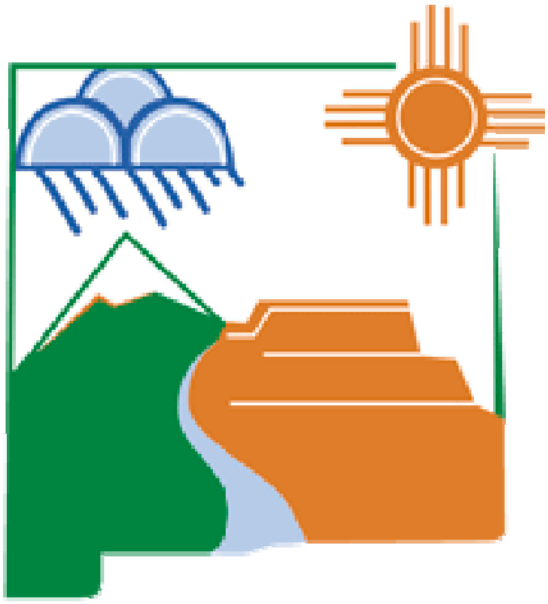
NMED
New Mexico Environment Department



Air Quality Bureau

2018 Annual Network Review

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Air Quality Bureau
New Mexico Environment Department
July 1, 2018

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The purpose of this document is to provide information concerning the operation of the ambient air monitoring network by the New Mexico Environment Department (NMED) Air Quality Bureau (AQB) in Fiscal Year 2018 which covers the period from July 1, 2017 through June 30, 2018.

Introduction

In October 2006, US EPA issued final regulations concerning state and local agency ambient air monitoring networks. These regulations require states to submit an annual monitoring network review to US EPA. This network plan is required to provide the framework for establishment and maintenance of an air quality surveillance system and to list any changes that are proposed to take place to the current network during the 2018 Fiscal Year.

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 review is required to provide the framework for establishment and maintenance of an air quality surveillance system. The annual monitoring network review must be made available for public inspection for at least 30 days prior to submission to EPA.

1.0 Overview

At the end of the state fiscal year June 30, 2018, the Bureau operated 20 criteria air pollutant monitoring sites located in 11 of the State's 33 counties. Each air monitoring location is sited to meet the three basic monitoring objectives and at least one of the six federal criteria of: NO_2, O_3, CO, Lead, particulate matter (PM_{10} and $PM_{2.5}$), and SO_2 for ambient air monitoring networks.

In 2018 the Ambient Air Monitoring Section currently has a full-time staff of six, with one recent vacancy during FY 2018.

Table 1 (Network Element Worksheet) contains a listing of all New Mexico Environment Department, Air Quality Bureau ambient air monitoring sites operating at the end of the state fiscal year 2018.

Site Designation Coding

The NMED-Air Quality Bureau 20 air monitoring stations each have their own state region designation identified with a numeric-alpha code and site name (i.e.1ZB Bloomfield). The number and name represents the state's Air Quality Control Region and the letter(s) identifies the site followed

by the name of the site. In addition, each site has a numeric AQS (Air Quality System) identifier code which is based on EPA's state, county and site ID (i.e. 35-045-1005) designation. The first two numbers identify the state (New Mexico is 35), the second set of three numbers refers to the county where the monitoring site is located. The third set of four numbers is the monitoring site ID number. Figure 1 on page 6 shows the state and EPA air regions. The table below is a complete listing of all 20 air monitoring sites designation code, both state and EPA throughout the network.

NMED Site Designation	EPA - AQS Number Designation
1H - Sub Station	35-045-1005
1ZB - Bloomfield	35-045-0009
1NL - Navajo Lake	35-045-0018
2LL - Los Lunas	35-061-0008
2ZJ - Bernalillo	35-043-1001
3CRD - Coyote Ranger District	35-039-0026
3SFA - Santa Fe Airport	35-049-0021
3ZD - Taos	35-055-0005
5ZR - Carlsbad	35-015-1005
5ZS - Hobbs Jefferson	35-025-0008
6CM - Anthony	35-013-0016
6O - La Union	35-013-0008
6Q - Las Cruces Office	35-013-0025
6WM - West Mesa	35-013-0024
6ZL - Holman Road	35-013-0019
6ZK - Chaparral	35-013-0020
6ZM - Desert View	35-013-0021
6ZN - Santa Teresa	35-013-0022
6ZQ - Solano	35-013-0023
7E - Deming Airport	35-029-0003

Air Monitoring Network

NMED-AQB regulates air quality to protect public health and the environment in the State of New Mexico, excluding Bernalillo County. Air monitoring data are required by regulation and are used to determine compliance with U.S. EPA's NAAQS. Other important uses of the air monitoring data include the production of a daily Air Quality Index (AQI), daily air quality forecast report, support of short and long-term health risk assessments, identification of localized health concerns, and tracking long-term trends in air quality. New Mexico monitors four of the six NAAQS criteria pollutants: NO_2, O_3, particulate matter (PM_{10} and $PM_{2.5}$), and SO_2. NMED-AQB does not monitor for CO or Lead as New Mexico currently does not meet the criteria for monitoring these pollutants.

Air Quality Data

Overview of Monitored Parameters – Criteria Pollutants

Nitrogen Dioxide (NO_2)

NO_2 is a highly toxic, reddish brown gas that is created primarily from fuel combustion in industrial sources and vehicles. It creates an odorous haze that causes eye and sinus irritation, blocks natural sunlight, and reduces visibility.

Ozone (O_3)
Ground- level O_3, also known as photochemical smog, is not emitted into the atmosphere as ozone, but rather is formed by the reactions of other pollutants. The primary pollutants entering into this reaction, VOC's and oxides of nitrogen, create ozone in the presence of sunlight. Ozone is a strong irritant of the upper respiratory system and causes damage to crops.

Sulfur Dioxide (SO_2)
SO_2 is a gaseous pollutant that is emitted primarily by industrial furnaces or power plants burning coal or oil containing sulfur. At high concentrations, breathing can be impaired. Damage to vegetation can also result.

Fine Particulate Matter ($PM_{2.5}$)
Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. These particles are breathed deep into the lungs. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Particulate Matter (PM_{10})
Particulate matter with a mean diameter of 10 microns or less is emitted from transportation and industrial sources. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Meteorological Monitoring
NMED-AQB includes meteorological monitoring of the local area because the outcome of air pollutants is influenced by the movement and characteristics of the air mass into which they are emitted. If the air is calm and pollutants cannot disperse, then the concentration of these pollutants will build up. Conversely, if a strong and turbulent wind is blowing, the pollutant will rapidly disperse into the atmosphere and will result in lower concentrations near the pollution source. The measurements of wind speed and direction, temperature, humidity, rainfall, barometric pressure, ultraviolet radiation and solar radiation are important parameters used in the study of air quality monitoring results and to further understand the chemical reactions that occur in the atmosphere.

Monitoring Methodology
NMED-AQB air monitoring network uses Thermo Environmental Instruments i-Series for all gaseous monitoring. The Model 42i Chemiluminescence monitor collects NO/NOx/NO_2 data, the Model 43i Pulsed Florescence monitor collects SO_2 data and the Model 49i UV Photometric monitor collects Ozone data. For particulate matter sampling, NMED-AQB is now using the Thermo Environmental Instruments 2025i Series Partisol FRM samplers. Three of the four 2025i samplers are $PM_{2.5}$ designated and the fourth is designated as PM_{10} which replaced the one aging Wedding PM_{10} sampler. NMED-AQB has replaced all aging TEOM PM_{10} continuous samplers in the network with Met-One Instrument's BAM-1020 PM_{10} continuous samplers, per approval

by EPA Region 6 of NMED's – AQB Five-+Year Network Assessment and 2016 Annual Network Plan dated October 28, 2016.

2.0 Network Review by Pollutant and Respective Air Quality Control Regions

NMED-AQB has reviewed its current ambient air quality network and proposed changes to the network implemented during Fiscal Year 2018. Current NAAQS, data trends, siting concerns, site access concerns, and other monitoring issues all contribute to any proposed network revisions.

