



**Albuquerque Environmental Health Department  
Air Quality Program  
2020 Annual Network Review**

**May 15, 2020**

## Summary

Federal regulations require state and local agencies that conduct ambient air monitoring for regulatory purposes to submit an Annual Network Review (ANR) to the U.S. Environmental Protection Agency (EPA). ANRs provide detailed information to the public about the monitoring locations and instruments operating in the agency's ambient air monitoring network. The City of Albuquerque Environmental Health Department Air Quality Program (AQP) is an agency that conducts ambient air monitoring for regulatory purposes. AQP has prepared this ANR to meet the federal regulatory requirements at 40 CFR 58.10 and Appendices A through E.

The 2020 ANR details the operations of AQP's monitoring network in CY 2020 and describes the changes that AQP plans over the next 12 months. This ANR includes detailed information about air quality monitors using Federal Reference Methods (FRM), Federal Equivalent Methods (FEM), National (NCORE) Multipollutant monitoring stations, and Chemical Speciation Network (CSN).

This ANR will be made available on May 15, 2020 for a 30-day public inspection and comment period prior to AQP submitting it to the U.S. EPA. If public comments are received, the AQP will provide a response to the comments when the plan is submitted to the U.S. EPA. The final version will be available for download on <http://www.cabq.gov/airquality/air-quality-monitoring/annual-network-review-for-ambient-air-monitoring>.

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## Table of Definitions

**Pollutant** – indicates the pollutant, or set of pollutants, measured by each monitor

**AQI**-Air Quality Index. Think of the AQI as a yardstick that runs from 0 to 500. The higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI value of 50 or below represents good air quality, while an AQI value over 300 represents hazardous air quality. More information about the AQI can be found at <https://www.airnow.gov/aqi/aqi-basics/>.

- CO- carbon monoxide
- Chemical Speciation Network (CSN) – a monitor that measures different kinds of carbon such as black carbon, brown carbon or organic carbon. The quantities of these different species can tell air quality scientists more about the sources contributing to PM<sub>2.5</sub>. The CSN program developed the speciation monitor and suite of lab analysis procedures to identify and quantify the chemical components of PM<sub>2.5</sub>
- NO<sub>2</sub> – nitrogen dioxide
- NO<sub>y</sub> – reactive nitrogen; NO and its oxidation products; a common definition is NO<sub>y</sub> = NO + NO<sub>2</sub> + HNO<sub>3</sub> + NO<sub>3</sub> (aerosol) + NO<sub>3</sub> (radical) + N<sub>2</sub>O<sub>5</sub> + PAN (peroxyacyl nitrates) + other organic nitrates
- Ozone – an unstable molecule consisting of three oxygen atoms
- PM<sub>10</sub> – particles with a diameter of 10 micrometers or less
- PM<sub>2.5</sub> – particles with a diameter of 2.5 micrometers or less, also known as “fine particles”
- SO<sub>2</sub> – sulfur dioxide

**Monitor Type** – This indicates how the monitor is classified in EPA’s Air Quality Subsystem (AQS)

- NCore – monitor operated at a site, which has been accepted into EPA’s national network of long-term multi-pollutant sites.
- SLAMS – State and Local Air Monitoring Stations. SLAMS make up the ambient air quality monitoring sites that are primarily needed for NAAQS comparisons, but may serve other data purposes. SLAMS exclude special purpose monitor (SPM) stations and include NCore, and all other State or locally operated stations that have not been designated as SPM stations.

**Parameter Occurrence Code (POC)** – an integer in the AQS database that labels monitors at a monitoring site. If there are multiple monitors for a given pollutant at a single monitoring site, each monitor will have its own POC.

**Sampling Method** – Indicates how the sample is collected.

- Chemical Speciation Network (CSN) Sampler – a speciation monitor to identify and quantify the chemical components of PM<sub>2.5</sub> via CSN protocol
- Gas Filter Correlation – determines the concentration of carbon monoxide (CO) using a method based on Beer-Lambert law, that relates the absorption of light to the properties of the material through which the light is traveling over a defined distance. In this case, the light is infrared radiation (IR) traveling through a sample chamber filled with gas bearing a varying concentration of CO.
- Gas Phase Chemiluminescence – When a nitric oxide (NO) molecule collides with an ozone molecule, nitrogen (NO<sub>2</sub>) molecule and an oxygen (O<sub>2</sub>) molecule result. The NO<sub>2</sub> molecule is in an excited state, and subsequently emits infrared light that is detected by a photomultiplier tube.
- Gravimetric – A filter is weighed before and after collecting a particulate sample to quantify the amount of particulate in a volume of ambient air
- Ultraviolet Absorption – Ozone absorbs ultraviolet light; this property is the basis for the analytical method used by continuous ozone monitors to measure ozone concentrations.

- Ultraviolet Fluorescence – When excited by ultraviolet light, SO<sub>2</sub> molecules emit light at a lower frequency that is detected by a photomultiplier tube. This property is the basis for the analytical method used for continuous SO<sub>2</sub> gas analyzers.

**Operating Schedule** – Continuous monitors run continuously and measure hourly average concentrations in real time. Manual samplers, such as PM filter samplers, collect a single 24-hour sample from midnight to midnight on a particular day, which is weighed later in an analytical laboratory. A fractional schedule (e.g. 1/1, 1/2, 1/3, 1/6 and 1/12) schedule for manual samplers refers to collecting a sample every day, every second, every third, every sixth and every twelfth day, respectively.

**Primary Monitoring Objective** – the primary reason a monitor is operated at a particular location.

- General Background – The objective is to establish the background levels of a pollutant
- Higher Concentration – The objective is to establish the maximum ozone concentration. Since ozone is a secondary pollutant, ozone concentrations are typically highest 10-30 miles downwind of an urban area.
- Population Exposure – The objective is to monitor the exposure of individuals in the area represented by the monitor
- Regional Transport – The objective is to assess the extent to which pollutants are transported between two regions that are separated by hundreds of kilometers
- Source Oriented – The objective is to determine the impact of a nearby source.

**Spatial Scale** – The scale of representativeness is described in terms of the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar. Monitors are classified according to the largest applicable scale as illustrated below:

- Neighborhood Scale – defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range. The neighborhood and urban scale (listed below) have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
- Urban Scale – defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
- Regional Scale – usually defines a rural area of reasonably homogenous geography without large sources, and extends from tens to hundreds of kilometers.

**NAAQS Comparable** – This column details whether the data from the monitor can be compared to the National Ambient Air Quality Standards (NAAQS). Entries in this column are Yes and No. For a monitor's data to be eligible for comparison against the NAAQS, the type of monitor used must be defined as a federal reference method or federal equivalent method by EPA.

