

2016  
Ambient Air Monitoring Network Plan



**PIMA COUNTY**

---

ENVIRONMENTAL QUALITY

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AQ 394

# 2016 Ambient Air Monitoring Network Plan

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### I. INTRODUCTION

This document constitutes the 2016 Ambient Air Monitoring Network Plan for the Pima County air monitoring network. The Pima County Department of Environmental Quality (PDEQ) has prepared this document to be submitted to the U.S. Environmental Protection Agency (USEPA), Region IX. The purpose of the Ambient Air Monitoring Network Plan is to determine if the network is achieving the air monitoring objectives specified in **40 CFR Part 58 Appendix D**, which mandate adherence to certain number, type and location requirements of monitoring sites and specific site criteria such as monitoring inlet height. The plan should also determine if modifications should be made to the network (e.g. through the termination or relocation of unnecessary stations or addition of new stations). In addition, the plan is necessary in order to ensure that the residents of Pima County are provided adequate, representative and useful air quality data, and to provide adequate protection to public health.

The designated ambient air pollutants monitored and reported by PDEQ are carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), particulate matter with an aerodynamic diameter of 10 micrometers or less in size (PM<sub>10</sub>) and particulate matter with aerodynamic diameter of 2.5 micrometers or less in size (PM<sub>2.5</sub>). This pollutant data is submitted to the EPA Air Quality System (AQS) database for determination of compliance with National Ambient Air Quality Standards (NAAQS). This report contains statistical data summaries for the 2016 calendar year and provides a site by site assessment of the monitoring network with respect to EPA site criteria.

The Pima County monitoring network includes both State or Local Air Monitoring Stations (SLAMS) and Special Purpose monitors (SP). SLAMS monitors comprise the required network monitors that are used for NAAQS comparisons and follow the monitoring objectives listed on page 6. SP monitors are used to conduct special purpose studies and to enhance the network coverage of air quality monitoring data.

Pima County has a designated National Core (NCore) site at the Children's Park location, which also monitors for reactive oxides of nitrogen (NO<sub>x</sub>), particulate matter, coarse fraction (PM<sub>10-2.5</sub>) and speciated PM<sub>2.5</sub> particulate matter.

Pima County does not share monitoring responsibilities with Arizona Department of Environmental Quality at this time.

**Appendix C** contains the response letter from EPA for the 2015 Ambient Air Monitoring Plan submitted by PDEQ.

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### **PDEQ made the following network modifications in 2016:**

Based on the 2014 EPA Technical System Audit findings, PDEQ made the following changes, effective January, 2016:

Re-Classification of PM<sub>10</sub> stations from Special Purpose to SLAMS

- Geronimo, Santa Clara, Green Valley and Tangerine

Re-Classification of PM<sub>2.5</sub> stations from Special Purpose to OTHER

- Geronimo, Green Valley, Rose Elementary and Coachline

Began reporting PM<sub>10</sub> collocation data at the Santa Clara station February, 2016

Filter Base PM<sub>2.5</sub> FRM changed from method code 118 to 125 (replacing WINS Impactor with VSSC).

Due to continued decreasing ambient concentrations and changes to the NAAQS, PDEQ changed operating ranges on nitrogen dioxide and ozone analyzers to reflect current recommendations for upper range, quality control checks, and span check levels. The nitrogen dioxide analyzer at the 22/Craycroft monitoring station was changed from a 500 ppb range to a 200 ppb range, duplicating the ranges of the nitrogen dioxide and NOy analyzers at the Children's Park NCore station. Ozone analyzers network-wide underwent changes to operating range, span check and calibration points, as well as one-point QC checks, following recommendations in the QA Handbook, Volume II, Section 10.

Pima County DEQ discontinued monitoring of non-source oriented lead at the Children's Park location in May, 2016. **See attachments A and B.**

### **PDEQ's anticipated network modifications in 2017:**

Also based on the 2014 EPA Technical System Audit findings, PDEQ made the classification change from Special Purpose to SLAMS for the following monitors / stations:

- Carbon Monoxide / Children's Park NCore
- Nitrogen Dioxide / Children's Park NCore
- Ozone / Green Valley, Tangerine, Rose Elementary, Coachline and Fairgrounds

Install continuous PM<sub>10</sub> FEM monitors at the Orange Grove and South Tucson stations to replace the current FRM samplers.

Replace all analog data loggers with digital data loggers at all stations.

Relocate the current primary PM<sub>2.5</sub> FRM at the Children's Park station from the existing platform to the roof of the shelter, and change its designation from primary to collocation.

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Change the designation of the PM<sub>2.5</sub> FEM continuous sampler at the Children's Park station from non-primary to primary.

Install continuous PM<sub>2.5</sub> FEM monitor at the Orange Grove station to replace the current FRM sampler.

Relocate the PM coarse PM<sub>10</sub> – PM<sub>2.5</sub> sampler at the Children's Park station from the existing platform to the roof of the shelter.

Continue impact analysis of development near the Tangerine ozone and PM<sub>10</sub> monitoring station, and if necessary change the station spatial scale and site type to correspond with changes to area development.

