Date	01-SEP-92
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	06-MAY-14

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AQS ID	49-047-1002
CASTNET ID	DIN431
Site Name	Dinosaur NM
GPS Coordinates	40.4373, -109.3046
Street Address	Dinosaur National Monument
County	Uintah
Distance to Roadway	> 100 meters
CBSA Name	Vernal, UT Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-JAN-12
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	15-JUL-14

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AQS ID	51-071-9991
CASTNET ID	VPI120
Site Name	Horton Station
GPS Coordinates	37.329832, -80.55751
Street Address	1856 Horton Ln, Newport, Va 24128
County	Giles
Distance to Roadway	> 100 meters
CBSA Name	Blacksburg-Christiansburg-Radford, VA Metropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	17-NOV-14

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AQS ID	51-113-0003
CASTNET ID	SHN418
Site Name	Shenandoah NP - Big Meadows
GPS Coordinates	38.5231, -78.43471
Street Address	Shenandoah NP Big Meadows
County	Madison
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Population Exposure
Monitor Type	SLAMS & 192842
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Spatial Scale	Neighborhood
Reporting Agency	National Park Service
Start Date	01-JUL-85
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	18-NOV-14

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AQS ID	51-147-9991
CASTNET ID	PED108
Site Name	Prince Edward
GPS Coordinates	37.165222, -78.307067
Street Address	Prince Edward-Gallion State Forest, Burkeville, Va 23922
County	Prince Edward
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JAN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	18-NOV-14

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AQS ID	54-021-9991
CASTNET ID	CDR119
Site Name	Cedar Creek
GPS Coordinates	38.879503, -80.847677
Street Address	Cedar Creek State Park, Cedarville, Wv 26611
County	Gilmer
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	21-NOV-14

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AQS ID	54-093-9991
CASTNET ID	PAR107
Site Name	Parsons
GPS Coordinates	39.090434, -79.661742
Street Address	USDA Northern Research Station, Monongahela National Forest, Parsons, Wv 26287
County	Tucker
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	19-NOV-14

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AQS ID	55-119-9991
CASTNET ID	PRK134
Site Name	Perkinstown
GPS Coordinates	45.206525, -90.597209
Street Address	W 10746 County Highway M, Medford, WI 54451
County	Taylor
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-APR-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	10-SEP-14

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AQS ID	56-001-9991
CASTNET ID	CNT169
Site Name	Centennial
GPS Coordinates	41.364531, -106.24002
Street Address	Roosevelt National Forest, Centennial, Wy 82055
County	Albany
Distance to Roadway	> 100 meters
CBSA Name	Laramie, WY Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	23-AUG-14

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AQS ID	56-003-0002
CASTNET ID	BAS601
Site Name	Basin
GPS Coordinates	44.28, -108.0411
Street Address	Basin (WARMS Station)
County	Big Horn
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	Bureau of Land Management - Wyoming office
Reporting Agency	Bureau of Land Management - Wyoming office
Start Date	28-NOV-12
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	17-JUL-14

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AQS ID	56-035-9991
CASTNET ID	PND165
Site Name	Pinedale
GPS Coordinates	42.929031, -109.787796
Street Address	Skyline Dr, Pinedale, Wy 82941
County	Sublette
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	Highest Concentration
Monitor Type	EPA
Instrument	Thermo 49i
Method Code	047
FRM or FEM	FEM
Collecting Agency	EPA/CAMD
Spatial Scale	Regional Scale
Reporting Agency	EPA/CAMD
Start Date	01-JUN-11
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	16-JUL-14

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AQS ID	56-039-1011
CASTNET ID	YEL408
Site Name	Yellowstone NP
GPS Coordinates	44.565356, -110.400338
Street Address	Yellowstone National Park
County	Teton
Distance to Roadway	> 100 meters
CBSA Name	Jackson, WY-ID Micropolitan Statistical Area
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49C
Method Code	047
FRM or FEM	FEM
Collecting Agency	National Park Service
Reporting Agency	National Park Service
Start Date	01-JUL-96
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	15 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	24-AUG-14

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AQS ID	56-045-0003
CASTNET ID	NEC602
Site Name	Newcastle
GPS Coordinates	43.873, -104.1919
Street Address	Newcastle, Warms Station
County	Weston
Distance to Roadway	> 100 meters
Pollutant	Ozone, 1
Parameter Code	44201
NAAQS Monitoring Objective	General/Background
Monitor Type	NON-EPA FEDERAL
Instrument	Thermo 49I
Method Code	047
FRM or FEM	FEM
Collecting Agency	Bureau of Land Management - Wyoming office
Reporting Agency	Bureau of Land Management - Wyoming office
Start Date	14-NOV-12
Sampling Frequency	Continuous
Sampling Season	01/01 - 12/31
Probe Height	10 meters
Distance to Trees	> 50 meters
Distance Between Collocated	N/A
Wind Obstruction	360 degrees
Probe Material	Teflon ^(R)
Changes w/in 18 months	N
Frequency for 1 Pt QC	Daily
Last PE Date	22-JUL-14