**MSA** – Metropolitan Statistical Area – one urbanized area with a population of 50,000 or more.

**Changes** – Lists any changes that AQP anticipates making to the network for each specific analyzer/sampler.

**Albuquerque Environmental Health Department (EHD)**  
**Air Quality Programs (AQP)**  
**Ambient Air Monitoring Division**  
**2020 Annual Network Review for Ambient Air Monitoring**

**Introduction:**

Federal regulations require the City of Albuquerque Air Quality Program (AQP) to submit an annual monitoring network review (ANR) to the Environmental Protection Agency (EPA) regional office in Dallas, Texas. AQP's objective, when reviewing its network and proposing changes (if appropriate), is to use its limited monitoring resources optimally, while maximizing the network's effectiveness by choosing monitoring sites to measure where air quality is likely to be most heavily impacted by certain criteria pollutants.

This network plan describes the framework of AQP's local air quality surveillance system, presents monitoring results over the past three years, provides comparisons to National Ambient Air Quality Standards, and discusses AQP's plans for changes to the network in the coming year. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to formal submission to EPA (Anticipated public review dates are May 15 – June 14, 2020). All City of Albuquerque State and Local Air Monitoring Stations (SLAMS) are operated in compliance with meet EPA guidance under 40 CFR, Part 58, Appendix E.

This document shows the network configuration since the 2019 Annual Network Review and proposed changes for the 2020 Calendar year. It represents the commitment of the AQP to effectively evaluate air quality in Albuquerque-Bernalillo County<sup>1</sup> through ambient air monitoring, by using the best affordable technology and by communicating the data collected as quickly and accurately as possible.

The City of Albuquerque Air Quality Program operates its air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A and B, makes use of the methodology given for each monitor in accordance with Appendix C, implements and designs its monitoring network in accordance with Appendix D, and follows siting criteria provided in Appendix E.

**Population Statistics:**

The counties of Bernalillo, Sandoval, Valencia and Torrance make up New Mexico's largest Metropolitan Statistical Area (MSA). The MSA contains 918,018 people as of 2019 which is almost half (43.7%) of the State's total population of 2,096,829.<sup>2</sup>

As the regional center for employment, higher education, retail commerce, and medical treatment, Albuquerque experiences non-local commuter traffic. The junction of major Interstate 25 (north/south) and Interstate 40 (east/west), adds significant heavy transport traffic between the port of Los Angeles and the East Coast, and between Denver, El Paso, and the US-Mexico Border.

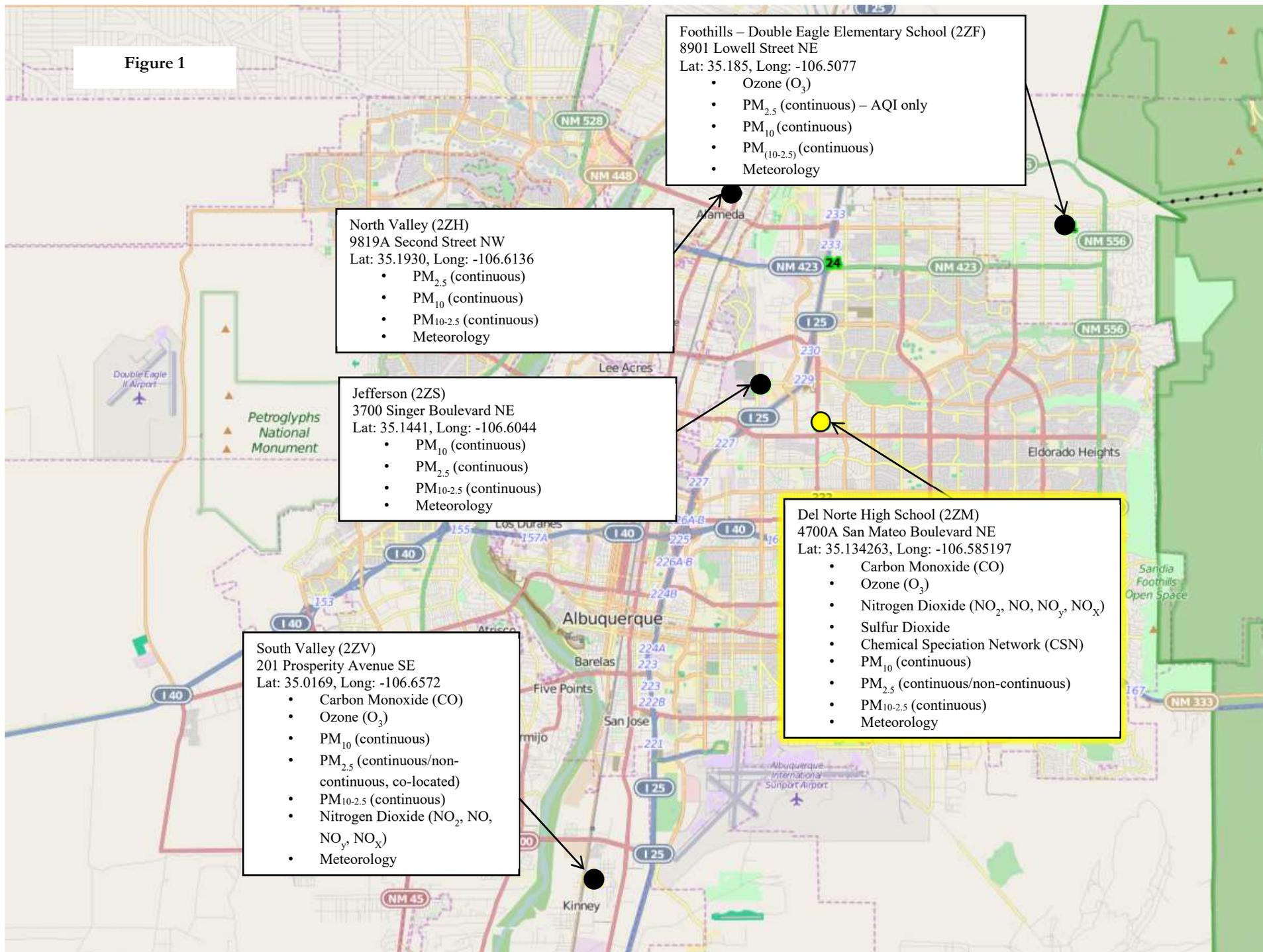
The map in Figure 1 shows the physical location of all current monitoring sites operated by the AQP. Two sites are within the city limits of Albuquerque (2ZM – Del Norte, 2ZS – Jefferson). Three other sites (2ZV – South Valley, 2ZH – North Valley, and 2ZF – Foothills) are in Bernalillo County.