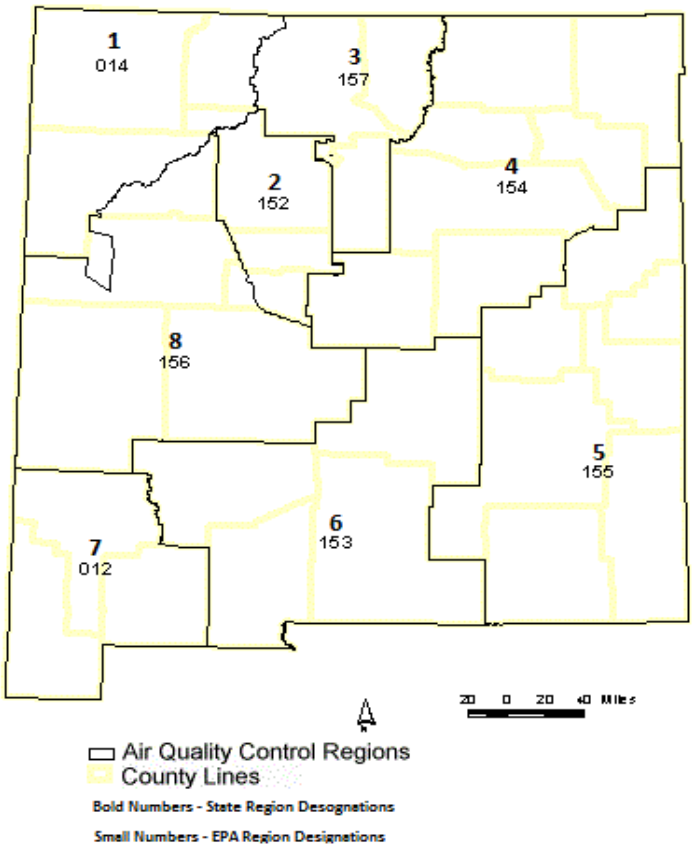
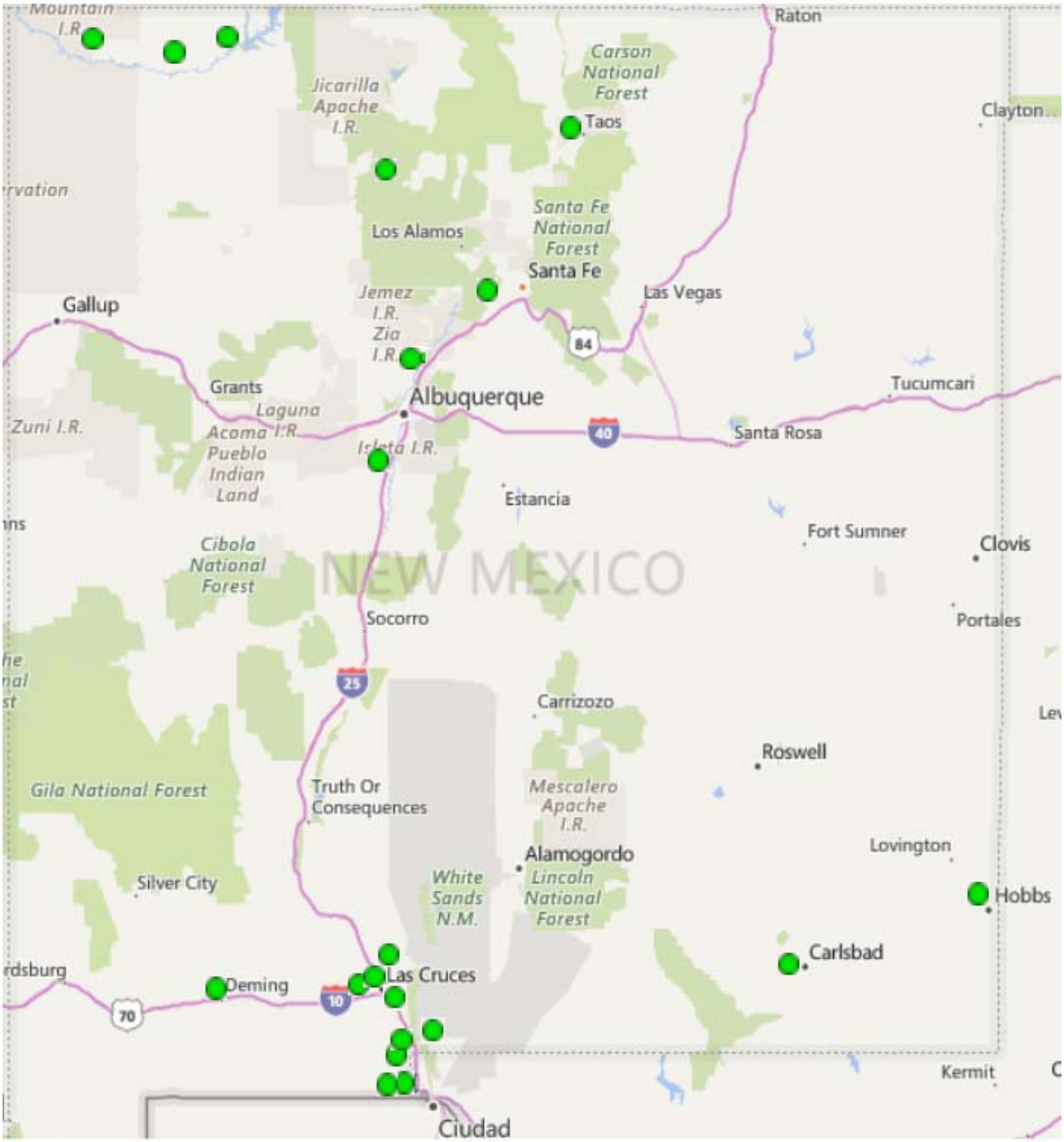


Figure 1

The Bureau's air monitoring network for 2018 consists of the sites and monitors listed in Network Elements Spreadsheet. All site changes (if any) which have occurred or plan to take place in 2018 are included along with any network modifications for 2018. Figure-1 is an overview of the state's and EPA's designation of Air Quality Control Regions (AQCR's). Figure-2 depicts AQB's current monitoring network and shows the locations of monitoring sites as of 2018. The number of monitoring locations operated by the State remained unchanged at 20 sites.



Monitoring Network Locations
Figure 2

Population of Metropolitan Statistical Areas (MSA's)

Albuquerque MSA	Population
*Bernalillo County	676,773
Sandoval County	142,507
Torrance County	15,506
Valencia County	75,940
Total	910,726
El Paso-Las Cruces MSA	Population
Doña Ana County	215,579
Farmington MSA	Population
San Juan County	126,926
Santa Fe MSA	Population
Santa Fe County	148,750
Carlsbad-Artesia & Hobbs CBSA	Population
Eddy County	56,997
Lea County	68,759
Total	125,756
Taos CBSA	Population
Taos County	32,795

*NMED has no air monitoring stations in Bernalillo county due to the City of Albuquerque having its own monitoring group which covers the county.

Above population statistics based on US Census Bureau 2017 data.

Based on the most current population NMED's Air Quality Bureau meets the air monitoring network requirements set forth in 40 CFR Part 58 Appendices A through E.

2.1 Nitrogen Dioxide (NO_2)

The Bureau operates seven air monitoring sites in the network for Nitrogen Dioxide. Three in AQCR-1 which are located in San Juan County, two in AQCR-5, one being in Eddy County and the second in Lea County and two in AQCR-6 both of which operate in Doña Ana County.

Nitrogen Dioxide (NO_2) Air Quality Control Region 1 (EPA Region 014)

The Bureau operates three air monitoring sites in AQCR-1 for Nitrogen Dioxide which are located in San Juan County consisting of the Substation, Bloomfield, and Navajo Lake sites. Figure 3 below indicates the location of the monitoring sites.

Figure 3

Substation Site AQS #: 35-045-1005:
Substation NO_2 Parameter 42602, Method 074, POC 2
The Bureau continues to operate the NO_2 monitor at the Substation air monitoring site. No changes occurred in 2018.

Bloomfield Site AQS #:35-045-0009:
Bloomfield NO_2 Parameter 42602, Method 074, POC 1
The Bureau continues to operate the NO_2 monitor at the Bloomfield air monitoring site. No changes occurred in 2018.

