SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

June 30, 2017

Mr. Guy Donaldson, Associate Director-Air
USEPA Region 6 (6MMA)
1445 Ross Ave. Suite 1200
Dallas, TX 75202-2733

Re: FY 2018 Annual Network Review

Mr. Donaldson:

Please find enclosed the 2017 Annual Network Review from the Oklahoma Department of Environmental Quality (DEQ). This document has been posted on our website for the required 30-day public comment notice period and is now ready for submittal to your office. No comments were received from the public. We did receive one inquiry from the public concerning recommendations pertaining to the network or network plan. DEQ responded to the inquiry but no changes to the document resulted. The inquiry and response will be available upon request.

Some minor changes were made to the document following its posting on the DEQ web page and comment period. These were made in order to address recommendations from the EPA Region 6 monitoring staff. Should staff find that further changes are necessary, please address those in the official response to our submittal.

We look forward to EPA's response and to working with your staff to ensure that our network continues to be the best possible in order to better protect the environment and the health of our stakeholders and the public in general. Should you have any questions regarding this submittal, feel free to contact members of my staff, Kent Stafford at 405.702.4139 or Curt Goeller at 405.702.4126.

Sincerely,

Curt Goeller, for

Cheryl E. Bradley
Environmental Programs Manager
Data and Planning Section

Cc: Fran Verhalen
Ellen Belk

Enclosure

Oklahoma Department of Environmental Quality
Air Quality Division
2017
Air Monitoring Network Plan

Oklahoma Department of Environmental Quality
707 N. Robinson
P.O. Box 1677
Oklahoma City, OK 73101-1677

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Introduction

This report is a review of the air monitoring network operated by the Oklahoma Department of Environmental Quality's Air Quality Division (AQD). It will be submitted by July 1, 2017 to the U.S. Environmental Protection Agency (EPA) and is a required annual report to provide the framework for establishing and maintaining an air quality surveillance system. AQD uses data collected by this network for comparison to the National Ambient Air Quality Standards (NAAQS). AQD maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, performs within specifications in accordance with 40 CFR Part 58, Appendix B, follows procedure outlined within 40 CFR Part 58, Appendix C, designs its network in accordance with 40 CFR Part 58, Appendix D, and locates its sites to meet all requirements of 40 CFR Part 58, Appendix E.

Below is a summary of changes that have been approved by Region 6 EPA, and implemented since the last Annual Monitoring Network Review:

- Addition of two new SO2 monitoring sites for point observation: 40-047-0555 and 40-097-0188.
- Re-location of SO2 monitoring at 40-101-0167 to 40-101-0170.
- Addition of lead monitoring site for point observation: 40-121-0416.
- Relocation of Ozone monitoring from 40-069-0324 to 40-013-0380.
- Relocation of Ozone monitoring from 40-033-0680 to 40-067-0671.
- Replaced the 5030i SHARP, Low Volume FEM sampling method with the T640, Broadband Spectroscopy sampling method at 40-109-1037 and 40-143-1127.

Table 1 is a list of all currently existing AQD ambient air monitoring sites that the agency operates and maintains as of May 1, 2017. Table 2 is a list of proposed changes. "Air Quality System (AQS) Site ID#" in column one is a unique identification number assigned to each monitoring site in the state network. AQS is a national air monitoring database maintained by the EPA.

Table 1. Air Monitoring Site Information:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA
40-027-0049	S.E. 19th St. (Moore Water Tower), Moore	35.320105	-97.484099	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC ****
				PM 2.5	Beta Attenuation	SPM*	Continuous	Population Exposure	Urban	Yes	OKC
40-019-0297	Memorial Dr., Healdton City Lake	34.244189	-97.462931	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
				PM 2.5	Beta Attenuation	SPM*	Continuous	Regional Transport	Regional	Yes	Not in MSA
40-069-0324	1607 S. Airport Rd. Tishomingo	34.214818	-96.676936	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
40-031-0651	2211 NW 25th Lawton	34.632980	-98.428790	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Lawton
				PM 2.5	Beta Attenuation	SPM*	Continuous	Population Exposure	Urban	Yes	Lawton
40-043-0860	Seiling Municipal Airport, Seiling	36.158414	-98.931973	Ozone	U.V. Absorption	SLAMS	Continuous	General Background	Regional	Yes	Not in MSA
				PM 2.5	Beta Attenuation	SPM*	Continuous	General Background	Regional	Yes	Not in MSA
40-033-0680	3rd St. and Boundary, Walters	34.346981	-98.307621	Ozone	Ecotech Serinus 10	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
40-087-1073	310 E. Burr Oak Rd., Goldsby	35.159649	-97.473794	Ozone	U.V. Absorption	SLAMS	Continuous	Upwind Background/ General Background	Regional	Yes	OKC