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<sup>1</sup> Excluding Native American and Pueblo Lands within the County, in which air quality is under the jurisdiction of either EPA or in some cases the Native American tribe or Pueblo itself.

<sup>2</sup> Data from U.S. Census Bureau's 2019 population estimates for MSAs/CBSAs.

Figure 1



The following section contains tables which provide a more detailed description of the network configuration and lists the monitoring equipment operated at each site. For each monitoring location, Tables 1-5 list the site's longitude and latitude, pollutants measured, monitor type(s) and their associated parameters, sampling method(s), operating schedule, monitoring objective, spatial scale, whether the data is NAAQS comparable, the MSA and any proposed changes to the network.

**Del Norte (2ZM - NCore) - 35-001-0023 - 4700A San Mateo, NE, Albuquerque, NM 87109**

The Del Norte site serves as the NCore site in the AQP ambient air monitoring network. NCore is a multi-pollutant network that integrates several advanced measurement monitoring systems for particulate, pollutant gases and meteorology. The NCore site measures the following parameters:

Parameter	Comments
PM <sub>2.5</sub> speciation	Organic and elemental carbon, major ions and trace metals (24 hour average; every 3rd day); CSN
PM <sub>2.5</sub> FRM mass	24 hr. average at least every day
Continuous PM <sub>2.5</sub> mass	1 hour reporting interval; FEM or pre-FEM monitors
PM <sub>(10-2.5)</sub> mass	Filter-based or continuous
ozone (O <sub>3</sub> )	all gases through continuous monitors
carbon monoxide (CO)	capable of trace levels (low ppm and below) where needed
sulfur dioxide (SO <sub>2</sub> )	capable of trace levels (low ppb and below) where needed
nitrogen oxide (NO)	capable of trace levels (low ppb and below) where needed
total reactive nitrogen (NO <sub>y</sub> )	capable of trace levels (low ppb and below) where needed
surface meteorology	wind speed and direction, temperature, Relative Humidity (RH)

In Table 1, which follows, the details of the Del Norte site monitoring equipment are described.

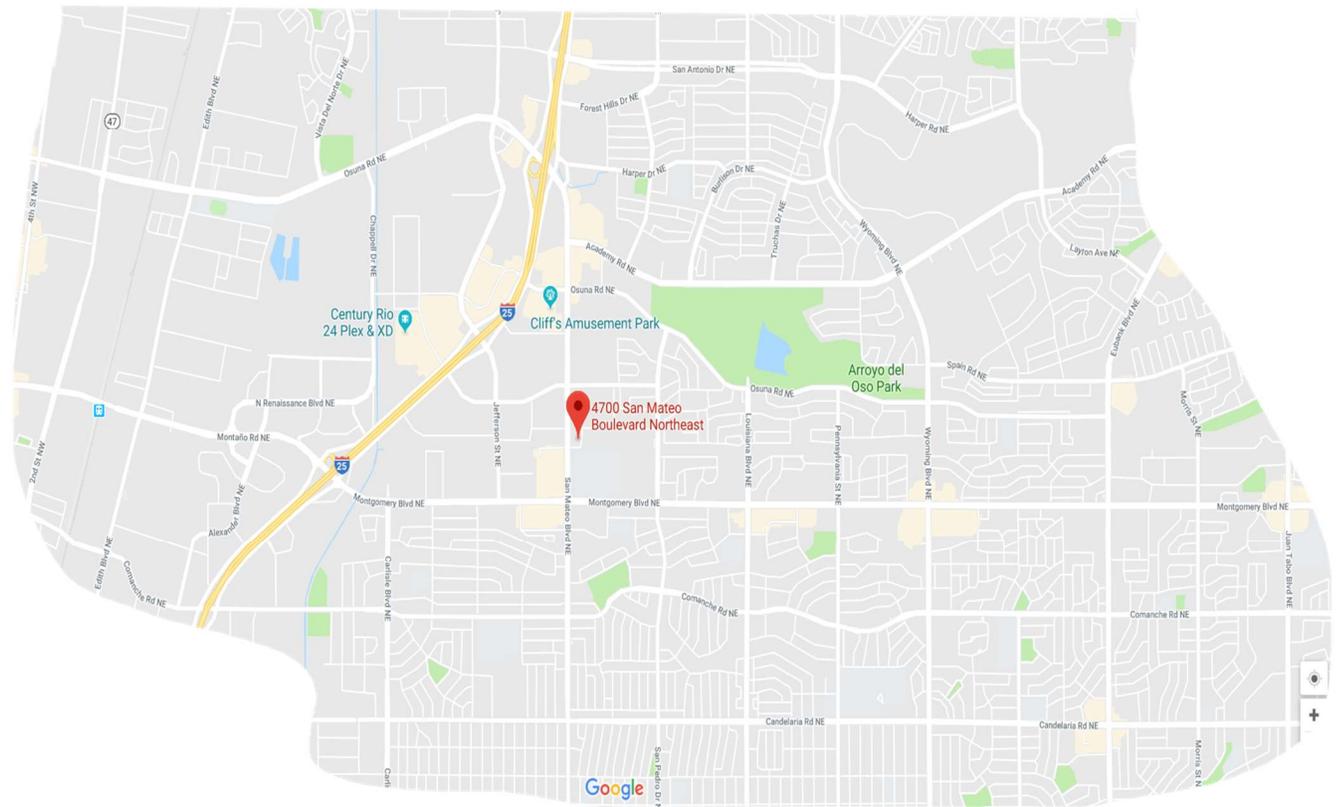
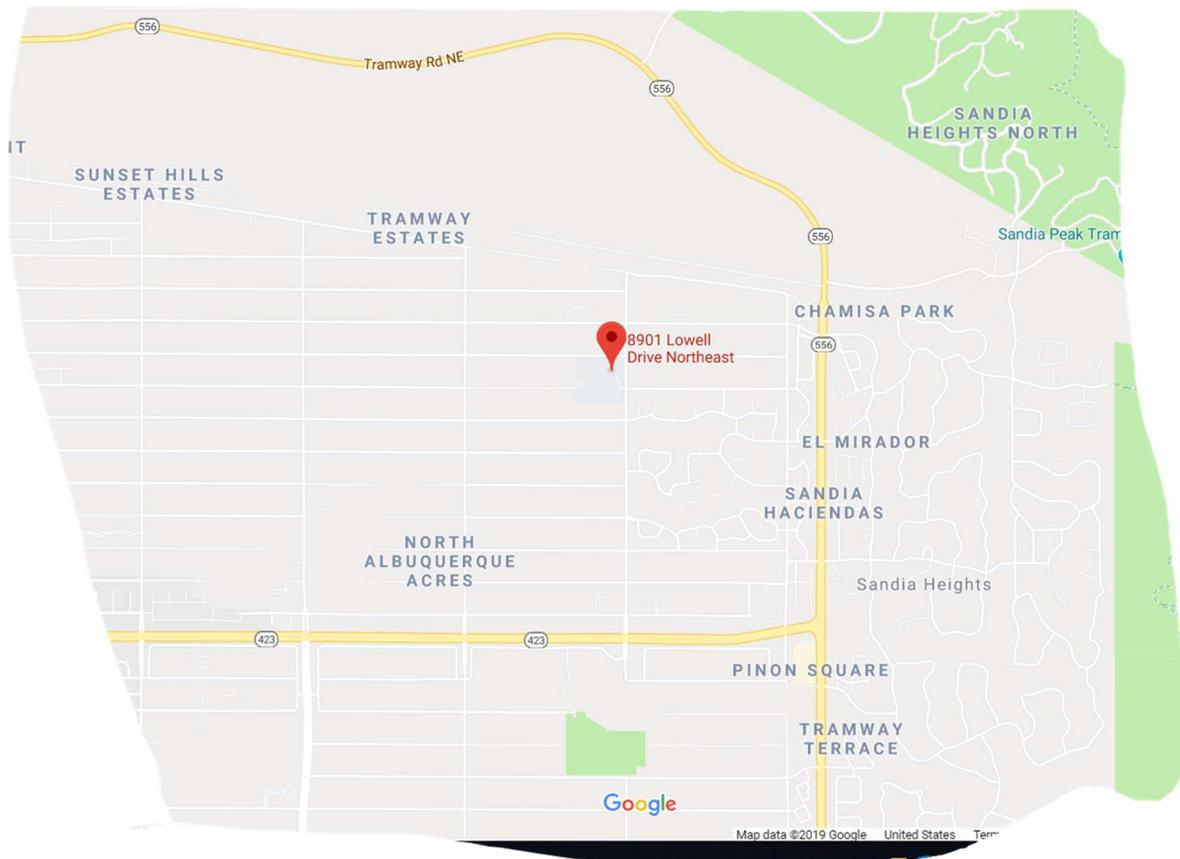