Appendix B. Ozone Validation Template¹

1) Requirement (O ₃)	2) Frequency	3) Acceptance Criteria	4) Information /Action ²
CRITICAL CRITERIA-OZONE			
One Point QC Check Single analyzer	1/ 2 weeks	$\leq +7\%$ (percent difference)	1 and 2) 40 CFR Part 58 App A Sec 3.2.3) Recommendation based on DQO in 40 CFR Part 58 App A Sec 2.3.1.2. QC Check Conc range 0.01 - 0.10 ppm, relative to routine concentrations
Zero/span check	1/ 2 weeks	Zero drift $\leq + 1.5$ ppb Span drift $< + 7 \%$	1 and 2) QA Handbook Volume 2 Section 12.3.3) Recommendation and related to DQO
OPERATIONAL CRITERIA - OZONE			
Shelter Temperature Range	Daily (hourly values)	20 to 30° C. (Hourly avg) or per manufacturers specifications if designated to a wider temperature range	1, 2 and 3) QA Handbook Volume 2 Section 7.2.2 Generally the 20-30 o C range will apply but the most restrictive operable range of the instruments in the shelter may also be used as guidance. FRM/FEM list found on AMTIC provides temperature range for given instrument. FRM/FEM monitor testing is required at 20-30° C range per 40 CFR Part 53.32
Shelter Temperature Control	Daily (hourly values)	$\leq + 2^{\circ}$ C SD over 24 hours	1, 2 and 3) QA Handbook Volume 2 Section 7.2.2
Shelter Temperature Device Check	1/6 mo	$\pm 2^{\circ}$ C of standard	1, 2 and 3) QA Handbook Volume 2 Section 7.2.2
Annual Performance Evaluation Single analyzer	Every site 1/year within period of monitor operation, 25 % of sites quarterly	Percent difference of audit levels 3-10 $\leq +15\%$ Audit levels 1&2 ± 1.5 ppb difference or 15%	1 and 2) 40 CFR Part 58 App A sec 3.2.2.3) Recommendation- 3 audit concentrations not including zero. AMTIC guidance 2/17/2011 http://www.epa.gov/ttn/amtic/cpreldoc.html
Federal Audits (NPAP)	1/year at selected sites 20% of sites audited	Audit levels 1&2 ± 1.5 ppb difference all other levels percent difference + 10%	1) 40 CFR Part 58 App A sec 2.4.2) NPAP adequacy requirements on AMTIC 3) NPAP QAPP/SOP
Verification/Calibration	Upon receipt/adjustment/repair/installation/moving and repair and recalibration of standard of higher level 1/6 months if manual zero/span performed biweekly 1/year if continuous zero/span performed daily	All points within + 2 % of calibration range of best-fit straight line Linearity error <5%	1) 40 CFR Part 50 App D 2) Recommendation 3) Recommendation- Linearity error 40 CFR Part 50 App D Multi-point calibration (0 and 4 upscale points) 40 CFR Part 50 App D sec 5.2.3
Zero Air/Zero Air Check	1/year	Concentrations below LDL	1) 40 CFR Part 50 App D Section 4.1.2 and 3) Recommendation
Ozone Level 2 Standard			
Certification/recertification to Standard Reference Photometer (Level 1)	1/year	single point difference $< + 3\%$	1) 40 CFR Part 50 App D Section 5.4.2 and 3) Transfer Standard Guidance EPA-454/B-10-001 Level 2 standard (formerly called primary standard) usually transported to EPA Regions SRP for comparison
Level 2 and Greater Transfer Standard Precision	1/year	Standard Deviation less than 0.005 ppm or 3% whichever is greater	1) 40 CFR Part 50 Appendix D Sec 3.1.2) Recommendation, part of reverification 3) 40 CFR Part 50 Appendix D Sec 3.1

Appendix B. Ozone Validation Template¹ (continued)