40-071-0604	306 E Otoe, Ponca City	36.697186	-97.081350	SO2**	Pulsed Fluorescence	SLAMS	Continuous	Population Exposure/ Source Oriented	Neighborhood	Yes	Not in MSA
				PM 2.5	Beta Attenuation	SLAMS	Continuous	Population Exposure	Neighborhood	Yes	Not in MSA
40-101-0167	3500 Port Place, Muskogee	35.793134	-95.302235	PM 10	TEOM Gravimetric	SLAMS	Continuous	Source Oriented	Middle	Yes	Not in MSA
40-017-0101	12575 NW 10th (Water Tower), Yukon	35.479215	-97.751503	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
				NO2	Gas Phase Chemiluminescence	SPM	Continuous	Maximum Precursor Emissions Impact	Urban	No	OKC
40-109-0096	12880A N.E. 10th, Choctaw	35.477801	-97.303044	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
40-109-0033	N.E. 10th and Stonewall, OKC	35.477036	-97.494309	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
				NO2	Gas Phase Chemiluminescence	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
40-109-0035	N.W. 5th and Shartel, OKC	35.472920	-97.527090	PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3)	Population Exposure	Neighborhood	Yes	OKC
				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Neighborhood	Yes	OKC
				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6) Co-located	Quality Assurance	Neighborhood	Yes	OKC

				PM 10-PM 2.5	Paired Gravimetric	SPM	(1 in 6)	Population Exposure	Neighborhood	Yes	OKC
40-109-1037	Oklahoma Christian University, OKC	35.614131	-97.475083	SO2**	U.V. Fluorescence	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
				Chemical Speciation	Low Volume Gravimetric/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Urban	No	OKC
				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Urban	Yes	OKC
				PM 10	TEOM Gravimetric	SPM	Continuous	Population Exposure	Urban	No	OKC
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3)	Population Exposure	Urban	Yes	OKC
				PM 2.5	Broadband Spectroscopy	SPM*	Continuous	Population Exposure	Urban	Yes	OKC
				PM 10-PM 2.5	Paired Gravimetric	SPM	(1 in 6)	Population Exposure	Urban	No	OKC
				CO	Gas Filter Correlation	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
				Ozone	U.V. Absorption	SLAMS	Continuous	Highest Concentration	Urban	Yes	OKC
40-121-0415	104 Airport Rd., McAlester Municipal Airport, McAlester	34.885608	-95.784410	Ozone	U.V. Absorption	SLAMS	Continuous	Regional Transport	Regional	Yes	Not in MSA
				PM 2.5	Beta Attenuation	SLAMS	Continuous	General Background	Regional	Yes	Not in MSA
				PM 2.5	Sequential FRM/ Micro-gravimetric Filter Weighing	SLAMS	(1 in 6) Co-located	Quality Assurance	Regional	Yes	Not in MSA