Navajo Lake Site AQS# 35-045-0018:
Navajo Lake NO_2 Parameter 42602, Method 074, POC 2
The Bureau continues to operate the NO_2 monitor at the Navajo Lake air monitoring site. No changes occurred in 2018.

Nitrogen Dioxide (NO_2) Air Quality Control Region 5 (EPA Region 155)
The Bureau operates two air monitoring sites in AQCR-5, located in Eddy County, and Lea County consisting of the Carlsbad and Hobbs sites. Figure 4 below indicates the location of the monitoring sites.

Figure 4

Carlsbad AQS #: 35-015-1005:

Carlsbad NO_2 Parameter 42602, Method 074, POC 1

The Bureau continues to operate the NO_2 monitor at the Carlsbad air monitoring site. No changes occurred in 2018.

Hobbs Jefferson AQS #: 35-025-0008:

Hobbs NO_2 Parameter 42602, Method 074, POC 2

The Bureau continues to operate the NO_2 monitor at the Hobbs air monitoring site. No changes occurred in 2018.

Air Quality Control Region 6 (EPA Region 153)

The Bureau operates nine air monitoring sites in AQCR-6, located in Doña Ana County. Two of the nine monitoring sites, Desert View and Santa Teresa monitor for NO_2. Figure 5 below indicates the location of the monitoring sites.

Figure 5

Desert View AQS #: 35-013-0021:
Desert View NO_2 Parameter 42602, Method 074, POC 2
The Bureau continues to operate the NO_2 monitor at the Desert View air monitoring site. No changes occurred in 2018.

Santa Teresa AQS #: 35-013-0022:
Santa Teresa NO_2 Parameter 42602, Method 074, POC 2
The Bureau continues to operate the NO_2 monitor at the Santa Teresa air monitoring site. No changes occurred in 2018.

2.2 Ozone (O_3)

The Bureau operates fourteen air monitoring sites in the network for Ozone, seven in northern New Mexico and seven in southern New Mexico. In the northern half of the state there are three sites in AQCR-1 which are located in San Juan County, two sites in AQCR-2, one being in Sandoval County and the second in Valencia County, and two sites in AQCR-3, one in Santa Fe County and the second in Rio Arriba County. In the southern half of the state, there are two sites in AQCR-5, one in Lea County and the second in Eddy County, and five sites in AQCR-6 which are located in Doña Ana County. Figure 6 below indicates the location of the northern monitoring sites and Figure 7 indicates the location of the southern monitoring sites.

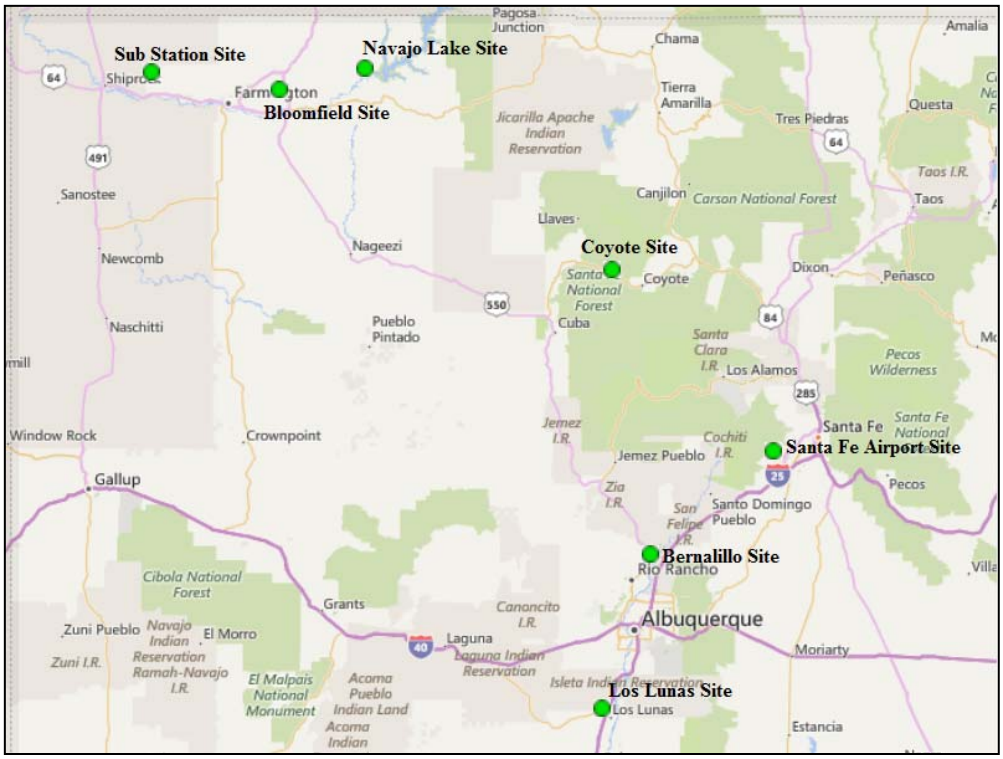


Figure 6

Figure 7

Ozone (O_3) Air Quality Control Region 1 (EPA Region 014)

The Bureau operates three air monitoring sites in AQCR-1 for Ozone which are located in San Juan County consisting of the Substation, Bloomfield, and Navajo Lake sites. Figure 8 indicates the location of the monitoring sites.

Figure 8

Substation Site AQS #: 35-045-1005:

Substation O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O_3 monitor at the Substation air monitoring site. No changes occurred in 2018.

Bloomfield Site AQS #:35-045-0009:

Bloomfield O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O_3 monitor at the Bloomfield air monitoring site. No changes occurred in 2018.

Navajo Lake Site AQS# 35-045-0018:

Navajo Lake O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the O_3 monitor at the Navajo Lake air monitoring site. No changes occurred 2018.

Ozone (O_3) Air Quality Control Region 2 (EPA Region 152)

The Bureau operates two ozone air monitoring sites in AQCR-2, one located in Sandoval County, and the second in Valencia County consisting of the Bernalillo and Los Lunas sites respectively. Figure 9 indicates the location of the Bernalillo and Los Lunas sites.

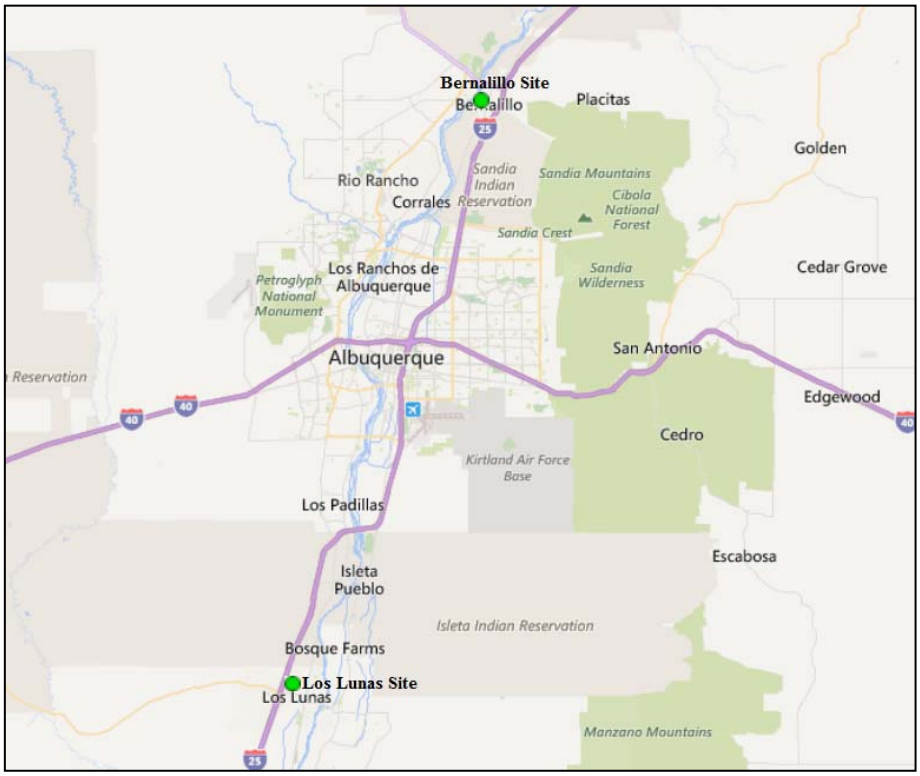


Figure 9

Bernalillo (DOT Yard) Site AQS#: 35-043-1001:

Bernalillo O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Bernalillo air monitoring site. EPA Region-VI has noted that this site is not required due to the City of Albuquerque (COA) currently operating more than the required Ozone sites for the Albuquerque MSA. However, NMED had requested to continue operating the O_3 monitor at Bernalillo and provided an explanation for continuing ozone monitoring in the Five-Year Network Assessment. NMED will continue collaborating with EPA Region-VI on appropriateness of continuing operating the Bernalillo site. No changes occurred in 2018.