Table 1

Del Norte (2ZM - NCore) - 35-001-0023 - 4700A San Mateo, NE, Albuquerque, NM 87109												
Latitude	Longitude	Pollutants Measured	Monitor Type	Parameter	Sampling Method	AQS Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA	Change
-106.586	-35.13426	O <sub>3</sub>	SLAMS	44201	87	Ultraviolet Absorption	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		HS CO	SLAMS	42101	593	Gas Filter Correlation	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		NO <sub>2</sub>	SLAMS	42602	99	Gas Phase Chemiluminescence	Continuous	Population Exposure	Neighborhood	Yes	ABQ	Thermo 42iQTL will replace the Teledyne T200 unit
		NO <sub>y</sub>	SLAMS	42600	699	Chemiluminescence	Continuous	Population Exposure	Neighborhood	Yes	ABQ	Thermo 42iY will replace the Teledyne T200U unit
		HS SO2	SLAMS	42401	600	UV Fluorescence	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	221	Gravimetric	1 in 1	Population Exposure	Neighborhood	Yes	ABQ	
		Metals	Special Purpose	Multiple 88132-88306, 88403	Multiple	810-MetOne SASS, 811 MetOne SASS Teflon, 812 MetOne SASS Nylon	1 in 3	Population Exposure	Mixture of Other, Population Exposure, General Background	N/A	ABQ	
		Carbon Speciation	Special Purpose	Multiple 88320-88388	Multiple	826, 831, 839, 840, 841, 842 URG 3000N with Pall Quartz Filter and cyclone inlet	1 in 3	Population Exposure	Mixture of Other, Population Exposure, General Background	N/A	ABQ	
		PM <sub>10</sub>	SLAMS	81102	239	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	238	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>10.25</sub>	SLAMS	86101	240	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	N/A	ABQ	