40-039-0856	Rader Park, Weatherford	35.560280	-98.683490	PM 10	TEOM Gravimetric	SPM	Continuous	Population Exposure	Regional	Yes	Not in MSA
40-121-0416	108 N Main St., Savanna	34.829396	-95.843642	Lead	Hi-Volume	SLAMS	(1 in 6)	Source Oriented	Neighborhood	Yes	Not in MSA
40-143-1127	3520 1/2 N. Peoria, North Tulsa-Fire Station #24, Tulsa	36.204902	-95.976537	Ozone	U.V. Absorption	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact	Urban	Yes	Tulsa
				NO2	Chemiluminescence	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact	Urban	Yes	Tulsa
				Trace level NOy	Chemiluminescence	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact	Urban	No	Tulsa
				Trace level CO	Gas Filter Correlation	NCore/ SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa
				Trace level SO2**	U.V. Fluorescence	NCore/ SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 3)	Population Exposure	Urban	Yes	Tulsa
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 6) Co-located	Quality Assurance	Urban	Yes	Tulsa
				PM 2.5	Broadband Spectroscopy	NCore/ SPM*	Continuous	Population Exposure	Urban	Yes	Tulsa

				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 3)	Population Exposure	Urban	Yes	Tulsa
				PM 10- PM 2.5	Paired Gravimetric	NCore/ SPM	(1 in 3)	Population Exposure	Urban	No	Tulsa
				Chemical Speciation	Low Volume Gravimetric/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 3)	Population Exposure	Urban	No	Tulsa
40-113-0226	1521 S. Lombard, Skiatook	36.355860	-96.012430	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa
40-037-0144	City Water Plant, Mannford	36.105481	-96.361196	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa
40-143-0174	502 E. 144th Pl., Tulsa South, Tulsa	35.953708	-96.004975	Ozone	U.V. Absorption	SLAMS	Continuous	Upwind Background	Urban	Yes	Tulsa
				PM 2.5	Beta Attenuation	SPM*	Continuous	Population Exposure	Urban	Yes	Tulsa
40-143-0178	18707 E. 21st St., Tulsa East, Tulsa	36.133802	-95.764537	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa

40-143-0175	1710 W. Charles Page Blvd. Tulsa	36.149877	-96.011664	SO2**	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Tulsa
40-037-0146	1205 N. Frankoma Rd., Sapulpa	36.013567	-96.099144	Lead	Hi-Volume	SLAMS	(1 in 6)	Source Oriented	Neighborhood	Yes	Tulsa
				Lead	Hi-Volume	SLAMS	(1 in 12) Co-located	Quality Assurance	Neighborhood	Yes	Tulsa
40-051-0065	1 Bradley Rd., Bradley	34.877064	-97.707801	NO2	Chemiluminescence	SPM	Continuous	General Background	Regional	No	Not in MSA
40-109-0097	3112 N. Grand BLVD, OKC	35.503070	-97.577981	NO2	Chemiluminescence	SLAMS	Continuous	Highest Concentration	Micro	Yes	OKC
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3)	Population Exposure	Micro	Yes	OKC
				CO	Gas Filter Correlation	SLAMS	Continuous	Population Exposure	Micro	Yes	OKC
40-143-0179	124 N. Riverside Dr. West, Tulsa	36.154830	-96.015845	SO2**	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Tulsa
				H2S	U.V. Fluorescence	SPM ***	Continuous	Source Oriented	Neighborhood	No	Tulsa
40-143-0235	2443 S. Jackson Ave., Tulsa	36.126945	-95.998941	SO2**	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Middle	Yes	Tulsa
				H2S	U.V. Fluorescence	SPM ***	Continuous	Source Oriented	Middle	No	Tulsa
40-143-1110	445 S Jamestown Ave, Turner Park, Tulsa	36.154384	-95.937950	PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3)	Population Exposure	Neighborhood	Yes	Tulsa

40-147-0217	7740 N. 400 Rd., Copan	36.512368	-95.882622	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
				PM 2.5	Beta Attenuation	SPM*	Continuous	Regional Transport	Regional	Yes	Not in MSA
40-013-0380	814 Waldron Rd., Durant	33.945379	-96.405726	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
40-047-0555	11826 N 30th St, Kremlin	36.512363	-97.845959	SO2**	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Middle	Yes	Not in MSA
40-097-0188	470 13th St., MAIP, Pryor	36.228993	-95.269196	SO2**	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Not in MSA
40-067-0671	Lake Waurika Corp. of Eng. Office, Waurika	34.226639	-98.035440	Ozone	Ecotech Serinus 10	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
40-101-0170	108 North 55th St. East, Fort Gibson	35.775813	-95.287067	SO2**	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Not in MSA