Los Lunas AQS #: 35-061-0008:

Los Lunas O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Los Lunas air monitoring site. No changes occurred in 2018.

Ozone (O_3) Air Quality Control Region 3 (EPA Region 157)

The Bureau operates two ozone air monitoring sites in AQCR-3 located in Santa Fe County and Rio Arriba County consisting of the Santa Fe Airport and Coyote Ranger District sites. Figure 10 indicates the location of the two sites.

Figure 10

Santa Fe Airport AQS #: 35-049-0021:
Santa Fe Airport O_3 Parameter 44201, Method 047, POC 1
The Bureau continues to operate the Ozone monitor at the Santa Fe Airport air monitoring site. No changes occurred in 2018.

Coyote Ranger District AQS #: 35-039-0026:
Coyote Ranger District O_3 Parameter 44201, Method 047, POC 1
The Bureau continues to operate the Ozone monitor at the Coyote Ranger District air monitoring site. No changes occurred in 2018.

Ozone (O_3) Air Quality Control Region 5 (EPA Region 155)

The Bureau operates two ozone air monitoring sites in AQCR-5, located in Eddy County, and Lea County consisting of the Carlsbad and Hobbs sites. Figure 11 indicates the location of the two sites.

Figure 11

Carlsbad AQS #: 35-015-1005:

Carlsbad O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Carlsbad air monitoring site. No changes occurred in 2018.

Hobbs Jefferson AQS #: 35-025-0008:

Hobbs Jefferson O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Hobbs air monitoring site. No changes occurred in 2018.

Ozone (O_3) Air Quality Control Region 6 (EPA Region 153)

The Bureau operates a total of eight air monitoring sites in AQCR-6. Five of those sites monitor for ozone consisting of the Chaparral, Desert View, La Union, Santa Teresa, and Solano sites. Figure 12 indicates the location of the ozone monitoring sites.

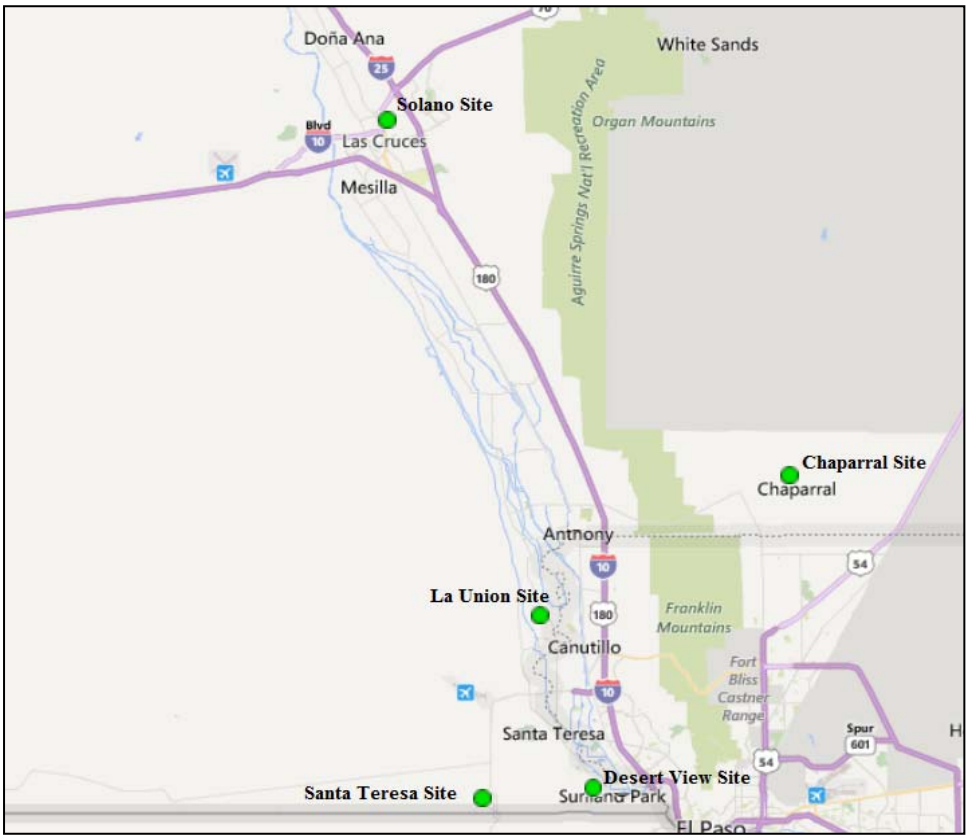


Figure 12

Chaparral AQS #: 35-013-0020:

Chaparral O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Chaparral air monitoring site. No changes occurred in 2018.

Desert View AQS #: 35-013-0021:

Desert View O_3 Parameter 44201, Method 047, POC 1

The Bureau continues to operate the Ozone monitor at the Desert View air monitoring site. No changes occurred in 2018.

La Union AQS #: 35-013-0008:

La Union O_3 Parameter 44201, Method 047, POC 2

The Bureau continues operating the Ozone monitor at La Union, no changes occurred in 2018.

Santa Teresa AQS #: 35-013-0022:

Santa Teresa O_3 Parameter 44201, Method 047, POC 1

The Santa Teresa site and surrounding area had been undergoing major commercial growth over the last several years due to the New Mexico Governor's economic development initiative for Santa Teresa as a commercial zone between Mexico and the US. The surrounding area has become more industrial due to the Union Pacific Railroad's Intermodal facility as well as freight storage and transport facilities. Recently growth in the area has leveled off, but expected to continue in the near future. NMED-AQB had requested to relocate the Santa Teresa site approximately a half mile east of

its present location due to siting and safety concerns from vehicular traffic, trespassing and loitering. However, these concerns within the vicinity of the Santa Teresa site have been relocated to the El Paso Border Crossing. Therefore, the Bureau has rescinded the relocation request. The Bureau continues to operate the Ozone monitor at Santa Teresa, no changes occurred in 2018.

Solano Road AQS #: 35-013-0023:

Solano Road O_3 Parameter 44201, Method 047, POC 1

The Bureau continues operating the Ozone monitor at Solano Road. NMED had concerns that nearby trees could possibly affect the siting criteria. The NMED QA section performed their annual siting criteria to verify site compliance. It was determined on March 8, 2018 that the site meets compliance criteria. No changes occurred in 2018.

2.3 Sulfur Dioxide (SO_2)

The Bureau operates two air monitoring sites in the network for Sulfur Dioxide. Both sites are located in the northern half of the state in AQCR-1 which is in San Juan County consisting of the Sub Station and Bloomfield air monitoring sites. Figure 13 below indicates the location of the SO_2 monitoring sites.

