Arkansas Department of Environmental Quality
Technical Services Division
Air Lab
Annual Network Review for Ambient Air Monitoring Network

Under 40 CFR, Part 58, Subpart B, States are required to submit an annual monitoring network review to the Environmental Protection Agency (EPA) regional office in Dallas, Texas. This network plan is required to provide the framework for establishment and maintenance of an air quality surveillance system. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. The following document represents network plan proposed changes to the Arkansas air monitoring network for Fiscal Year 2008. These proposed changes incorporate new rule requirements from CFR 40 Parts 53 & 58 that were published October 17, 2006. The rules became effective December 18, 2006. This document also represents the commitment of the Air Lab Technical Services Division to effectively protect the health of the citizens of Arkansas through ambient air monitoring using the latest and best technology that is commercially available, and communicate the data collected as quickly and accurately as possible.

Tables 1A&B contain a listing of all Arkansas Department of Environmental Quality, Technical Services Division, Air Lab (ADEQ) ambient air monitoring sites currently operated and maintained by the agency. The reference to "AQS#/ site ID" in column 1 represents a unique site identification name that is assigned to each and every monitoring site in the network. AQS stands for Air Quality System and is a national air monitoring database that is maintained by EPA. Data collected from monitoring sites are entered into the AQS database and made available to the public within 90 days following the end of each calendar quarter as required in the new monitoring regulations.

TABLE 1A

AQS#/Site ID	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method
05-001-0011 Stuttgart	1703 N. Beurkle	34.518392	-91.558826	PM2.5	SLAMS	R&P 2000 FRM
05-003-0005 Crossett	201 Unity Rd.	33.139444	-91.950000	PM2.5	SLAMS	R&P 2000 FRM
05-035-0005 Marion	Polk & Colonial Dr.	35.196667	-90.191111	PM2.5 PM2.5 Ozone NO2	SLAMS SLAMS SLAMS SLAMS	R&P 2000 FRM R & P TEOM UV Photometric Chemiluminescence
05-051-0003 Hot Springs	300 Werner	34.470732	-93.064585	PM2.5	SLAMS	R&P 2000 FRM
05-067-0001 Newport	7648 Victory Blvd.	35.381618	-91.112267	PM2.5	SLAMS	R&P 2000 FRM
05-101-0002 Deer	Hwy 16	35.832500	-93.219167	Ozone	SLAMS	UV Photometric
05-107-0001 Helena	Cherry & Perry St.	34.528889	-90.585556	PM2.5	SLAMS	R&P 2000 FRM

AQS#/Site ID	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method
05-113-0002 Mena	Hornbeck Rd	34.585278	-94.226111	PM2.5	SLAMS	R&P 2000 FRM
05-113-0003 Eagle Mtn	463 Polk 631	34.454406	-94.143316	Ozone	SLAMS	UV Photometric
05-115-0003 Russellville	Glenwood & M St.	35.292222	-93.139167	PM2.5	SLAMS	R&P 2000 FRM
05-119-0007 PARR	Pike Ave at River Road	34.756111	-92.275833	PM2.5 PM10 Ozone NOx SO2 Speciation NOy CO	NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE	R & P 2000 FRM Gravimetric UV Photometric Chemiluminescence Pulsed Fluorescent Low Volume Chemiluminescence Nondispersive Infrared
05-119-1002 NLRAP	Remount Rd	34.830556	-92.259444	Ozone	SLAMS	UV Photometric
05-119-1004 Adams Field	1701 S. Bond	34.729167	-92.24333	PM2.5	SLAMS	R&P 2000 FRM
05-119-1007 VA	4300 Block of West 7th	34.745000	-92.319444	PM10	SLAMS	Gravimetric
05-119-1008 DSR	Doyle Springs Rd	34.681667	-92.328333	PM2.5 PM2.5 Ozone	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM UV Photometric
05-131-0008 Ft. Smith	5th & B St,	35.388333	-94.411944	PM2.5	SLAMS	R&P 2000 FRM
05-139-0006 El Dorado	Union Mem. Hospital	33.215000	-92.668889	PM2.5 PM2.5 SO2	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM Pulsed Fluorescent
05-143-0005 Springdale	600 S. Old Missouri Rd	36.179708	-94.116687	PM2.5 Ozone	SLAMS SLAMS	R&P TEOM UV Photometric
05-145-0001 Searcy	1901 E. Market	35.248611	-91.715278	PM2.5	SLAMS	R&P 2000 FRM