*$PM_{2.5}$ SPM monitors are used to support the state Health Advisory Program and will remain SPMs.
**AQS shows two SO_2 monitors due to reports being entered for both hourly and 5-minute data.
***H_2S SPMs are used to monitor major sources in the Tulsa area in response to the state implemented H_2S ambient standard and will remain SPMs.
All AQD sites and monitors conform to 40 CFR, Subchapter C, Part 58 Appendix A, Appendix C (see methods in column 6 of table 2), and Appendices D & E (see photos located at http://www.deq.state.ok.us/AQDnew/monitoring/cpdata.htm by clicking on desired location of the site map).
****Oklahoma City has been abbreviated to OKC for all tables,

Table 2. AQD Network Proposed Changes

Monitors Recommended to be Relocated:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-019-0297	750 Lake Road, Healdton City Lake, Healdton	34.244189	-97.462931	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
40-147-0217	7740 N. 400 Rd., Copan	36.908183	-95.882623	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
				PM 2.5	Beta Attenuation	SPM	Continuous	Regional Transport	Regional	No	Not in MSA

40-019-0297 to be relocated to:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-085-0300	Noble Foundation-Red River Research Farm, Burneyville	33.880812	-97.275896	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA

40-147-0217 to be relocated to:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-105-0207	US Highway 169 and Oklahoma Highway 10 west junction, South Coffeyville*	36.918242	-95.632127	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA
				PM 2.5	Beta Attenuation	SPM	Continuous	Regional Transport	Regional	No	Not in MSA

*See additional information of proposed site in "Further Comments" section.

Monitors Recommended to be Removed and Discontinued:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-017-0101	12575 NW 10th (Water Tower), Yukon	35.479215	-97.751503	NO2*	Gas Phase Chemiluminescence	SPM	Continuous	Maximum Precursor Emissions Impact	Urban	No	OKC
40-051-0065	1 Bradley Rd., Bradley	34.877064	-97.707801	NO2*	Gas Phase Chemiluminescence	SPM	Continuous	General Background	Regional	No	Not in MSA

* These monitors are SPMs that were set up to enhance the state's toxics network. They are not utilized to meet minimum network requirements. Oklahoma DEQ has decided to cease this specific toxics study and is removing these NO2 sites.

Monitor Operating Schedule Recommended to be Changed:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-143-1110	445 S Jamestown Ave, Turner Park	36.154384	-95.937950	PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3)*	Population Exposure	Neighborhood	Yes	Tulsa

*Recommended to be changed to a (1 in 6) operating schedule.

Further Comments

Near Road Addition to Tulsa:

EPA's current regulatory requirements from 40 CFR Appendix D to Part 58 § 4.3.2(a) states as follows:

Within the NO_2 network, there must be one microscale near-road NO_2 monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road with high AADT counts as specified in paragraph 4.3.2(a)(1) of this appendix. An additional near-road NO_2monitoring station is required for any CBSA with a population of 2,500,000 persons or more, or in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts to monitor a second location of expected maximum hourly concentrations. CBSA populations shall be based on the latest available census figures.

The Tulsa MSA has the second largest population in Oklahoma behind the Oklahoma City MSA with an estimated population of 987,201 based on the latest Census Data Estimates found on the US Census Bureau website:
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk. As per 40 CFR Appendix D to Part 58 § 4.3.2(a), the Tulsa MSA will not require a near-road NO2 monitoring site at this time due to the population remaining under 1,000,000 persons.

Prevention of Significant Deterioration Air Monitoring:

The Oklahoma DEQ monitoring network meets all requirements found in 40 CFR Part 58 Appendices B. PSD monitoring is currently not necessary for the Oklahoma DEQ.

Maintenance Plans for Discontinuation of SLAMS Monitors:

Oklahoma currently is in attainment with all NAAQS and is not under a SIP Maintenance Plan.

Addition of 40-105-0207:

40-147-0217 (Copan) is planning to be transitioned to new site 40-105-0207 (South Coffeyville). The site will be located at the junction of US Highway 169 and Oklahoma Highway 10 (latitude 36.918242, longitude -95.632127). Please see Appendix 1 for images and further description of site.