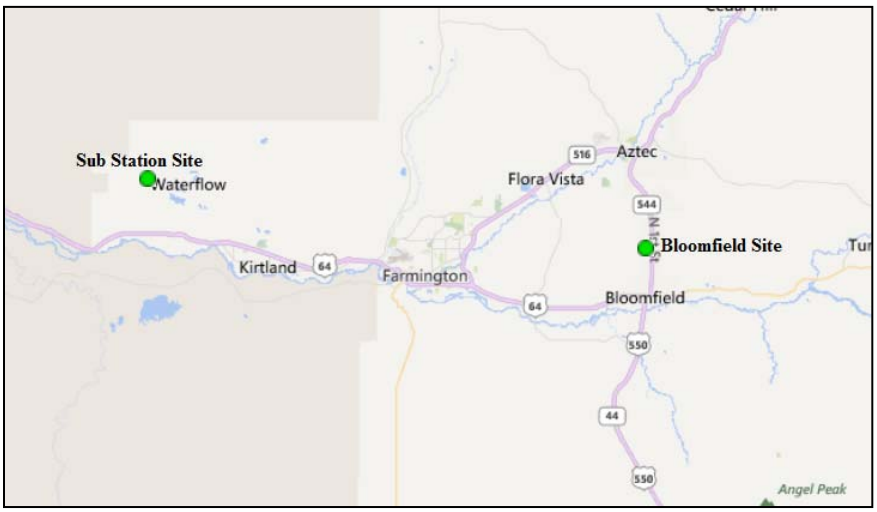


Figure 13

Sulfur Dioxide (SO_2) Air Quality Control Region 1 (EPA Region 014)

Substation SO_2 AQS #:35-045-1005

Substation SO_2 Parameter 42401, Method 060, POC 3

The Bureau continues to operate the SO_2 monitor at the Substation air monitoring site. No changes occurred in 2018.

Bloomfield SO_2 AQS #:35-045-0009

Bloomfield SO_2 Parameter 42401, Method 060, POC 3

The Bureau continues to operate the SO_2 monitor at the Bloomfield air monitoring site. No changes 2018.

2.4 Particulate Matter $PM_{2.5}$ Non-Continuous Federal Reference Method (FRM)

The Bureau currently operates three Method 145 $PM_{2.5}$ FRM Partisol samplers within the air monitoring network, all three are in Doña Ana County which is AQCR-6. The Desert View monitoring site is the designated co-location site for the FRM 145 samplers operating in the network. All three samplers operate on a one in every three-day schedule. Though technically the co-located Desert View site sampler operates on a one in every twelve-day schedule. AQB operates this sampler on a one in every three-day schedule due to power outages experienced in the past which caused the co-located sampler filter to be voided. Operating the co-located sampler on a one in every three-day schedule prevents sample loss. Figure 14 below indicates the location of the non-continuous FRM $PM_{2.5}$ monitoring sites.

Figure 14

Particulate Matter $PM_{2.5}$ (FRM) Air Quality Control Region 6 (EPA Region 153)

Desert View AQS #: 35-013-0021:
Desert View $PM_{2.5}$ FRM (Primary) Parameter 88101, Method 145, POC 2
Desert View $PM_{2.5}$ FRM (Co-Located) Parameter 88101, Method 145, POC 3

The Desert View site is designated as the bureau's co-location site using the Thermo 2025i series Partisol $PM_{2.5}$ samplers. This site was chosen for co-location due to the area experiencing residential and commercial development nearby in Santa Teresa and on the Mexican side along the US/Mexican border which is just one mile south of the Desert View site. No changes occurred in 2018.

Anthony AQS#: 35-013-0016:
Anthony $PM_{2.5}$ FRM Parameter 88101, Method 145, POC 2

The Bureau installed a co-located Partisol 2025i FRM $PM_{2.5}$ sampler at the Anthony air monitoring site on May 23, 2017 with sampling starting on June 3, 2017. NMED has a BAM-1020 FEM $PM_{2.5}$ operating at the site and added the Partisol sampler to meet requirements of 40 CFR Part 58 App. A.

2.5 Particulate Matter $PM_{2.5}$ Continuous

2.5.1 Particulate Matter $PM_{2.5}$ Continuous (TEOM)

NMED-AQB completed discontinuation and replacement of the aging TEOM $PM_{2.5}$ samplers within the network. Method 170 BAM-1020 $PM_{2.5}$ FEM samplers were installed per EPA approval letter dated December 7, 2016 referring to the bureau's Five-Year Network Assessment and 2016 Annual Network Plan technical comments. The last TEOM sampler was replaced in November 2017 with a BAM-1020 sampler at the Taos site. AQS has been updated to reflect the discontinuation of the TEOM and installation of the BAM sampler.

Particulate Matter $PM_{2.5}$ Continuous Air Quality Control Region 3 (EPA Region 157)

Taos AQS #: 35-055-0005:

Taos $PM_{2.5}$ Continuous Parameter 88502, Method 701, POC 3

The Bureau discontinued operating the TEOM $PM_{2.5}$ sampler at the Taos air monitoring site per EPA approval letter date December 7, 2016 referring to NMED's 2015 Five-Year Network Assessment and 2016 Annual Network Plan. The sampler was replaced with a Method 170 BAM-1020 $PM_{2.5}$ sampler Parameter 88101, Method 170, POC 1 on November 27. 2017. The last date of when data was submitted into AQS was November 27, 2017.

2.5.2 Particulate Matter $PM_{2.5}$ Continuous (BAM-1020 Sampler)

The Bureau currently operates five Method 170 BAM-1020 $PM_{2.5}$ samplers within the air monitoring network designated as SLAMS. Two of the five samplers are located in southern New Mexico's Doña Ana County at the Anthony and Las Cruces Office sites. The third is located in Lea County at the Hobbs monitoring sites. The remaining two samplers are located in northern New Mexico with the fourth at the Santa Fe Airport monitoring site and the fifth at the Taos monitoring site. A sixth BAM unit will be added to the monitoring network as the Bureau recently received approval for sampler installation at the Santa Teresa site per EPA letter dated April 2, 2018. Figure 15 indicates the location of the Santa Fe Airport and Taos monitoring sites and Figure 16 indicates the Anthony, Las Cruces Office and Hobbs monitoring sites.

Figure 15

Figure 16

Air Quality Control Region 3 (EPA Region 157)

Santa Fe Airport AQS #: 35-049-0021:

Santa Fe Airport $PM_{2.5}$ Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 $PM_{2.5}$ sampler. No changes occurred in 2018.

Taos AQS #: 35-055-0005:

Taos $PM_{2.5}$ Continuous Parameter 88101, Method 170, POC 1

The Bureau installed a Met-One BAM-1020 $PM_{2.5}$ sampler Parameter 88101, Method 170, POC1 on November 27, 2017. This BAM operates as a SLAMS sampler per EPA approval letter dated December 7, 2016 referring to NMED's 2015 Five-Year Network Assessment and 2016 Annual Network Plan. This sampler replaced the aging TEOM $PM_{2.5}$ sampler. Data collection in AQS started on December 4, 2017 after the required 72-hour back ground test. No additional changes are anticipated for 2018.

Air Quality Control Region 5 (EPA Region 155)

Hobbs Jefferson AQS#: 35-025-0008:

Hobbs Jefferson $PM_{2.5}$ Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 $PM_{2.5}$ sampler. No changes occurred in 2018.

Air Quality Control Region 6 (EPA Region 153)

Anthony AQS #: 35-013-0016:

Anthony $PM_{2.5}$ Continuous Parameter 88101, Method 170, POC 2

The Bureau continues to operate the Met-One BAM-1020 $PM_{2.5}$ sampler. The Anthony site is the designated co-location site for the FEM Method 170 samplers operating in the network. No changes occurred in 2018.

Las Cruces Office AQS #: 35-013-0025:

Las Cruces $PM_{2.5}$ Continuous Parameter 88101, Method 170, POC 1

The Bureau continues to operate the Met-One BAM-1020 $PM_{2.5}$ sampler and is the Bureau's Regional Transport particulate site. No changes occurred in 2018.

Santa Teresa AQS #: 35-013-0022:

Santa Teresa $PM_{2.5}$ Continuous Parameter 88101, Method 170, POC 1

The Bureau submitted a separate request to EPA Region 6 for the installation of a BAM-1020 $PM_{2.5}$ continuous sampler which was approved on April 2, 2018. A previous request was made in AQB's 2014 ANR, but due to siting and safety concerns at that time it was not approved. Since then the area has improved significantly and siting issues resolved. AQB anticipates the installation and operation of the sampler by the end of the current 2018 fiscal year.

2.6 Particulate Matter PM_{10} Non-Continuous Federal Reference Method (FRM)

The Bureau operates one non-continuous Thermo Partisol 2025i FRM sampler in the monitoring network as the primary for PM_{10} particulate matter. The sampler meets the EPA requirement set forth in 40CFR Part58 Appendix D based on population category and concentration of particulate matter 10 microns or less in aerodynamic diameter (PM_{10}). This sampler is currently located at the Anthony air monitoring site which also contains a Met-One BAM-1020 PM_{10} continuous sampler as the assigned co-located sampler for the PM_{10} FRM sampler per EPA requirements.