**Foothills (2ZF) - 35-001-1012 - 8901 Lowell NE, Albuquerque, NM 87122**

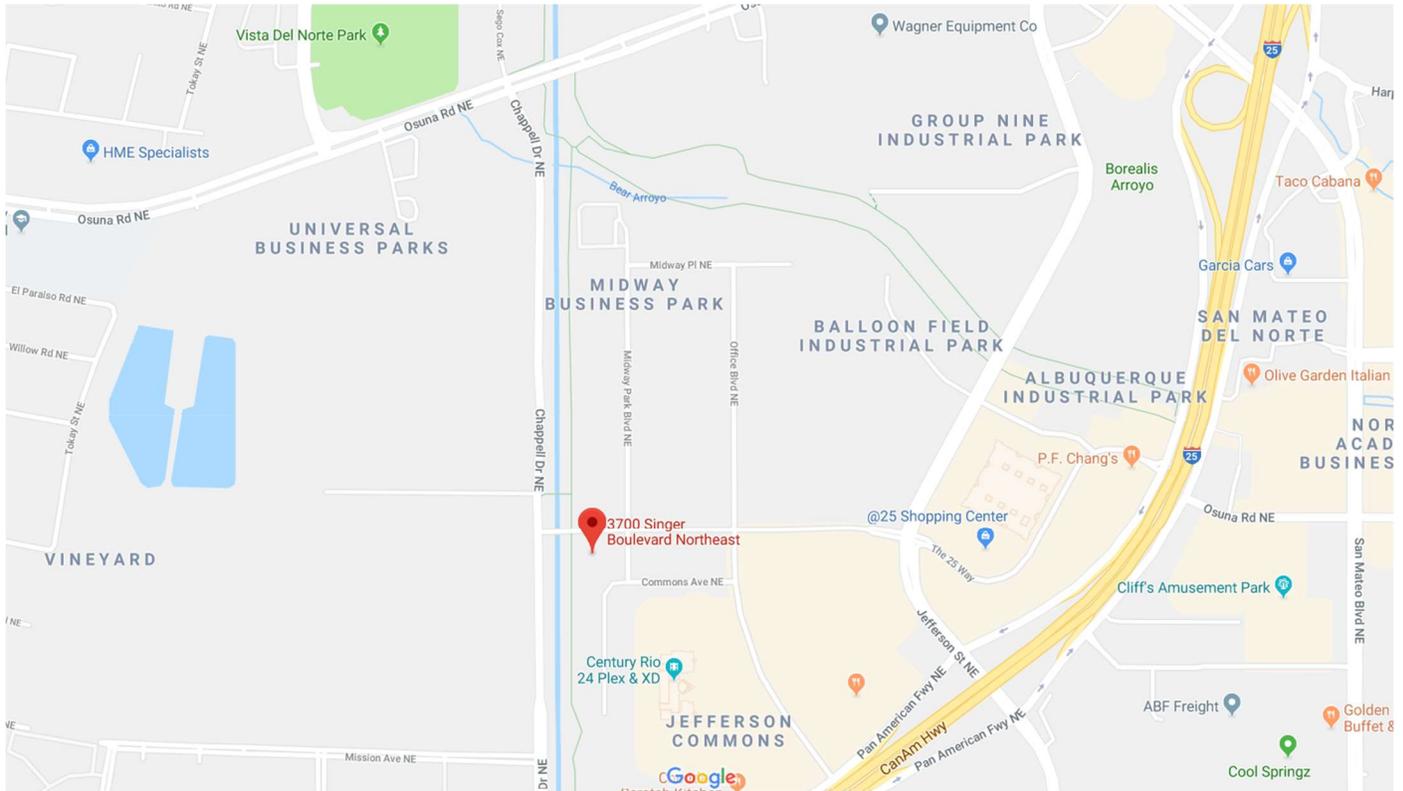


The Foothills ambient air monitoring station monitors ozone and measures  $PM_{10}$ ,  $PM_{2.5}$  and  $PM_{10-2.5}$ . There is a full suite of meteorological equipment that measures wind speed, wind direction, temperature and solar radiation. In Table 2, which follows, the details of the Foothills site monitoring equipment are described.

Foothills (ZZF) - 35-001-1012 - 8901 Lowell NE, Albuquerque, NM 87122												
Latitude	Longitude	Pollutants Measured	Monitor Type	Parameter	Sampling Method	AQS Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA	Change
-106.508	35.1852	O <sub>3</sub>	SLAMS	44201	87	Ultraviolet Absorption	Continuous	Higher Concentration	Urban	Yes	ABQ	
		PM <sub>10</sub>	SLAMS	81102	239	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	238	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>10-2.5</sub>	SLAMS	86101	240	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	N/A	ABQ	

Table 2

## Jefferson (2ZS) - 35-001-0026 - 3700 Singer NE, Albuquerque, NM 87109

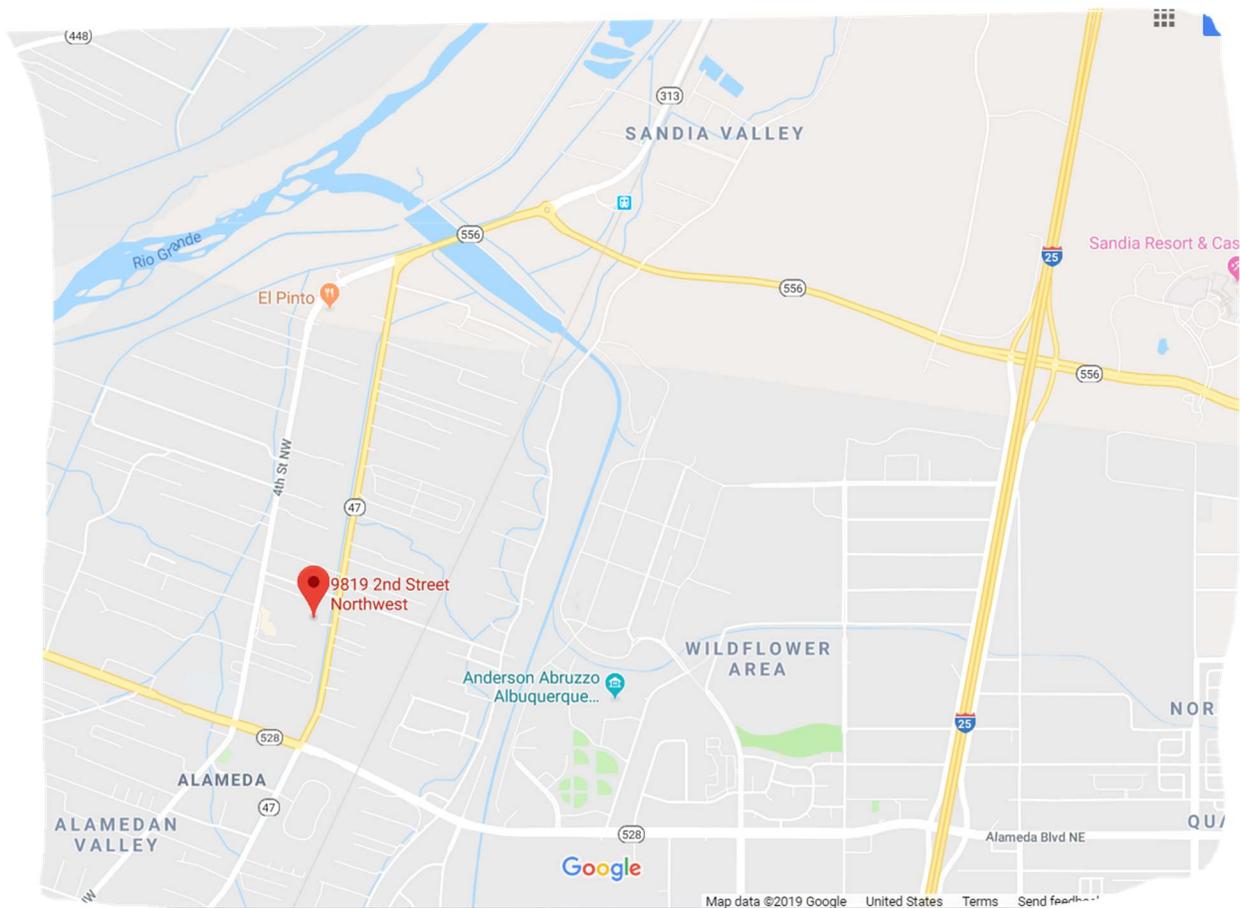


The Jefferson ambient air monitoring station measures  $PM_{10}$ ,  $PM_{2.5}$  and  $PM_{10-2.5}$ . There is a full suite of meteorological equipment that measures wind speed, wind direction, temperature and solar radiation. In Table 3, which follows, the details of the Jefferson site monitoring equipment are described.