Request for waiver of probe siting criteria for NO2 at AQS site #40-109-0033:

During a recent internal audit from the Air Quality QA section, it was discovered that a waiver for probe siting was not granted for the NO2 sampler at AQS site #40-109-0033. The inlet of the sampling train, which is a total of 16.46 meters above ground, is less than 2 meters in excess of the allowed 15 meters for probe height. An initial waiver for probe height for ozone, which used the same manifold, was granted in 1980. This ozone waiver was also re-confirmed to be valid in section B of the 2014 Air Monitoring Program Technical Systems Audit (TSA) document. The verbiage within this TSA audit indicated that the initial waiver would be valid unless or until a change was made to the sampling probe. No changes have been made; therefore, we would similarly like to request that a waiver be granted for the NO2 analyzer sampling probe at this location. This would not constitute any change as both the ozone and NO2 analyzers have been sampling at this location for the same period of time (1980 – current), using the exact same 4-inch glass (inert) sampling manifold, at the same height. It is unclear as to why a waiver was never requested or granted for this analyzer but the approval of this waiver will hopefully be nothing more than a formality. If necessary, DEQ can certify using historical site documentation and AQS site and monitor records that there have been no changes to the sampling train during this period.

Appendix 1

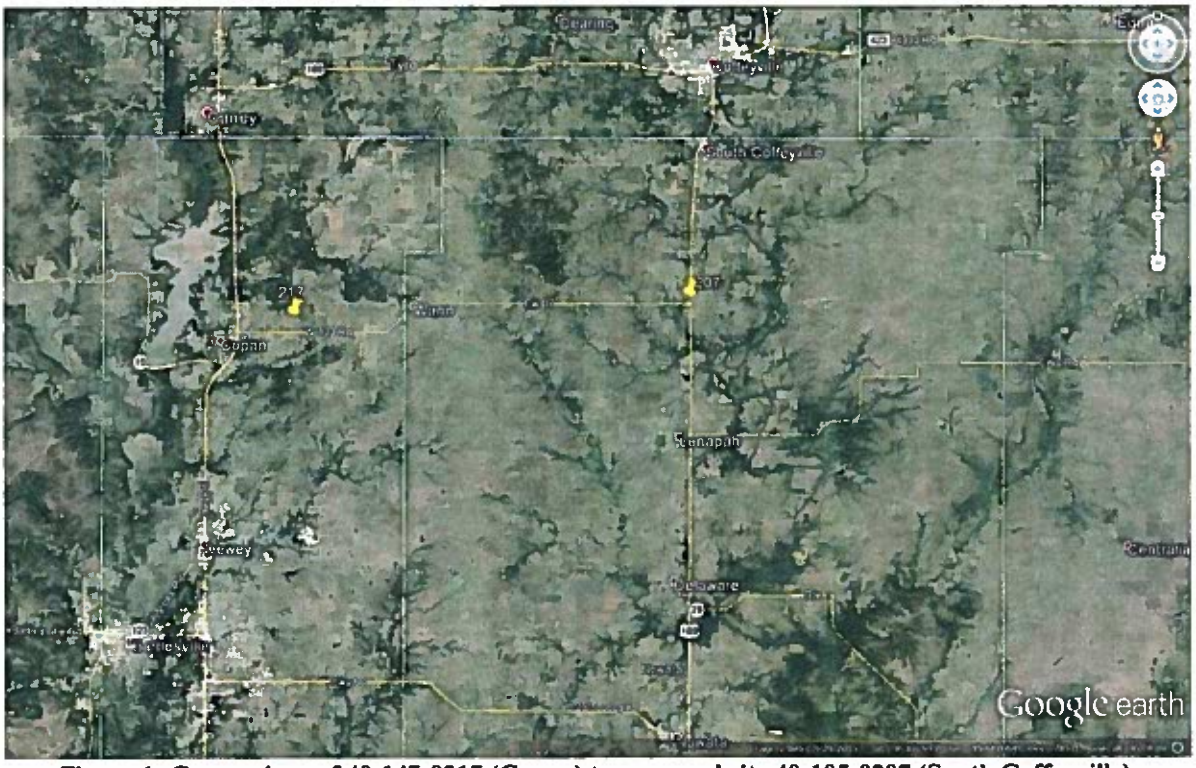

Figure 1: Comparison of 40-147-0217 (Copan) to proposed site 40-105-0207 (South Coffeyville).