Air Quality Control Region 6 (EPA Region 153)

Anthony PM_{10} FRM Parameter 81102, Method 127, POC 1

The Bureau continues to operate the Partisol 2025i non-continuous sampler as the designated primary sampler for PM_{10} particulate matter. Figure 17 indicates the location of the PM_{10} monitoring site.

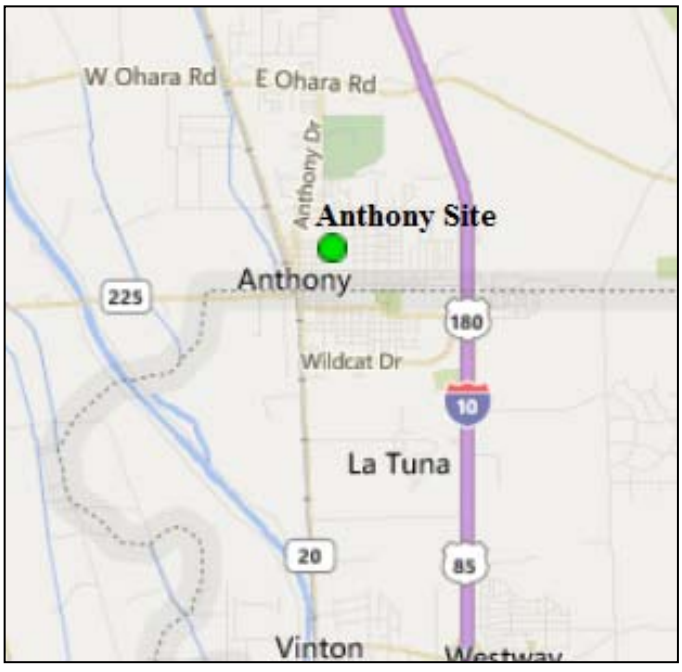


Figure 17

2.7 Particulate Matter PM_{10} Continuous (BAM Sampler)

The Bureau operates seven Method 122 BAM-1020 PM_{10} continuous samplers throughout the monitoring network. One of the seven BAM-1020 PM_{10} samplers is operating as a Special Purpose Monitor (SPM) in the northern monitoring network which was recently relocated from the 1ZB Bloomfield site to the 1H Sub Station site. Figure 18 indicates the location of the northern New Mexico monitoring site. Six BAM-1020 PM_{10} continuous samplers are located and operating in the Bureau's southern network as SLAMS monitors. Figure 18 indicates the locations of where the BAM-1020 PM_{10} samplers in the southern network.

PM_{10} Air Quality Control Region 1 (EPA Region 014)

Sub Station Site AQS #:35-045-1005:

Sub Station PM_{10} Continuous Parameter 81102, Method 122, POC 2

The Bureau operates a Met-One BAM-1020 FEM PM_{10} sampler as a Special Purpose Monitor (SPM) to obtain representative sampling of PM_{10} for San Juan County per approval of EPA letter, dated April 14, 2015 referring to NMED's 2014 Annual Ambient Air Monitoring Network Plan technical comments. The sampler was originally installed on May 5, 2016 and data input into AQS started July 30, 2016 at the 1ZB Bloomfield monitoring site. However, EPA expressed concerns during the Technical Services Audit (TSA) conducted in September 2016 with regards to nearby sand and asphalt piles that could potentially induce bias PM_{10} data. NMED in collaboration with EPA Region-VI relocated the PM_{10} sampler to the 1H Sub Station site on November 20, 2017. Data input into AQS started on December 1, 2017 after the manufacturers' recommended warm-up period and 72-hour background test.

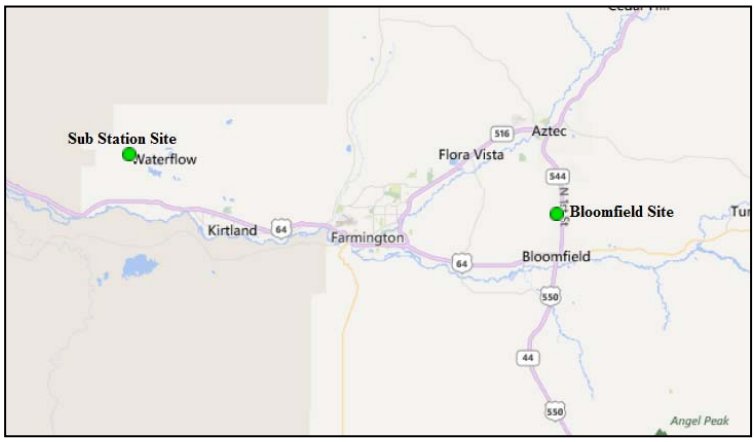


Figure18

PM_{10} Air Quality Control Region 6 (EPA Region 153)

Anthony AQS #: 35-013-0016:

Anthony PM_{10} Continuous Parameter 81102, Method 122, POC 2

The Bureau continues to operate the Met-One BAM-1020 FEM PM_{10} continuous sampler. No changes occurred in 2018.

Chaparral AQS #: 35-013-0020:
Chaparral PM_{10} Continuous Parameter 81102, Method 122, POC 2
The Bureau continues to operate the Met-One BAM-1020 FEM PM_{10} continuous sampler. No changes occurred in 2018.

Desert View AQS #: 35-013-0021:
Desert View PM_{10} Continuous Parameter 81102, Method 122, POC 2
The Bureau continues to operate the Met-One BAM-1020 FEM PM_{10} continuous sampler. No changes occurred in 2018.

Holman Road AQS #: 35-013-0019:
Desert View PM_{10} Continuous Parameter 81102, Method 122, POC 2
The Bureau continues to operate the Met-One BAM-1020 FEM PM_{10} continuous sampler. No changes occurred in 2018.

West Mesa AQS #: 35-013-0024:
West Mesa PM_{10} Continuous Parameter 81102, Method 122, POC 2
The Bureau continues to operate the Met-One BAM-1020 FEM PM_{10} continuous sampler. No changes occurred in 2018.

PM_{10} Air Quality Control Region 7 (EPA Region 012)

Deming Airport AQS #: 35-029-0003:
Deming Airport PM_{10} Continuous Parameter 81102, Method 122, POC 2
The Bureau continues to operate the Met-One BAM-1020 FEM PM_{10} continuous sampler. No changes occurred in 2018.

Figure 19

3.0 Other Projects

There are three other projects continuing in New Mexico and are supported by NMED/AQB staff.

1. Northern air monitoring staff continue with the NADP-sponsored project to collect passive ammonia monitoring data in San Juan County, New Mexico. This project will continue as long as federal funds are available. Ammonia is a precursor of fine particulate matter which adversely affects public health and visibility. This continued study will augment the baseline data collected in 2007 to assess any significant changes in ambient ammonia levels.

2. Using FY17 Border Grant funds, NMED is collecting micro-inventory of potential fugitive dust sources, including the identification of best available control measures (BACM) in order to develop a dust mitigation plan for PM_{10} in Doña Ana and Luna counties.

3. NMED's northern air monitoring staff is also continuing with the Passive Mercury study started in August 2017. Sampling is being conducted at NMED's monitoring sites in the four corners area consisting of the (1NL) Navajo Lake, Farmington Regional Airport and (1H) Sub Station air monitoring sites. This two-year study is expected to end August 2019.

4.0 Summary

The intention of the Bureau is to continue to focus on pollutants of concern while also striving to continue to serve the public health needs and to satisfy the expectations of the New Mexico communities. The Bureau will inform Region VI staff early in the process of any plans to make changes or modifications to the ambient air monitoring network, other than those described in this review, to ensure that state and federal priorities continue to be aligned.

4.1 Network Modifications During FY2018

During Fiscal Year 2018 which occurred from July 1, 2017 through June 30, 2018 the Bureau had only two minor changes throughout the monitoring network by discontinuing and replacing aging/obsolete monitoring equipment, or relocating monitoring equipment. Changes occurred at two monitoring sites which consisted of the following with the modification listed below.