(if recertified via a transfer standard)	1/year	Regression slopes = 1.00 ± 0.03 and two intercepts are $0 + 3$ ppb	1, 2 and 3) Transfer Standard Guidance EPA-545/B-10-001
Ozone Transfer standard (Level 3 and greater)			
Qualification	Upon receipt of transfer standard	$\pm 4\%$ or ± 4 ppb (whichever greater)	1, 2 and 3) Transfer Standard Guidance EPA-545/B-10-001
Certification	After qualification and upon receipt/adjustment/repair	RSD of six slopes $\leq 3.7\%$ Std. Dev. of 6 intercepts 1.5	1, 2 and 3) Transfer Standard Guidance EPA-545/B-10-001
Recertification to higher level standard	Beginning and end of O ₃ season or 1/6 months whichever less	New slope = ± 0.05 of previous and RSD of six slopes $< 3.7\%$ Std. Dev. of 6 intercepts 1.5	1, 2 and 3) Transfer Standard Guidance EPA-545/B-10-001 recertification test that then gets added to most recent 5 tests. If does not meet acceptability certification fails
Detection (FEM/FRMs)			
Noise	Upon receipt/adjustment/repair/installation/moving and repair and recalibration or 1/year	≤ 0.005 ppm	1) 40 CFR Part 53.23 (b) (definition & procedure) 2) NA 3) 40 CFR Part 53.20 Table B-1
Lower detectable level	1/year	0.01 ppm	1) 40 CFR Part 53.23 (b) (definition & procedure) 2) Recommendation 3) 40 CFR Part 53.20 Table B-1
SYSTEMATIC CRITERIA - OZONE			
Sampler/Monitor/Transfer and Calibration Standard	NA	Meets requirements listed in FRM/FEM designation	1) 40 CFR Part 58 App C Section 2.1 2) NA 3) 40 CFR Part 53 & FRM/FEM method list
Standard Reporting	All data	ppm (final units in AQS)	1, 2 and 3) 40 CFR Part 50 App I sec 2.1.1
Rounding convention for data reported to	All data	3 places after decimal with digits to right	1, 2 and 3) 40 CFR Part 50 App I sec 2.1.1
Completeness (seasonal)	3-Year Comparison	$> 90\%$ (avg) daily max available in ozone season with min of 75% in any one year.	1) 40 CFR Part 50 App I 2) 40 CFR Part 50 App I Section 2.3 3) 40 CFR Part 50 App I Section 2..3 (b)
	8- hour average	$\geq 75\%$ of hourly averages for the 8-hour	1) 40 CFR Part 50 App I 2 and 3) 40 CFR Part 50 App I Section 2.1.1
	Valid Daily Max	$> 75\%$ of the 24, 8 hour averages (18 of 24 8- hour averages)	1) 40 CFR Part 50 App I 2) 40 CFR Part 50 App I Section 2.1.2 3) 40 CFR Part 50 App I Section 2.1.2 (b)
Sample Residence Time Verification	1/year	< 20 seconds	1) 40 CFR Part 58 App E, section 9 (c) 2) Recommendation 3) 40 CFR Part 58 App E, section 9 (c)
Sample Probe, Inlet, Sampling train	All sites	Borosilicate glass (e.g., Pyrex [®]) or Teflon ^(R) [®]	1) 40 CFR Part 58 App E, section sec 9 (a) 2) Recommendation 3) 40 CFR Part 58 App E, section sec 9 (a) FEP and PFA have been accepted as a equivalent material to Teflon ^(R) . Replacement or cleaning is suggested as 1/year and more frequent if pollutant load or contamination dictate
Siting	1/year	Meets siting criteria or waiver documented	1) 40 CFR Part 58 App E, sections 2-6 2) Recommendation 3) 40 CFR Part 58 App E, sections 2-6

Appendix B. Ozone Validation Template¹ (continued)

EPA Standard Ozone Reference Photometer (SRP) Recertification (Level 1)	1/year	Regression slope = 1.00 ± 0.01 and intercept < 3 ppb	1,2 and 3) Transfer Standard Guidance EPA-454/B-10-001 This is usually at a Regional Office and is compared against the traveling SRP
Precision(using 1-point QC checks)	Calculated annually and as appropriate for design value estimates	90% CL $CV \leq 7\%$	1) 40 CFR Part 58 App A 2.3.1.2 & 3.2.1 2) 40 CFR Part 58 App A sec 4 (b) 3) 40 CFR Part 58 App A sec 4.1.2
Bias (using 1-point QC checks)	Calculated annually and as appropriate for design value estimates	95% CL $\leq \pm 7\%$	1) 40 CFR Part 58 App A 2.3.1.2 & 3.2.1 2) 40 CFR Part 58 App A sec 4 (b) 3) 40 CFR Part 58 App A sec 4.1.3
Annual PE Primary QA Organization (PQAO) Evaluation	1/year	95% of audit percent differences fall within the one point QC check 95% probability intervals at PQAO level of aggregation	1) 40 CFR Part 58 App A Section 3.2.2 2) Recommendation 3) 40 CFR Part 58 App A sec 4.1.4 & 4.1.5

¹ Table reproduced from OAQPS' *Quality Assurance Handbook for Air Pollution Measurement Systems. Volume II Ambient Air Quality Monitoring Program EPA-454/B-13-003 May, 2013. Appendix D. Revision No. 0.*
<http://www.epa.gov/ttnamti1/files/ambient/pm25/qa/QA-Handbook-Vol-II.pdf>

² Match numbered details within the 4) Information/Action column with columns (1) Requirement (O₃), (2) Frequency, and (3) Acceptance Criteria.