Figure 2: Satellite view of proposed site 40-105-0207.

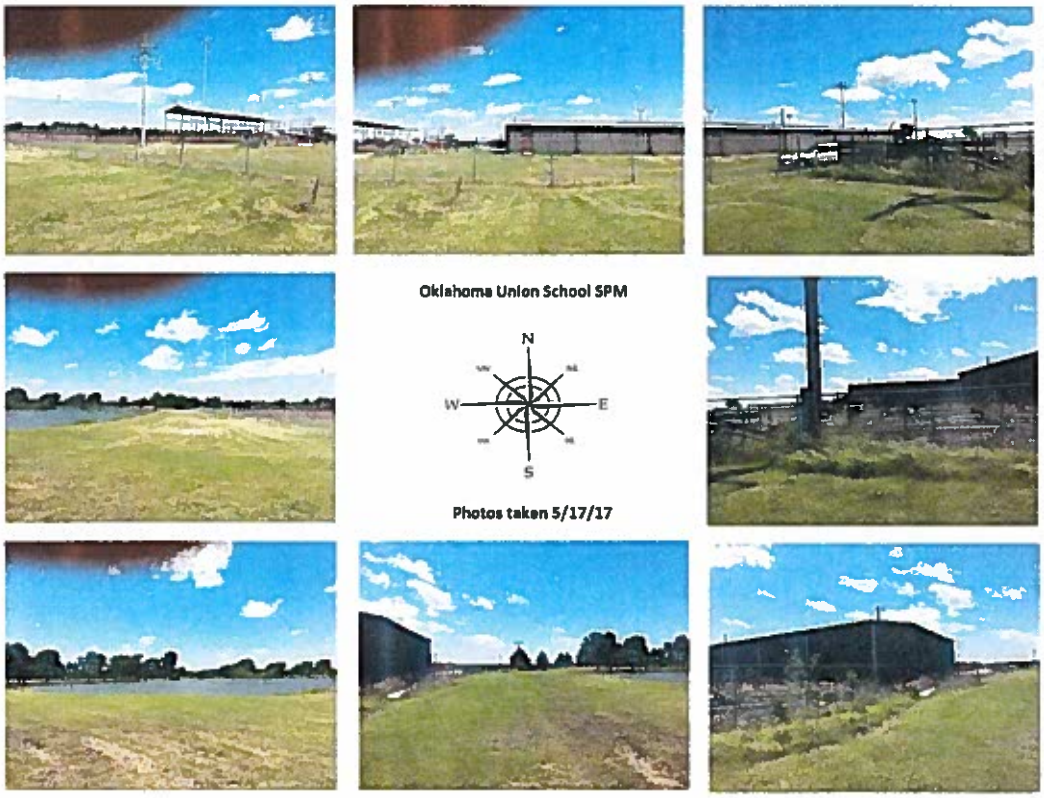

Figure 3: Directional views from proposed site location for 40-105-0207.

Figure 4: Distance of proposed site location from nearby roads, vegetation, buildings, and other possible obstructions and sources.