Jefferson (2ZS) - 35-001-0026 - 3700 Singer NE, Albuquerque, NM 87109												
Latitude	Longitude	Pollutants Measured	Monitor Type	Parameter	Sampling Method	AQS Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA	Change
-106.605	-35.1443	PM <sub>10</sub>	SLAMS	88102	239	Broadband Spectroscopy	Continuous	Highest Concentration	Neighborhood	Yes	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	238	Broadband Spectroscopy	Continuous	Source Oriented	Neighborhood	Yes	ABQ	
		PM <sub>10-2.5</sub>	SLAMS	86101	240	Broadband Spectroscopy	Continuous	Source Oriented	Neighborhood	N/A	ABQ	

**Table 3**

**North Valley (2ZH) - 35-001-1013 - 9819A Second Street, NW, Albuquerque, NM 87114**



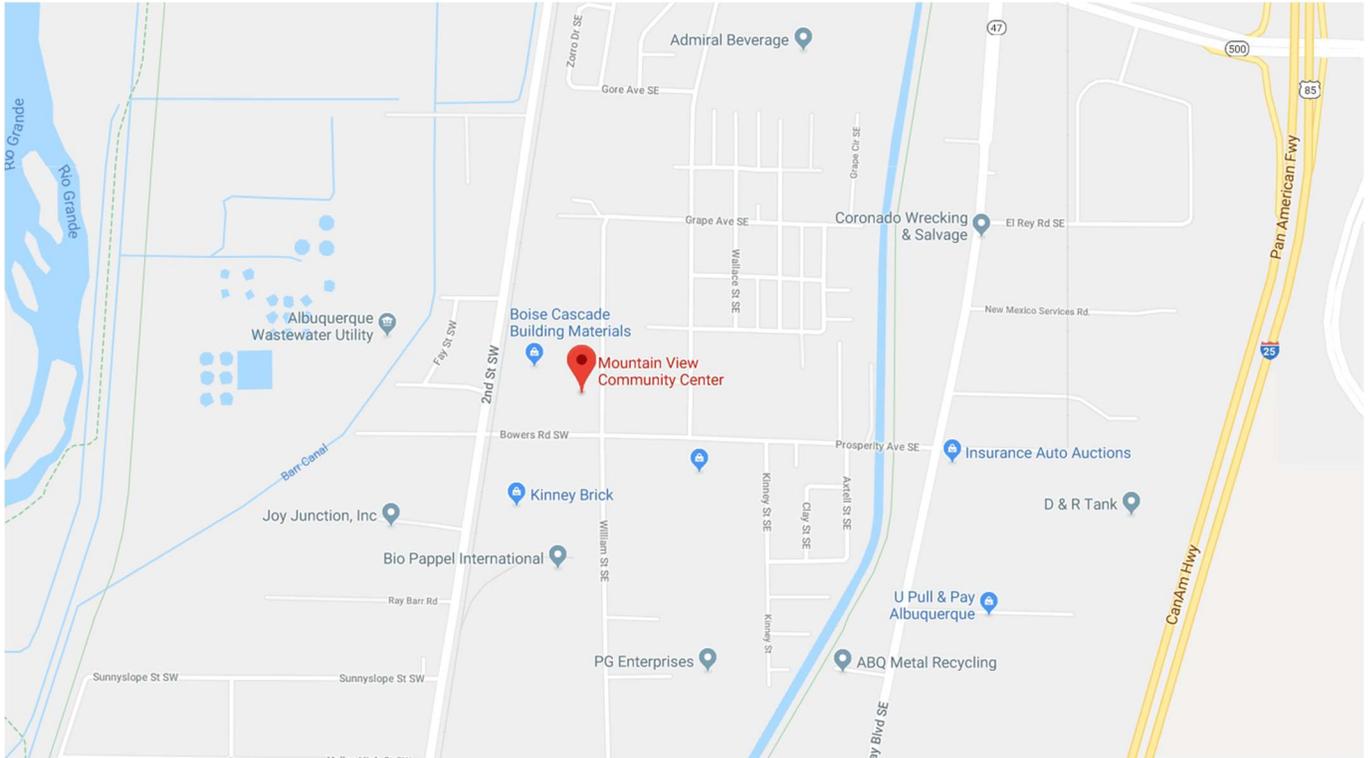
The North Valley ambient air monitoring station measures  $PM_{10}$ ,  $PM_{2.5}$  and  $PM_{10-2.5}$ . There is a full suite of meteorological equipment that measures wind speed, wind direction, temperature and solar radiation. In Table 4, which follows, the details of the North Valley site monitoring equipment are described.

**North Valley (2ZH) - 35-001-1013 - 9819A Second Street, NW, Albuquerque, NM 87114**

Latitude	Longitude	Pollutants Measured	Monitor Type	Parameter	Sampling Method	AQS Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA	Change
-106.614	-35.19324	PM <sub>10</sub>	SLAMS	81102	239	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	238	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>10-2.5</sub>	SLAMS	86101	240	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	

**Table 4**

**South Valley (2ZV) - 35-001-0029 - 201 Prosperity NE, Albuquerque, NM 87105**



The South Valley ambient air monitoring station monitors for ozone, carbon monoxide, and oxides of nitrogen and measures PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>10-2.5</sub>. There is a full suite of meteorological equipment that measures wind speed, wind direction, temperature and solar radiation. In Table 5, which follows, the details of the South Valley site monitoring equipment are described.

South Valley (2ZV) - 35-001-0029 - 201 Prosperity NE, Albuquerque, NM 87105												
Latitude	Longitude	Pollutants Measured	Monitor Type	Parameter	Sampling Method	AQS Analysis	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA	Change
-106.605	-35.1443	PM <sub>10</sub>	SLAMS	81102	239	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	238	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	Yes	ABQ	
		PM <sub>10-2.5</sub>	SLAMS	86101	240	Broadband Spectroscopy	Continuous	Population Exposure	Neighborhood	N/A	ABQ	
		PM <sub>2.5</sub>	SLAMS	88101	235	Gravimetric	1 in 1	Population Exposure	Neighborhood	Yes	ABQ	
		NO <sub>2</sub>	SLAMS	42602	99	Gas Phase Chemiluminescence	Continuous	Population Exposure	Neighborhood	Yes	ABQ	Thermo 42iQTL will replace the Teledyne T200 unit
		NO <sub>v</sub>	SLAMS	42600	699	Chemiluminescence	Continuous	Population Exposure	Neighborhood	Yes	ABQ	Thermo 42iY will replace the Teledyne T200U unit
		O <sub>3</sub>	SLAMS	44201	87	Ultraviolet Absorption	Continuous	Regional Transport	Regional	Yes	ABQ	
		HS CO	SLAMS	42101	93	Gas Filter Correlation	Continuous	Regional Transport	Regional	Yes	ABQ	

**Table 5**

## **DISCUSSION OF INDIVIDUAL CRITERIA POLLUTANTS**

The discussion below details:

- The criteria pollutants monitored at each ambient air monitoring station
- Compares the concentration of each pollutant to the National Ambient Air Quality Standards (NAAQS)
- Explains why the AQP monitoring network meets the criteria for assessment of the concentration for each pollutant in its jurisdiction

### **Ground Level Ozone (O<sub>3</sub>):**

Based on population, Table D-2 of Appendix D to Part 58, 40 CFR requires a minimum of two (2) State and Local Air Monitoring Stations (SLAMS) ozone monitors.