Appendix C. Ozone Season by State¹

State	Begin month	End month
Alabama	March	October
Alaska	April	October
Arizona	January	December
Arkansas	March	November
California	January	December
Colorado	March	September
Connecticut	April	September
Delaware	April	October
District of Columbia	April	October
Florida	March	October
Georgia	March	October
Hawaii	January	December
Idaho	May	September
Illinois	April	October
Indiana	April	September
Iowa	April	October
Kansas	April	October
Kentucky	March	October
Louisiana AQCR ² 019,022	March	October
Louisiana AQCR 106	January	December
Maine	April	September
Maryland	April	October
Massachusetts	April	September
Michigan	April	September
Minnesota	April	October
Mississippi	March	October
Missouri	April	October
Montana	June	September
Nebraska	April	October
Nevada	January	December
New Hampshire	April	September
New Jersey	April	October
New Mexico	January	December
New York	April	October
North Carolina	April	October
North Dakota	May	September
Ohio	April	October
Oklahoma	March	November
Oregon	May	September
Pennsylvania	April	October
Puerto Rico	January	December
Rhode Island	April	September
South Carolina	April	October
South Dakota	June	September
Tennessee	March	October
Texas AQCR 106,153, 213, 214, 216	January	December
Texas AQCR 022, 210, 211, 212, 215, 217, 218	March	October
Utah	May	September
Vermont	April	September

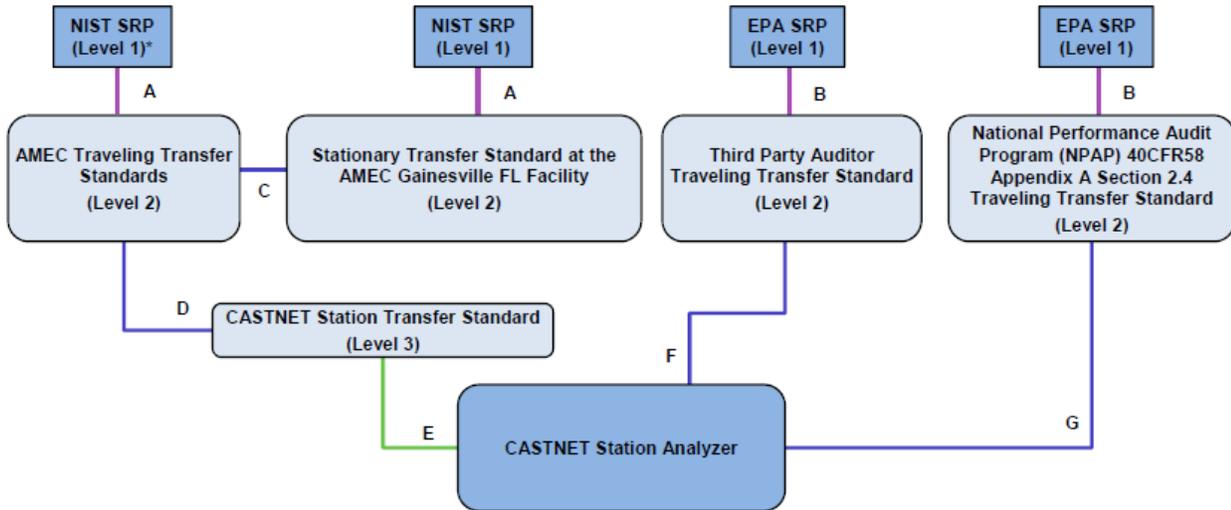
Appendix C. Ozone Season by State¹ (continued)

State	Begin month	End month
Virginia	April	October
Washington	May	September
West Virginia	April	October
Wisconsin	April 15	October 15
Wyoming	April	October
American Samoa	January	December
Guam	January	December
Virgin Islands	January	December

¹ Ozone season by State from 40 CFR Part 58, App D, Table D-3.

² Air Quality Control Region (AQCR) as delineated in 40 CFR Part 81, Subpart B.

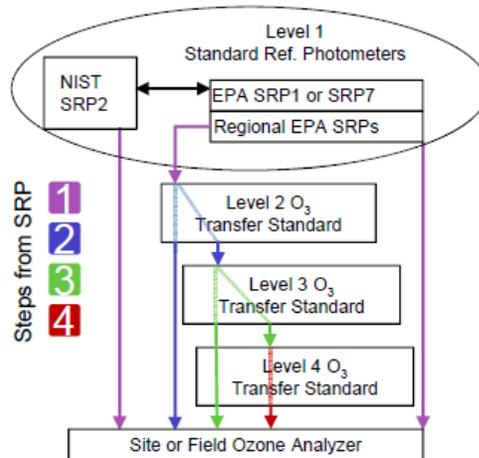
Appendix D. CASTNET QAPP Ozone Certification Flowchart



Legend

- A = Annual Reverification
- B = Quarterly Reverification
- C = Audited ~1/6 weeks
- D = Reverification 1/6 months
- E = Zero, Span and single Point QC check daily
- F = Audited Annually
- G = Audited 1/5 years

***Traceability**



Appendix E. EPA Regional Office Contacts Information

EPA Region	Name	Phone	Email
Region 1	Judge, Robert	617-918-8387	judge.robert@epa.gov
Region 2	Ruvo, Richard A.; Mustafa, Mustafa	212-637-4014; 732-906-6881	ruvo.richard@epa.gov; mustafa.mustafa@epa.gov
Region 3	Hyden, Loretta	215-814-2113	hyden.loretta@epa.gov
Region 4	Rinck, Todd; Garver, Daniel	404-562-9062; 404-562-9839	rinck.todd@epa.gov; garver.daniel@epa.gov
Region 5	McGrath, Jesse	312-886-1532	mcgrath.jesse@epa.gov
Region 6	Sather, Mark	214-665-8353	sather.mark@epa.gov
Region 7	Nichols, Robert; Grooms, Leland	913-551-5266; 913-551-5010	nichols.robert@epa.gov; grooms.leland@epa.gov
Region 8	Payton, Richard; Rickard, Joshua	303-312-6439; 303-312-6460	payton.richard@epa.gov; rickard.joshua@epa.gov
Region 9	Biland, Larry; Felix, Elfego	415-947-4132; 415-947-4141	biland.larry@epa.gov; felix.elfego@epa.gov
Region 10	Hall, Christopher	206-553-0521	hall.christopher@epa.gov