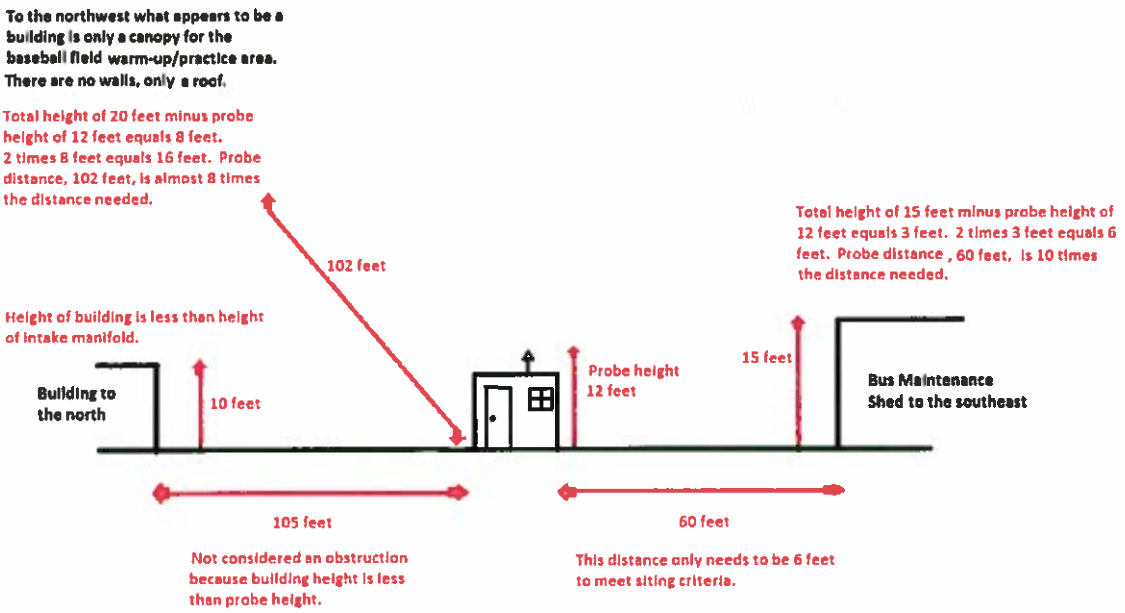

Figure 5: Further comparison of proposed site probe heights and possible nearby obstructions.

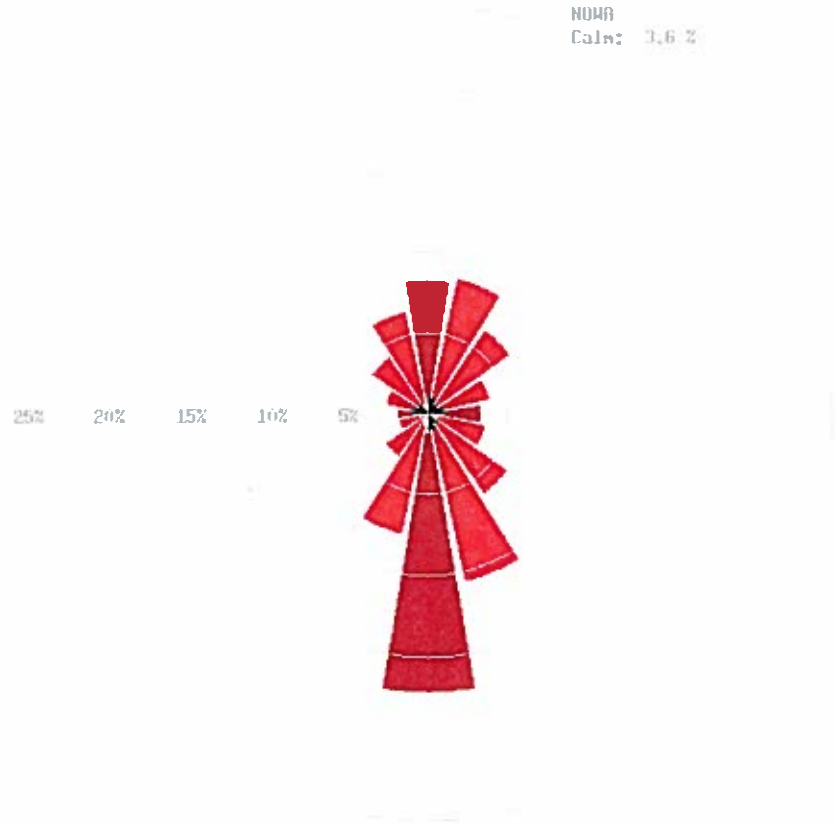

Figure 6: Wind Rose from Nowata Mesonet site, closest Mesonet site to proposed location.