Table 1B

AQS#/Site ID	Pollutants Measured	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comp.	MSA
05-001-0011 Stuttgart	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-003-0005 Crossett	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-035-0005 Marion	PM2.5 PM2.5 Ozone NO2	Daily 1 in 3 Continuous Continuous Continuous	Regional Transport	Neighborhood Neighborhood Neighborhood Neighborhood	Yes Yes Yes Yes	Memphis
05-051-0003 Hot Springs	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-067-0001 Newport	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA

AQS#/Site ID	Pollutants Measured	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comp.	MSA
05-107-0001 Helena	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-101-0002 Deer	Ozone	Continuous	Background	Neighborhood	Yes	Not in a MSA
05-113-0002 Mena	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-113-0003 Eagle Mtn	Ozone	Continuous	Regional Transport	Neighborhood	Yes	Not in a MSA
05-115-0003 Russellville	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-119-0007 PARR	PM2.5 PM10 Ozone NOx SO2 Speciation CO NOy	Daily 1 in 1 Daily 1 in 6 Continuous Continuous Continuous Daily 1 in 6 Continuous Continuous	Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure	Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood	Yes Yes Yes Yes Yes No Yes Yes	Little Rock
05-119-1002 NLRAP	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1004 Adams Field	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1007 VA	PM10	Daily 1 in 6	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1008 DSR	PM2.5 PM2.5 Ozone	Daily 1 in 1 Continuous Continuous	Population Exposure	Neighborhood Neighborhood Neighborhood	Yes Yes Yes	Little Rock
05-131-0008 Ft. Smith	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-139-0006 El Dorado	PM2.5 PM2.5 SO2	Daily 1 in 3 Continuous Continuous	Population Exposure Population Exposure Population Exposure	Neighborhood Neighborhood Neighborhood	Yes Yes Yes	Not in a MSA
05-143-0005 Springdale	PM2.5 Ozone	Continuous	Population Exposure AQI	Neighborhood	Yes	Fayetteville/ Springdale
05-145-0001 Searcy	PM2.5	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA

All ADEQ sites and monitors conform to 40 CFR, Subchapter C, Part 58 Appendices A (see attached Precision/Accuracy Report), C (see methods listed in Table 1a), D &E. Web pages for pictures and maps of the monitoring sites are under construction. The link will be from the ADEQ home page (http://www.adeq.state.ar.us) date of completion is not known at the present.

ADEQ is requesting the following changes to the network:

Population Statistics

The MSA's for the state of Arkansas:

1. Little Rock MSA – 583,845
2. Fayetteville MSA – 311,121
3. Ft. Smith MSA – 207,290

4. Texarkana MSA – 129,749
5. Pine Bluff MSA – 84,278
6. Jonesboro MSA – 82,148
7. Memphis TN,MS,AR MSA – 1,135,614

Ozone

According to Table D-2 of Appendix D to Part 58, 40 CFR the minimum number of SLAMS ozone monitors required based on population are:

Little Rock – 2
Memphis MSA – 2

Currently the state exceeds the minimum requirements with 3 ozone monitors in the Little Rock MSA, 1 in the Memphis MSA (Memphis has 2 monitors) and 1 in the Fayetteville MSA. There are 2 additional SLAMS ozone monitors in the rural areas of Deer and Eagle Mountain which are used to enhance EPA's AIRNOW ozone mapping program and to determine background and transport ozone. The current network is more than adequate to assess population exposure, transport and background ozone levels, and no additions or changes are proposed.

PM2.5

According to Table D-5 of Appendix D, Part 58, 40 CFR, the minimum number of SLAMS PM2.5 monitors required are:

Little Rock – 3
Memphis MSA– 3

ADEQ currently operates the following sites (Table 2) in the Arkansas network which meet minimum SLAMS network requirements and are comparable to the PM2.5 NAAQS. We are currently requesting no changes in the current network.