Appendix F. Outline for TSA Report

1. Executive Summary
2. Introduction
3. General Program and Quality Management (Audit of EPA contractor's office and NPS contractor's office)
 - a. Complete General/Quality Management Forms
 - b. Findings, Discussions, Recommendations
4. Network Management
 - a. Complete Network Management, Field Support, Instrument Certification/Testing, Standards and Calibrations, and Instrument Repair Forms
 - b. Table listing the site locations, number of monitors at each location, type of monitor (SLAMS, SPM, etc...), what is measured
 - c. Findings, Discussions, Recommendations
5. Field Operations
 - a. Complete Field Overview Forms
 - b. Table that list site name, AQS ID, and pollutants monitored
 - c. Findings, Discussions, Recommendations
6. Laboratory Operations
 - a. Complete Laboratory Operations Forms
 - b. Findings, Discussions, Recommendations
7. Data and Data Management
 - a. Complete Data and Data Management Forms
 - b. Findings, Discussions, Recommendations
8. Quality Control and Quality Assurance

Appendix G. Current list of 40 CFR Part 58 Compliant CASTNET Ozone Monitoring Sites

EPA RGN	ST	AQS_ID	POC	SITE_ID	AGY	PQAO ¹	COUNTY	NOTES	'11 ²	'12	'13	'14	'15
1	CT	090159991	1	ABT147	EPA	EPA	Windham		Y	Y	Y	Y	Y
1	ME	230039991	1	ASH135	EPA	EPA	Aroostook		Y	Y	Y	Y	Y
1	ME	230090103	1	ACA416	NPS	ME	Hancock		Y	Y	Y	Y	Y
1	ME	230199991	1	HOW132	EPA	EPA	Penobscot	Discontinued 10/2012	Y	Y			
1	NH	330099991	1	WST109	EPA	EPA	Grafton		Y	Y	Y	Y	Y
2	NJ	340219991	1	WSP144	EPA	EPA	Mercer		Y	Y	Y	Y	Y
2	NY	360319991	1	HWF187	EPA	EPA	Essex		Y	Y	Y	Y	Y
2	NY	361099991	1	CTH110	EPA	EPA	Tompkins		Y	Y	Y	Y	Y
3	MD	240199991	1	BWR139	EPA	EPA	Dorchester		Y	Y	Y	Y	Y
3	MD	240339991	1	BEL116	EPA	EPA	Prince George's		Y	Y	Y	Y	Y
3	PA	420019991	1	ARE128	EPA	EPA	Adams		Y	Y	Y	Y	Y
3	PA	420279991	1	PSU106	EPA	EPA	Centre		Y	Y	Y	Y	Y
3	PA	420479991	1	KEF112	EPA	EPA	Elk		Y	Y	Y	Y	Y
3	PA	420859991	1	MKG113	EPA	EPA	Mercer		Y	Y	Y	Y	Y
3	PA	421119991	1	LRL117	EPA	EPA	Somerset		Y	Y	Y	Y	Y
3	VA	510719991	1	VPI120	EPA	EPA	Giles		Y	Y	Y	Y	Y
3	VA	511130003	1	SHN418	NPS	NPS	Madison		Y	Y	Y	Y	Y
3	VA	511479991	1	PED108	EPA	EPA	Prince Edward		Y	Y	Y	Y	Y
3	WV	540219991	1	CDR119	EPA	EPA	Gilmer		Y	Y	Y	Y	Y
3	WV	540939991	1	PAR107	EPA	EPA	Tucker		Y	Y	Y	Y	Y
4	AL	010499991	1	SND152	EPA	EPA	DeKalb		Y	Y	Y	Y	Y
4	FL	120619991	1	IRL141	EPA	EPA	Indian River		Y	Y	Y	Y	Y
4	FL	120779991	1	SUM156	EPA	EPA	Liberty		Y	Y	Y	Y	Y
4	GA	132319991	1	GAS153	EPA	EPA	Pike		Y	Y	Y	Y	Y
4	KY	210610501	1	MAC426	NPS	NPS	Edmonson		Y	Y	Y	Y	Y
4	KY	211759991	1	CKT136	EPA	EPA	Morgan		Y	Y	Y	Y	Y
4	KY	212219991	1	CDZ171	EPA	EPA	Trigg		Y	Y	Y	Y	Y
4	KY	212299991	1	MCK131	EPA	EPA	Washington		Y	Y	Y	Y	Y
4	KY	212299991	2	MCK231	EPA	EPA	Washington	QA only beginning 1/1/2015 ³	Y	Y	Y	Y	
4	MS	281619991	1	CVL151	EPA	EPA	Yalobusha		Y	Y	Y	Y	Y
4	NC	370119991	1	PNF126	EPA	EPA	Avery		Y	Y	Y	Y	Y
4	NC	370319991	1	BFT142	EPA	EPA	Carteret		Y	Y	Y	Y	Y
4	NC	371139991	1	COW137	EPA	EPA	Macon		Y	Y	Y	Y	Y
4	NC	371239991	1	CND125	EPA	EPA	Montgomery		Y	Y	Y	Y	Y
4	TN	470090101	1	GRS420	NPS	NPS	Blount		Y	Y	Y	Y	Y