AQCR-1
Bloomfield PM_{10} AQS #:35-045-0009
NMED discontinued operating the BAM-1020 PM_{10} Federal Equivalent Method (FEM) particulate sampler on November 20, 2017. This was due to EPA concerns of the nearby sand and asphalt piles that could have potentially caused bias in PM_{10} data. The sampler was relocated to the 1H Sub Station site on November 20, 2017.

AQCR-1
Sub Station PM_{10} AQS#: 35-045-1005
NMED installed the BAM-1020 PM_{10} Federal Equivalent Method (FEM) particulate sampler as a Special Purpose Monitor that was originally located at the Bloomfield air monitoring site. Data input

into AQS started on December 1, 2017 after the manufacturer recommended warm-up period and 72-hour background test.

Taos AQS #: 35-055-0005
NMED installed a BAM-1020 $PM_{2.5}$ Federal Equivalent Method (FEM) particulate sampler parameter 88101, Method 170, POC 1 in November 2017. This sampler replaced the aging Method 701, TEOM $PM_{2.5}$ sampler.

4.2 Pending System Modifications During FY2018

During Fiscal Year 2018 NMED has been in the process of retrofitting all 18 meteorological towers in the monitoring network with a manual winch controlled retractable boom. This will allow for one-person operation when conducting required audits and or maintenance/repair work on the meteorological sensors, and provide for additional safety as it will not require physically lowering and raising the meteorological tower. Additionally, the current Air Pollution Instruments (API) model T-700 Multi-Gas Calibrators will be replaced with Thermo Environmental Instruments (TEI) model 146i Multi-Gas Calibrators at the 14 air monitoring sites that contain or require calibration units. Other anticipated network modifications to occur in FY2018 are listed below:

AQCR-2
Bernalillo (DOT Yard) Site AQS#: 35-043-1001
NMED continues discussion with EPA to install a Met One BAM-1020 $PM_{2.5}$ sampler due to the Bureau receiving numerous complaints from citizens in the nearby Village of Placitas housing community which is adjacent to four aggregate facilities. These citizens' complaints concern the continued residential and commercial growth, as well as increased vehicular traffic along the I-25 and NM-550 Highway corridor.

AQCR-6
Santa Teresa (Santa Teresa Border Crossing) AQS#: 35-013-0022
NMED-AQB is requested the installation of a BAM-1020 $PM_{2.5}$ FEM sampler at the Santa Teresa air monitoring site, AQS number 35-013-0022 in Santa Teresa, NM. NMED-AQB had originally requested installation of the sampler in the 2014 ANR. However, due to AQB concerns with surrounding area not meeting siting criteria at the time and safety concerns for AQB personnel it was not approved by EPA Region-6. Additionally, AQB was also considering relocating the Santa Teresa site for these concerns. However, since then security in the area has improved significantly as civilian vehicular traffic has been diverted to the El Paso border crossing. The annual siting criteria report indicates that the site meets the criteria set forth in 40CFR58 Appendix E. NMED-AQB recently received approval for sampler installation at the Santa Teresa site per EPA letter dated April 2, 2018.

5.0 Addressing New Monitoring Requirements in Monitoring Network

5.1 Lead (Pb)

Two federal criteria have been set up for Pb monitoring:

- Source-oriented – For sources over 0.5 Tons per year.
- "Non-source"-oriented in every urban area with NCore monitoring sites, that have a population of 500,000 or more.

Based on these criteria, no Pb monitors are required in regions under NMED/AQB jurisdiction.

5.2 Nitrogen Dioxide

Two federal criteria have been set up for NO_2 monitoring:

- Near-road NO_2 monitoring; 1 micro-scale site would be required in Core Based Statistical Areas (CBSA) $\geq$ 1 million in population at a location of expected highest hourly NO_2 concentrations sited near a major road with high Annual Average Daily Traffic (AADT) counts.
- Community-wide; required in CBSAs $\geq$ 1 million in population at a location of expected highest NO_2 concentrations representing neighborhood or larger (urban) spatial scale.

Based on these criteria, no new NO_2 monitors are required in the state's air quality control regions under NMED/AQB jurisdiction.

5.3 Sulfur Dioxide

Two federal criteria have been set up for SO_2 monitoring:

- Based on population per CBSA and amount of SO_2 emissions within that CBSA, that is, the Population Weighed Emissions Index (PWEI) and
- Based on individual state contribution to national SO_2 inventory in the 2005 National Emissions Inventory (NEI).

Based on the PWEI criteria, NMED/AQB would not need to deploy any new monitors. Based on the 2005 NEI criteria, NMED/AQB would need one monitor. This requirement is already being complied with by virtue of the Substation site.

SO_2 Data Requirements Rule

Per EPA Requirement that by July 1, 2016, each air agency was required to identify, for each source area on the list, the approach it will use to characterize air quality to help characterize sources listed as 2,000 tpy or larger, air agencies were to indicate by July 1, 2016 one of the three options to use which were:

Option 1: Ambient air monitoring for a source
Option 2: Air quality modeling for a source

Option 3: Federally enforceable emissions limits applicable to sources less than 2,000 tpy

NMED chose the second option, but this requires operating both SO_2 monitors in the network (1H Sub Station site and the 1ZB Bloomfield site) in order to provide data for modeling. The most recent report shows that our only source of concern, the San Juan Generating Station, has reduced its SO_2 emissions each year and that 2016 and 2017 are under the modeled years' emissions in all categories (average hourly, max hourly, annual tons, and 99th percentile hourly max). The report includes a back trajectory for the one day in which the monitor near the site experienced greater than 75 ppb. Overall, NMED is recommending that no new modeling should be required, since emissions are lower and two of the four units are now shut down permanently. Due to the shut-down of the two boiler units in December 2017, NMED anticipates that the two SO_2 monitors in San Juan county can be discontinued within two or three years.

5.4 Ozone

During FY2018, several New Mexico ozone monitoring sites exceeded the 8-hour standard. This is mostly due to hot and dry conditions exhibited during the summer months, typically June through mid-September in which a majority of exceedances occurred. However, based on EPA's 3-year design values, New Mexico meets the NAAQS for ozone with the exception of Las Cruces. Although the exceedance did not encompass all of Las Cruces, rather only the City of Sunland Park which is along the US/Mexican border.

Region 6 8-hr Ozone Exceedance Day Update											
	preliminary data	(through November 1, 2017)									
		Applicable Standard = 70 ppb									
State/Cities	8-hour Ozone Year to Date Exceedance Days	Max. exceedance levels April 1st - September 30							Year to Date Air Quality Index Category Totals		
		F	S	S	M	T	W	R	# Unhealthy for Sensitive Groups	# Unhealthy	# Very Unhealthy
New Mexico	# > 70 ppb										
Albuquerque	4								4		
San Juan Co.	5								5		
Southern Dona Ana Co.	23								22	1	
Carlsbad/Hobbs	12								12		
Notes: 71 - 85 ppb = Unhealthy for Sensitive Groups; 86 - 105 ppb = Unhealthy; >= 106 ppb = Very Unhealthy (based on applicable 70 ppb standard)											

Current EPA 3-Year Ozone Design Values 2014 through 2016

State Name	County Name	State FIPS	County FIPS	EPA Region	AQS Site ID	2014-2016 Design Value (ppm)[1,2]	Meets NAAQS?	CBSA Name
New Mexico	Bernalillo	35	001	6	350010023	0.065	Yes	Albuquerque, NM
New Mexico	Dona Ana	35	013	6	350130021	0.072	No	Las Cruces, NM
New Mexico	Eddy	35	015	6	350151005	0.067	Yes	Carlsbad-Artesia, NM
New Mexico	Lea	35	025	6	350250008	0.066	Yes	Hobbs, NM
New Mexico	Rio Arriba	35	039	6	350390026	0.064	Yes	Espanola, NM
New Mexico	Sandoval	35	043	6	350431001	0.064	Yes	Albuquerque, NM
New Mexico	San Juan	35	045	6	350450018	0.066	Yes	Farmington, NM
New Mexico	Santa Fe	35	049	6	350490021	0.063	Yes	Santa Fe, NM
New Mexico	Valencia	35	061	6	350610008	0.064	Yes	Albuquerque, NM

The 2008 O_3 NAAQS Good Neighbor SIP and 2015 O_3 NAAQS infrastructure SIP are both due to EPA by October 1, 2018. NMED is not proposing to adopt any additional control measures, we will provide certifications that our current SIP is sufficient to implement and enforce the NAAQS.