Table 2

PM2.5 FRM Sites	Current Sampling Schedule	Proposed Sampling Schedule	2004 Daily 98th %	2005 Daily 98th %	2006 Daily 98th %	Design Value % Daily NAQQS	2004 Arith. Mean	2005 Arith. Mean	2006 Arith. Mean	Design Value %Annual NAAQS	Co-located with TEOM
Adams Field	1:3	1:3	30.4	37.7	25.1	88	13.3	16.	12.7	93%	NO
ADEQ	1:1	1:1	29.6	32.7	24.2	91	12.5	15.2	13.	90%	YES
Conway	1:3	1:3	25.7	37.4	25.1	84	11.8	14.4	11.6	84%	NO
Crossett	1:3	1:3	23.4	36.7	27.7	84	11.	14.4	13.6	87%	NO
El Dorado	1:3	1:3	22.9	37.8	24.7	81	11.3	14.8	11.9	84%	YES
Ft. Smith	1:3	1:3	25.1	35	22.7	78	11.9	14.7	11.1	84%	NO
Helena	1:3	1:3	26.3	34.6	24.2	81	10.5	13.5	10.9	78%	NO
Hot Springs	1:3	1:3	24.3	32.2	21.8	75	10.9	14.2	11.8	82%	NO
Marion	1:3	1:3		39.9	23.3	90		14.1	12.3	88%	YES
Mena	1:3	1:3	22.9	29.9	23.8	73	10.8	12.5	11.6	78%	NO
Newport	1:3	1:3			25.1	-			10.5	-	NO

Parr	1:1	1:1	28	39.3	25.5	88	12.3	14.6	12.2	87%	NO
Russellville	1:3	1:3	25.1	34.5	25.6	81	11.4	14.4	12.2	84%	NO
Searcy	1:3	1:3	26.6	39.2	23	85	11.3	14.6	11.9	85%	NO
Stuttgart	1:3	1:3	26.1	36.3	23.9	82	11.6	13.9	13.4	86%	NO

The following sites (Table 3) are for daily Air Quality Index (AQI) reporting. The monitors at these locations also report hourly data to the AIRNOW web page to be used for real-time air quality particulate mapping. No changes in number or location are requested for the two sites.

Table 3

Continuous PM2.5 AQI Sites	Sampling Frequency	AQS #
Springdale	Hourly	05-143-0005
PARR	Hourly	05-119-0007

PM 10

According to CFR 40, Table D-4 of Appendix D, Part 58, the minimum requirement for low concentrations sites and number of stations per MSA are:
Little Rock – 2
ADEQ currently has two monitors in the Little Rock MSA below in Table 4.

Table 4

PM 10 Sites	Current Sampling Schedule	2004 Annual Max.Conc.	2005 Annual Max. Conc.	2006 Annual Max. Conc.	3 yr avg. PM10 Conc. 2004-6	Percent of Standard	Proposed Sampling Schedule
05-119-0007	1:6	51	52	39	47	32	1:6
05-119-1007	1:6	53	49	42	48	32	1:6

Sulfur Dioxide (SO2), Nitrogen Oxides (NO2), and Carbon Monoxide (CO)

Under 40 CFR Part 58 Appendix D-4 of the new monitoring regulations, there are now no minimum requirements for the number of SO2, NO2, or CO sites, however, discontinuation of existing sites must be approved by the EPA Regional Administrator. ADEQ has no plans for changing the monitors that are currently in place.

SO2 – Currently there are 2 sites in Arkansas: Parr in Little Rock (05-119-0007) and El Dorado (05-139-0006). No changes in the SO2 network are being requested.

NO2, NOy – There are 2 NO2 sites in Arkansas: Parr in Little Rock (05-119-0007) and Marion (05-035-0005). Since Parr is the proposed NCORE site a NOy monitor will be added into the network. No other changes are being requested at this time.

CO – There is one CO monitors in Arkansas it is located at the proposed NCORE site (Parr 05-119-0007). There are no plans for any additional CO sites.

PM2.5 Chemical Speciation

The new regulations require speciation at the NCORE site. We currently have a sampler at Parr (05-119-0007) and no changes are planned.

Summary

Any comments or questions should be sent to:

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