Appendix G. Current list of 40 CFR Part 58 Compliant CASTNET Ozone Monitoring Sites (continued)

EPA RGN	ST	AQS_ID	POC	SITE_ID	AGY	PQAO ¹	COUNTY	NOTES	'11 ²	'12	'13	'14	'15
4	TN	470259991	1	SPD111	EPA	EPA	Claiborne		Y	Y	Y	Y	Y
4	TN	470419991	1	ESP127	EPA	EPA	DeKalb		Y	Y	Y	Y	Y
5	IL	170191001	1	BVL130	EPA	EPA	Champaign		Y	Y	Y	Y	Y
5	IL	170859991	1	STK138	EPA	EPA	Jo Daviess		Y	Y	Y	Y	Y
5	IL	171199991	1	ALH157	EPA	EPA	Madison		Y	Y	Y	Y	Y
5	IN	180839991	1	VIN140	EPA	EPA	Knox		Y	Y	Y	Y	Y
5	IN	181699991	1	SAL133	EPA	EPA	Wabash		Y	Y	Y	Y	Y
5	MI	261579991	1	UVL124	EPA	EPA	Tuscola		Y	Y	Y	Y	Y
5	MI	261619991	1	ANA115	EPA	EPA	Washtenaw		Y	Y	Y	Y	Y
5	MI	261659991	1	HOX148	EPA	EPA	Wexford		Y	Y	Y	Y	Y
5	MN	271370034	1	VOY413	NPS	NPS	St. Louis		Y	Y	Y	Y	Y
5	OH	390179991	1	OXF122	EPA	EPA	Butler		Y	Y	Y	Y	Y
5	OH	390479991	1	DCP114	EPA	EPA	Fayette		Y	Y	Y	Y	Y
5	OH	391219991	1	QAK172	EPA	EPA	Noble		Y	Y	Y	Y	Y
5	WI	551199991	1	PRK134	EPA	EPA	Taylor		Y	Y	Y	Y	Y
6	AR	050199991	1	CAD150	EPA	EPA	Clark		Y	Y	Y	Y	Y
6	OK	400019009	1	CHE185	EPA	CN	Adair		Y	Y	Y	Y	Y
6	TX	480430101	1	BBE401	NPS	NPS	Brewster		Y	Y	Y	Y	Y
6	TX	483739991	1	ALC188	EPA	EPA	Polk			Y	Y	Y	Y
6	TX	483819991	1	PAL190	EPA	EPA	Randall			Y	Y	Y	Y
7	KS	201619991	1	KNZ184	EPA	EPA	Riley	Discontinued 4/2013	Y	Y			
7	NE	311079991	1	SAN189	EPA	EPA	Knox		Y	Y	Y	Y	Y
8	CO	080519991	1	GTH161	EPA	EPA	Gunnison		Y	Y	Y	Y	Y
8	CO	080699991	1	ROM206	EPA	EPA	Larimer	QA only beginning 10/2012	Y	Y			
8	CO	080690007	1	ROM406	NPS	NPS	Larimer		Y	Y	Y	Y	Y
8	CO	080830101	1	MEV405	NPS	NPS	Montezuma		Y	Y	Y	Y	Y
8	MT	300298001	1	GLR468	NPS	NPS	Flathead		Y	Y	Y	Y	Y
8	ND	380070002	1	THR422	NPS	ND	Billings		Y	Y	Y	Y	Y
8	SD	460330132	3	WNC429	NPS	SD	Custer		Y	Y	Y	Y	Y
8	UT	490370101	1	CAN407	NPS	NPS	San Juan		Y	Y	Y	Y	Y
8	WY	560019991	1	CNT169	EPA	EPA	Albany		Y	Y	Y	Y	Y
8	WY	560030002	1	BAS601	BLM	BLM	Big Horn				Y	Y	Y
8	WY	560359991	1	PND165	EPA	EPA	Sublette		Y	Y	Y	Y	Y
8	WY	560391011	1	YEL408	NPS	NPS	Teton		Y	Y	Y	Y	Y
8	WY	560450003	1	NEC602	BLM	BLM	Weston				Y	Y	Y
8	UT	490471002	1	DIN431	NPS	NPS	Uintah	New site 1/2014				Y	Y

Appendix G. Current list of 40 CFR Part 58 Compliant CASTNET Ozone Monitoring Sites (continued)