NMED's Planning section has begun to develop control measures for areas that are within 95% of the NAAQS.

6.0 Other Issues

At present all NMED-AQB Monitoring Section positions are filled. However, we recently received notice of resignation from the monitoring section's northern Environmental Scientist Specialist – Supervisor which will be filled before the end of the year. Additionally, an Environmental Scientist-Specialist – Advanced (ESS-A) position in the monitoring section as well, will become vacant during the current calendar year due to attrition.

A draft of this document was made available to the public June 1 through June 30, 2018 which was posted on our web page at http://www.env.nm.gov/air-quality/. No comments pertaining to this document were received from the public during the posting time frame.

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TABLE 1
New Mexico Monitoring Network in 2018

Continuous Monitors & Non-Continuous Monitors

Site AQS #	Site Name	Station Type	Site Address	Latitude	Longitude	Pollutants Measured	Analysis Method	Operating Schedule	Is site proposed to be removed/moved within next 18 months?	Monitoring Objective	NAAQS Comparable ?	msa/cbsa/csa represented	Spatial Scale
35-045-1005	1H Substation	SLAMS	Shiprock Electrical Substation, Waterflow, NM 87421	36.7976	-108.4801	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	Farmington MSA	Regional
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		General Background	Yes	Farmington MSA	Regional
		SLAMS				Sulfur Dioxide	Pulsed Fluorescence	Continuous		Source Oriented	Yes	Farmington MSA	Regional
		SPM				PM_{10}	Continuous; BAM-1020	Continuous		General Background	Yes	Farmington MSA	Regional
35-045-0009	12 B Bloomfield	SLAMS	2200 N 1st Street, Bloomfield, NM 87413	36.7421	-107.9774	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	Farmington MSA	Neighborhood
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		General Background	Yes	Farmington MSA	Neighborhood
		SLAMS				Sulfur Dioxide	Pulsed Fluorescence	Continuous		Source Oriented	Yes	Farmington MSA	Neighborhood
35-045-0018	1NL Navajo Lake	SLAMS	423A Highway 539, Navajo Dam, NM 87419	36.8097	-107.6514	Ozone	U.V. Photometric	Continuous	No	Regional Transport	Yes	Farmington MSA	Middle
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		Regional Transport	Yes	Farmington MSA	Middle
35-061-0008	2LL Los Lunas	SLAMS	1000 W. Main St, Los Lunas, NM 87031	34.8147	-106.7410	Ozone	U.V. Photometric	Continuous	No	Population Exposure	Yes	Albuquerque MSA	Neighborhood
35-043-1001	2ZJ Bernalillo	SLAMS	600 Oak Street, Bernalillo NM 87004	35.2998	-106.5470	Ozone	U.V. Photometric	Continuous	No	Population Exposure	Yes	Albuquerque MSA	Neighborhood
35-039-0026	3CRD Coyote Ranger District	SLAMS	21 New Mexico 96, Coyote, NM, 87012	36.1877	-106.6984	Ozone	U.V. Photometric	Continuous	No	Regional Transport	Yes	Albuquerque-Santa Fe-Las Vegas CSA	Regional
35-049-0021	3SFA Santa Fe Airport	SLAMS	2001 Aviation Dr, Santa Fe, NM 87507	35.6198	-106.0797	Ozone	U.V. Photometric	Continuous	No	Population Exposure	Yes	Santa Fe MSA	Neighborhood
		SLAMS				$PM_{2.5}$	Continuous; BAM-1020	Continuous		Population Exposure	Yes	Santa Fe MSA	Neighborhood
35-055-0005	3ZD Taos	SLAMS	123 Camino de Santiago Fire Station, Taos, NM 87571	36.3833	-105.5849	$PM_{2.5}$	Continuous; BAM-1020	Continuous	No	Population Exposure	No	Taos μSA	Neighborhood
35-015-1005	5ZR Carlsbad	SLAMS	2811 Holland St., Carlsbad, NM 88220	32.3840	-104.2640	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	Carlsbad-Artesia, CBSA μSA	Urban
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		General Background	Yes	Carlsbad-Artesia, CBSA μSA	Urban
35-025-0008	5ZS Hobbs Jefferson	SLAMS	2320 N. Jefferson St, Hobbs, NM 88240	32.7268	-103.1230	Ozone	U.V. Photometric	Continuous	No	Population Exposure	Yes	Hobbs CBSA/μSA	Neighborhood
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		Population Exposure	Yes	Hobbs CBSA/μSA	Neighborhood
		SLAMS				$PM_{2.5}$	Continuous; BAM-1020	Continuous		Population Exposure	Yes	Hobbs CBSA/μSA	Neighborhood
35-013-0016	6CM Anthony	SLAMS	705 Church St., Anthony, NM 88021	32.0033	-106.5992	PM_{10}	Sequential FRM	Every 6th Day	No	Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				PM_{10}	Co-Located Continuous; BAM-1020	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				$PM_{2.5}$	Continuous; BAM-1020	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				$PM_{2.5}$	Co-located Sequential FRM	Every 3rd Day		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
35-013-0008	6O La Union	SLAMS	7048 McNutt, La Union, NM 88021	31.9187	-106.6330	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	El Paso-Las Cruces CSA	Urban
35-013-0024	6WM West Mesa	SLAMS	West Mesa Well #46, Las Cruces, NM 88005	32.2781	-106.8649	PM_{10}	Continuous; BAM-1020	Continuous	No	Up Wind Background	Yes	El Paso-Las Cruces CSA	Urban
35-013-0019	6ZL Holman Road	SLAMS	Las Cruces Well #41, Las Cruces, NM 88012	32.4246	-106.6739	PM_{10}	Continuous; BAM-1020	Continuous	No	Population Exposure	Yes	El Paso-Las Cruces CSA	Urban
35-013-0020	6ZK Chaparral	SLAMS	680 McCombs, Chaparral, NM 88081	32.0409	-106.4095	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	Not in an MSA	Urban
		SLAMS				PM_{10}	Continuous; BAM-1020	Continuous		Population Exposure	Yes	Not in an MSA	Neighborhood
35-013-0021	6ZM Desert View	SLAMS	5935A Valle Vista, Sunland Park, NM 88063	31.7961	-106.5839	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				PM_{10}	Continuous; BAM-1020	Continuous		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				$PM_{2.5}$	Sequential FRM	Every 3rd Day		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
		SLAMS				$PM_{2.5}$	Co-located Sequential FRM	Every 3rd Day		Population Exposure	Yes	El Paso-Las Cruces CSA	Neighborhood
35-013-0022	6ZN Santa Teresa	SLAMS	104-2 Santa Teresa Int'l. Blvd., Santa Teresa, NM 88063	31.7881	-106.6826	Ozone	U.V. Photometric	Continuous	No	General Background	Yes	El Paso-Las Cruces CSA	Urban
		SLAMS				Nitrogen Dioxide	Chemiluminescence	Continuous		General Background	Yes	El Paso-Las Cruces CSA	Urban
		SLAMS				$PM_{2.5}$	Continuous; BAM-1020	Continuous		General Background	Yes	El Paso-Las Cruces CSA	Urban
35-013-0023	6ZQ Solano	SLAMS	750 N. Solano Drive, Las Cruces, NM 88001	32.3187	-106.7675	Ozone	U.V. Photometric	Continuous	No	Population Exposure	Yes	El Paso-Las Cruces CSA	Urban
35-013-0025	6Q Las Cruces	SLAMS	2301 Entrada del Sol, Las Cruces, NM 88001	32.3103	-106.7512	$PM_{2.5}$	Continuous; BAM-1020	Continuous	No	Regional Transport	Yes	El Paso-Las Cruces CSA	Neighborhood
35-029-0003	7E Deming Airport	SLAMS	3412 Raymond Reed Blvd., Deming, NM 88030	32.2558	-107.7227	PM_{10}	Continuous; BAM-1020	Continuous	No	Population Exposure	Yes	Deming CBSA/μSA	Neighborhood

All NMED/AQB sites and monitors conform to 40 CFR, Subchapter C, Part 58 appendix A