**Current** – Per 40 CFR Part 58, Appendix D Section 4.1, the AQP exceeds EPA network design requirements for ambient air quality monitoring for Ozone. The AQP has three (3) ozone monitors, all categorized as SLAMS.

**Table 6: Ozone Design Value by site, part per million (ppm)**

Site Name AQS #	2017 4th highest 8-hr avg.	2018 4th highest 8-hr avg.	2019 4th highest 8-hr avg.	3-year Design Value
Del Norte 0023	.069	.075	.068	.070
Foothills 1012	.071	.073	.069	.071
South Valley 0029	.066	.069	.066	.067

**Table 7: Ozone Design Value, parts per million (ppm)**

Site	2017 4 <sup>th</sup> Highest 8- hr (ppm)	2018 4 <sup>th</sup> Highest 8- hr (ppm)	2019 4 <sup>th</sup> Highest 9- hr (ppm)	3 year Design Value part per million (ppm)	2015 Federal Standard part per million (ppm)	% of the 2015 Federal Standard
Foothills* 1012	.071	.073	.069	.071	.070	101%

\*Foothills monitoring station recorded the highest concentrations from CY 2017-2019.

AQP considers the three ozone monitoring locations appropriate for its jurisdiction. AQP monitoring results show that the location of the maximum concentration of ozone changes over the year. Sometimes it is down in the South Valley, sometimes it is at Del Norte and sometimes it is at the Foothills site. Overall, the Foothills site averages higher concentrations than the other two sites, but it is important to understand the variability during the year. The AQP meets EPA requirements for ozone monitoring.

**Future:** No changes are proposed to the ozone network.

### **Fine Particulate Matter (PM<sub>2.5</sub>):**

According to Table D-5 of Appendix D to Part 58, 40 CFR one SLAMS PM<sub>2.5</sub> site is required in Albuquerque-Bernalillo County. However, two monitors are needed to meet collocation requirements. Between the

requirement needs of the NCore site and the desire for the COA to have a PM<sub>2.5</sub> monitor in its highest PM<sub>2.5</sub> concentration site. This highest concentration site would fulfill the requirement stated in 40 CFR Part 58 Appendix D, 4.7.1 (b).

**Current** – AQP operates seven PM<sub>2.5</sub> monitors at five monitoring stations in Albuquerque-Bernalillo County. The PM monitors (Teledyne/API T640X) that operate in the City’s ambient monitoring network measure three parameters: PM<sub>2.5</sub>, PM<sub>10</sub>, and PM<sub>10-2.5</sub>.

- The Del Norte 2ZM site (AQS 35-001-0023) operates a continuous Teledyne/API T640X FEM monitor as the Primary monitor and a MetOne E-FRM sequential sampler with 2.5-micron inlet cutoff to record 24-hour averages PM<sub>2.5</sub> on a 1 in 1 schedule.
- The South Valley 2ZV site (AQS 35-001-0029) operates a PM<sub>2.5</sub> Teledyne/API T640X FEM monitor and MetOne E-FRM sequential sampler with a 2.5-micron inlet to record 24-hour averages with a sampling frequency of 1/1 schedule as a co-located sampler.
- The Foothills 2ZF site (AQS 35-001-1012) operates a continuous Teledyne/API T640X FEM sampler. This monitor is not required by EPA, but is maintained by the AQP to better understand PM<sub>2.5</sub> trends as prevailing westerly winds cross the City of Albuquerque.
- The Jefferson 2ZS site (AQS 35-001-0026) operates a continuous PM<sub>2.5</sub> Teledyne/API T640X FEM monitor, which is not required by EPA, but the data is reported to AQS.
- The North Valley 2ZH site (AQS 35-001-1013) operates a continuous PM<sub>2.5</sub> Teledyne/ API T640X FEM monitor, which is not required by EPA, but the data is reported to AQS.

**Table 8: PM<sub>2.5</sub> Design Value, microgram per cubic meter (ug/m<sup>3</sup>)**

Site Name AQS #	Sampling Schedule	24-hour design value (ug/m <sup>3</sup> )	Annual Design Value (ug/m <sup>3</sup> )	Design Value (% Daily NAAQS)	Design Value (% Annual NAAQS)	Collocated with sequential PM <sub>2.5</sub>
Del Norte 0023	Continuous	16	5.4	45.7%	45%	No
South Valley 0029	Continuous	20	7.8	57.1%	65%	Yes

The PM<sub>2.5</sub> annual design values for Foothills, Jefferson and North Valley are not included in Table 10, as 3 years of data is required to calculate the design value.

**Future** –No changes are proposed to the PM<sub>2.5</sub> network.

**PM<sub>10</sub>:**

PM data is used by the AQP to accurately measure PM in neighborhoods, to enforce our local fugitive dust control regulation, and to issue high wind advisory and health alerts.

**Current** – AQP currently operates three PM<sub>10</sub> monitors at three sites, which are all NAAQS comparable. The Del Norte 2ZM NCore site (AQS 35-001-0023), Jefferson site (35-001-0026), and South Valley (35-001-0029) (AQS operates a continuous Federal Equivalent Method (FEM) for PM<sub>10</sub>). The PM monitors (Teledyne API T640X) that operate in the City’s ambient monitoring network measure three parameters: PM<sub>2.5</sub>, PM<sub>10</sub>, and PM<sub>10-2.5</sub>.