EPA RGN	ST	AQS_ID	POC	SITE_ID	AGY	PQAO ¹	COUNTY	NOTES	'11 ²	'12	'13	'14	'15
9	AZ	040038001	1	CHA467	NPS	NPS	Cochise		Y	Y	Y	Y	Y
9	AZ	040058001	1	GRC474	NPS	NPS	Coconino		Y	Y	Y	Y	Y
9	AZ	040170119	1	PET427	NPS	NPS	Navajo		Y	Y	Y	Y	Y
9	CA	060430003	1	YOS404	NPS	NPS	Mariposa		Y	Y	Y	Y	Y
9	CA	060690003	1	PIN414	NPS	NPS	San Benito		Y	Y	Y	Y	Y
9	CA	060719002	1	JOT403	NPS	NPS	San Bernardino		Y	Y	Y	Y	Y
9	CA	060893003	1	LAV410	NPS	NPS	Shasta		Y	Y	Y	Y	Y
9	CA	061070009	1	SEK430	NPS	NPS	Tulare		Y	Y	Y	Y	Y
9	NV	320330101	1	GRB411	NPS	NPS	White Pine		Y	Y	Y	Y	Y
10	AK	020680003	1	DEN417	NPS	NPS	Denali		Y	Y	Y	Y	Y
10	WA	530531010	1	MOR409	NPS	NPS	Pierce	Discontinued 11/2013	Y	Y	Y		
								Network Total Sites⁴	77	78	78	78	77

¹ See Appendix I for details on PQAO

² Year column indicates monitor may be compared to the NAAQS for that year

³ Bold font indicates status change to the monitor for the upcoming year

⁴ Network Total Sites does not include the two NAAQS-excluded monitors (ROM206 and MCK231)

Appendix H. CBSA Code and Title for CASTNET Sites

EPA RGN	AQS ID	POC	CASTNET ID	STATE	COUNTY	DV PPB ¹	CBSA ²	POP. ³
1	090159991	1	ABT147	CT	Windham		Willimantic, CT	
1	230039991	1	ASH135	ME	Aroostook			
1	230090103	1	ACA416	ME	Hancock	65		
1	230199991	1	HOW132	ME	Penobscot		Bangor, ME	153,923
1	330099991	1	WST109	NH	Grafton		Lebanon, NH-VT	
2	340219991	1	WSP144	NJ	Mercer	76	Trenton-Ewing, NJ	366,513
2	360319991	1	HWF187	NY	Essex			
2	361099991	1	CTH110	NY	Tompkins		Ithaca, NY	101,564
3	240199991	1	BWR139	MD	Dorchester	75	Cambridge, MD	
3	240339991	1	BEL116	MD	Prince George's	80	Washington-Arlington-Alexandria, DC-VA-MD-WV	5,582,170
3	420019991	1	ARE128	PA	Adams		Gettysburg, PA	
3	420279991	1	PSU106	PA	Centre	72	State College, PA	153,990
3	420479991	1	KEF112	PA	Elk		St. Marys, PA	
3	420859991	1	MKG113	PA	Mercer		Youngstown-Warren-Boardman, OH-PA	565,773
3	421119991	1	LRL117	PA	Somerset	65	Somerset, PA	
3	510719991	1	VPI120	VA	Giles	63	Blacksburg-Christiansburg-Radford, VA	162,958
3	511130003	1	SHN418	VA	Madison	69		
3	511479991	1	PED108	VA	Prince Edward	62		
3	540219991	1	CDR119	WV	Gilmer	60		
3	540939991	1	PAR107	WV	Tucker			
4	010499991	1	SND152	AL	DeKalb	66	Fort Payne, AL	
4	120619991	1	IRL141	FL	Indian River	65	Sebastian-Vero Beach, FL	138,028
4	120779991	1	SUM156	FL	Liberty			
4	132319991	1	GAS153	GA	Pike	72	Atlanta-Sandy Springs-Marietta, GA	5,268,860
4	210610501	1	MAC426	KY	Edmonson	71	Bowling Green, KY	125,953
4	211759991	1	CKT136	KY	Morgan			
4	212219991	1	CDZ171	KY	Trigg		Clarksville, TN-KY	273,949
4	212299991	1	MCK131	KY	Washington	69		
4	212299991	2	MCK231	KY	Washington			
4	281619991	1	CVL151	MS	Yalobusha	63		
4	370119991	1	PNF126	NC	Avery	63		
4	370319991	1	BFT142	NC	Carteret		Morehead City, NC	
4	371139991	1	COW137	NC	Macon			
4	371239991	1	CND125	NC	Montgomery	66		
4	470090101	1	GRS420	TN	Blount	74	Knoxville, TN	698,030
4	470259991	1	SPD111	TN	Claiborne	62		
4	470419991	1	ESP127	TN	DeKalb			
5	170191001	1	BVL130	IL	Champaign		Champaign-Urbana, IL	231,891
5	170859991	1	STK138	IL	Jo Daviess	68		
5	171199991	1	ALH157	IL	Madison	76	St. Louis, MO-IL	2,812,896

Appendix H. CBSA Code and Title for CASTNET Sites (continued)

EPA RGN	AQS ID	POC	CASTNET ID	STATE	COUNTY	DV PPB ¹	CBSA ²	POP. ³
5	180839991	1	VIN140	IN	Knox	73	Vincennes, IN	
5	181699991	1	SAL133	IN	Wabash		Wabash, IN	
5	261579991	1	UVL124	MI	Tuscola			
5	261619991	1	ANA115	MI	Washtenaw		Ann Arbor, MI	344,791
5	261659991	1	HOX148	MI	Wexford		Cadillac, MI	
5	271370034	1	VOY413	MN	St. Louis	59	Duluth, MN-WI	279,771
5	390179991	1	OXF122	OH	Butler	77	Cincinnati-Middletown, OH-KY-IN	2,130,151
5	390479991	1	DCP114	OH	Fayette	72	Washington Court House, OH	
5	391219991	1	QAK172	OH	Noble			
5	551199991	1	PRK134	WI	Taylor	63		
6	050199991	1	CAD150	AR	Clark		Arkadelphia, AR	
6	400019009	1	CHE185	OK	Adair	75		
6	480430101	1	BBE401	TX	Brewster	71		
6	483739991	1	ALC188	TX	Polk			
6	483819991	1	PAL190	TX	Randall		Amarillo, TX	249,881
7	311079991	1	SAN189	NE	Knox	68		
8	080519991	1	GTH161	CO	Gunnison			
8	080690007	1	ROM406	CO	Larimer	76	Fort Collins-Loveland, CO	299,630
8	080699991	1	ROM206	CO	Larimer		Fort Collins-Loveland, CO	299,630
8	080830101	1	MEV405	CO	Montezuma	69		
8	300298001	1	GLR468	MT	Flathead	54	Kalispell, MT	
8	380070002	1	THR422	ND	Billings	57	Dickinson, ND	
8	460330132	3	WNC429	SD	Custer	63		
8	490370101	1	CAN407	UT	San Juan	69		
8	490471002	1	DIN431	UT	Uintah		Vernal, UT	
8	560019991	1	CNT169	WY	Albany		Laramie, WY	
8	560030002	1	BAS601	WY	Big Horn			
8	560359991	1	PND165	WY	Sublette			
8	560391011	1	YEL408	WY	Teton	65	Jackson, WY-ID	
8	560450003	1	NEC602	WY	Weston			
9	040038001	1	CHA467	AZ	Cochise	73	Sierra Vista-Douglas, AZ	
9	040058001	1	GRC474	AZ	Coconino	72	Flagstaff, AZ	134,421
9	040170119	1	PET427	AZ	Navajo	70	Show Low, AZ	
9	060430003	1	YOS404	CA	Mariposa	77		
9	060430003	2	YOS204	CA	Mariposa			
9	060690003	1	PIN414	CA	San Benito	70	San Jose-Sunnyvale-Santa Clara, CA	1,836,911
9	060719002	1	JOT403	CA	San Bernardino	90	Riverside-San Bernardino-Ontario, CA	4,224,851
9	060893003	1	LAV410	CA	Shasta	68	Redding, CA	177,223
9	061070009	1	SEK430	CA	Tulare	93	Visalia-Porterville, CA	442,179
9	320330101	1	GRB411	NV	White Pine	74		
10	020680003	1	DEN417	AK	Denali	52		

Appendix H. CBSA Code and Title for CASTNET Sites (continued)

EPA RGN	AQS ID	POC	CASTNET ID	STATE	COUNTY	DV PPB ¹	CBSA ²	POP. ³
10	530531010	1	MOR409	WA	Pierce	52	Seattle-Tacoma-Bellevue, WA	3,439,809

¹ Design values are displayed for the 2011-2013 sampling period when data completeness is sufficient. These values originate from OAQPS' Air Trends website: <http://epa.gov/airtrends/values.html>

² CBSA = Core Based Statistical Area - A statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core.

Definitions of statistical areas are from the Office of Management and Budget Federal Register Notice Vol 65, No. 249. December 27, 2000.

<http://www.whitehouse.gov/sites/default/files/omb/fedreg/metroareas122700.pdf>

³POP. = CBSA 2010 Census

https://www.census.gov/popest/data/historical/2010s/vintage_2011/metro.html

Appendix I. Summary of CASTNET Ozone Monitoring Sites – 2015

2015 SUMMARY

PQAO¹	PQAO Name	Number of Sites
1344	Environmental Protection Agency – Clean Air Markets Division	52 ²
0745	National Park Service – Air Resources Division	21
1366	Bureau of Land Management – Wyoming State Office	2
905	Cherokee Nation	1
0973	South Dakota – Department of Environment and Natural Resources	1
0782	North Dakota – Department of Health	1
0635	Maine Department of Environmental Protection – Bureau of Air Quality Control	1
	Total	79

¹ Principal Quality Assurance Organization (PQAO) as identified within the AQS AMP480 report.

² EPA-CAMD's site count of 52 includes two NAAQS Excluded ozone monitors: the EPA-sponsored QA monitor in Rocky Mountain National Park, CO (ROM206) and the collocated QA monitor in Mackville, KY (MCK231).