- The Del Norte 2ZM site (AQS 35-001-0023) operates a Teledyne/API T640X continuous FEM for PM<sub>10</sub>.
- The Jefferson 2ZS site (AQS 35-001-0026) operates a Teledyne/ API T640X continuous FEM for PM<sub>10</sub>.
- The South Valley 2ZV site (AQS 35-001-0029) operates a Teledyne/API T640X continuous FEM for PM<sub>10</sub>.
- The Foothills 2ZF site (AQS 35-001-1012) operates a continuous Teledyne/API T640X FEM sampler. This monitor is not required by EPA, but is maintained by the AQP to better understand PM<sub>10</sub> trends as prevailing westerly winds cross the City of Albuquerque and for AQI purposes.
- The North Valley 2ZH site (AQS 35-001-1013) operates a continuous Teledyne/API T640X FEM monitor. This monitor is not required by EPA, but is maintained by the AQP to better understand PM<sub>10</sub> trends as prevailing westerly winds cross the City of Albuquerque and for AQI purposes.

Table 9 shows the calculation of the design values for each NAAQS comparable PM<sub>10</sub> site.

**Table 9: 2019 PM<sub>10</sub> 24 Hour Design Value**

Site	COA-2019 24 Hour Design Value	NAAQS	Is the average # of exceedance values >1
Del Norte 2ZM	0	≥1	No
Jefferson 2ZS	0	≥1	No
South Valley 2ZV	0	≥1	No

\*PM<sub>10</sub> Design Value is the number of expected exceedances based off the last three years values.

The PM<sub>10</sub> annual design values for Foothills and North Valley are not listed in Table 9, as 3 years of data is required to calculate the design value. The AQP is meeting the monitoring network requirements for ambient air quality monitoring for PM<sub>10</sub> required by 40 CFR Part 58, App. D, § 4.4..

**Future:** No changes are proposed to the PM<sub>10</sub> network.

**Sulfur Dioxide (SO<sub>2</sub>):**

**Current** – AQP operates an SO<sub>2</sub> monitor at site Del Norte 2ZM site (AQS 35-001-0023), the NCore location. Table 10 shows that the SO<sub>2</sub> monitor is measuring only trace levels, less than 10% of the NAAQS.

**Table 10: 2019 SO<sub>2</sub> Design Value, part per billion (ppb)**

2ZM Del Norte	Year	99th percentile
35-001-0023	2017	4
35-001-0023	2018	5
35-001-0023	2019	4
<b>Design Value</b>		4

**Future** –No changes are proposed to the SO<sub>2</sub> network in the coming year.

**SO<sub>2</sub> Data Requirement Rule-** The EPA Fact Sheet “Final Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide (SO<sub>2</sub>) Primary National Air Quality Standards (NAAQS) states:

This final rule establishes that, at a minimum, air agencies must characterize air quality around sources that emit 2,000 tons per year (tpy) or more of SO<sub>2</sub>. An air agency may avoid the requirement for air quality characterization near

a source by adopting enforceable emission limits that ensure that the source will not emit more than 2,000 tpy of SO<sub>2</sub>.

Bernalillo County does not have any sources that emit over the 2,000 tons per year minimum therefore, no characterization is necessary. The AQP will continue to follow this issue and adjust our plans as further information becomes available from the EPA.

The AQP is meeting the network design requirements for ambient air quality monitoring for SO<sub>2</sub> required by 40 CFR Part 58, App. D, § 4.4.

**Oxides of Nitrogen (NO):**

**Current** – The AQP monitors NO, NO<sub>2</sub>, NO<sub>x</sub>, and NO<sub>y</sub> at the Del Norte 2ZM site (AQS 35-001-0023, the NCore location) and is currently meeting the network design requirement for ambient air quality monitoring for NO<sub>2</sub> based on 40 CFR Part 58, Appendix D Section 4.3.3. Table 13 details the design values for NO<sub>2</sub> for 2017 and 2018. (Annual 98<sup>th</sup> percentile 1-hour values averaged over 3 years = 45 ppb compared to a standard of 100.)

**Table 11: NO<sub>2</sub> Design Value, ppb**

2ZM Del Norte site 35-001-0023			
98th Percentile	2018	2019	3 year Design Value
1-Hr Concentration (PPB)	45.2	43.8	45

The NO<sub>2</sub> annual design values for South Valley is not included in Table 11, as 3 years of data is required to calculate the design value and we do not have three (3) years of data.

**Future** – The COA proposes to replace the API 200 and API 200U with the Thermo 42iQTL and the 42iY at the Del Norte (35-001-0023) and South Valley (35-001-0029) monitoring sites.

**Carbon Monoxide (CO):**

**Current** –The AQP currently operates two (2) CO monitors. The COA is currently meeting the network design requirement for ambient air quality monitoring for CO per 40 CFR Part 58, Appendix D Section 4.2.

Table 12: 2019 CO Design Value, ppm

<b>2ZM Del Norte 35-001-0023</b>					
<b>1 Hour</b>			<b>8 Hour</b>		
Year	1st Max	2nd Max	Year	1st Max	2nd Max
2018	1.8	1.7	2018	1	1.0
2019	1.4	1.3	2019	1.4	1.3
<b>2ZV South Valley 35-001-0029</b>					
<b>1 Hour</b>			<b>8 Hour</b>		
Year	1st Max	2nd Max	Year	1st Max	2nd Max
2018	1.9	1.8	2018	1	0.9
2019	1.1	1.0	2019	1.1	0.8

<u>Site</u>	<u>2018 - 2019 - 1-hr high average (ppm)</u>	<u>Federal Standard part per million (ppm)</u>	<u>% of the Federal Standard</u>
<u>South Valley (35- 001-0029)</u>	<u>1.55</u>	<u>35.0</u>	<u>4.4%</u>
<u>Site</u>	<u>2018 - 2019 - 8-hr high average (ppm)</u>	<u>Federal Standard part per million (ppm)</u>	<u>% of the Federal Standard</u>
<u>Del Norte (35-001- 0023)</u>	<u>1.2</u>	<u>9.0</u>	<u>13.3%</u>

Since the CO concentrations are low, both monitors are now ‘high sensitivity’.

**Future** –No changes are proposed for the coming year.

### **PM<sub>2.5</sub> Chemical Speciation**

**Current** – 40 CFR Part 58, Section 4.7.4 regulations require the operation of a speciation sampler at approved NCore sites. The Del Norte 2ZM site (AQS 35-001-0023) site in Albuquerque operates a Met One Super SASS and a URG sampler for EC/OC (Elemental and Organic Carbon). Speciation filters are shipped to the EPA national analysis contractor, and the contractor reports the data to AQS. The AQP also uses this data in local studies to correlate with data from other samplers.

Both samplers now operate on one-in-three day sampling schedule.

### **Community Scale Air Toxics Monitoring (CSATM)**

**Current** – The AQP has participated previously in CSATM studies, but there were none in the past year. On May 1, 2020, the AQP applied for a 2020 CSATM grant. EPA anticipates making award decisions in fall 2020.