### **Near-Road Monitoring**

Integral to revised minimum monitoring requirements for nitrogen dioxide (NO<sub>2</sub>) promulgated in February, 2010, state and local air monitoring agencies are required to install near-road NO<sub>2</sub> monitoring stations at locations where peak hourly NO<sub>2</sub> concentrations are expected to occur within the near-road environment in larger urban areas. Implementation of this requirement involves a three-phased approach, with initial installations in areas with populations greater than 1,000,000 to be completed by January 1, 2014. The second phase requires areas with 1) populations greater than 2,500,000 or, 2) populations greater than 500,000 with one or more roadway segments having 250,000 or greater Average Daily Traffic count to be completed by January 1, 2015. The third phase requires areas with populations greater than 500,000 but less than 1,000,000 to complete installations by January 1, 2017.

With most installations of phase one and two monitoring stations complete, and sufficient NO<sub>2</sub> data reported to ascertain with some certainty the concentration levels of NO<sub>2</sub> in the near-road environment, it has been determined that measured NO<sub>2</sub> levels are lower than expected, and in some cases, lower than neighborhood locations in the same urban areas. In light of this information, the logical course of action is to cancel installations of phase three monitoring stations, which is what EPA has done (Federal Register / Volume 81, No 251 / December 30, 2016). Core Based Statistical Areas (CBSAs) above a population of one million are still required to install a near-road NO<sub>2</sub> station.

Current population estimates place the Tucson CBSA over one million, which triggers the requirement for a near-road station. The Tucson CBSA is one of only two in the nation to cross over a population demarcation during the course of the implementation phases, and guidance for implementation has not been developed.

PDEQ acknowledges the requirement to install a near-road station, but lacks the resources to complete the installation, which will be difficult and costly. The station must be located within 50 meters of a heavily travelled road, which in the case of Tucson, means beside a freeway. This will involve extensive logistical planning and permitting. A plan is currently under development, but implementation will require funding, which is uncertain, in view of budget cuts under consideration at the federal level.

### General comment regarding monitoring station siting criteria:

The locations of monitoring stations in the PDEQ network require considerable planning to conform to all of the siting requirements specified in 40 CFR 58 Appendix E. Locations are chosen only after carefully considering the intent and installation logistics of each station. Some stations remain static, and easily maintain all siting criteria, and others fall victim to urban evolution and nature. Development happens and trees grow, modifying the original circumstances. Development can change those circumstances to the point that relocation or designation change of a station is required. Tree growth is more forgivable in that it can be modified by removal or trimming, but sometimes this is not possible for a number of reasons. Going to the effort of relocating a station because of tree growth is not generally practical. Modifying the station information to categorize trees as an obstruction is preferable, as long as siting criteria still meets the minimum requirements for obstructions. Most of the trees near PDEQ monitoring stations are typical of Sonoran Desert indigenous species, namely mesquite and palo verde, both of which have small, relatively sparse leaves, and in most cases do not totally block airflow, or provide large surfaces for particulate deposition. However, PDEQ has several stations that have been compromised by substantial tree growth, and in each section for those stations, the category for degrees of unrestricted airflow will reflect the reality of tree growth at those stations, and the obstructed airflow will be identified by direction in degrees.

## II. BACKGROUND

Pima County Air Quality Control District met all the National Ambient Air Quality Standards (NAAQS) in 2016. Concentrations of the criteria pollutants have been stable over the past few years with ozone and particulate matter (PM<sub>10</sub>) being the major concern for Pima County. Ozone has been very close to the standard, often within 95% of the standard. Particulate matter (PM<sub>10</sub>) levels are elevated during drought conditions and high winds which have caused exceedances of the NAAQS.

### Regional Evaluation

In order to evaluate existing and proposed monitoring stations and their stated objectives, regional information is used. The regional information consists of the most current values for population, major urban developments and directions of growth, traffic and highway data, major industries and aerial photographs showing topography. Population (census tract) data can act as a guide in evaluation of the representativeness of a site for determining population exposure. The 2010 census shows Pima County population at 980,263 and the city of Tucson population at 520,116. **Figure 1** on page 9 illustrates the Eastern Pima County Tucson Air Planning Area (TAPA). The various incorporated areas and other agency lands are shown, as well as the named mountain peaks that define the planning area for Eastern Pima County, which includes the Tucson Metropolitan area. The Tucson Metropolitan Statistical Area (MSA) has incurred a population increase of approximately 2.5% since the 2010 census, based on 2015 estimates by the US Census Bureau.

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### Average Daily Traffic (ADT)

Traffic data is necessary for site evaluations since a large portion of air pollutants in the Tucson basin are caused by vehicular traffic. Traffic volumes and density maps are used in evaluating the monitoring network. This data is routinely compiled and used by local transportation and planning agencies. An analysis of the most current traffic data indicates that the network continues to meet the requirements for the monitoring site type and corresponding spatial scales as initially established. The Average Daily Traffic (ADT) numbers are 24 - hour, two - way volume of averaged weekday traffic.

### Latitude and Longitude

Latitude and Longitude data is also provided for the monitoring sites using Datum WGS84 AZ Central in Decimal.Degrees.

### Local Geography and Meteorology

Tucson, Arizona is a major metropolitan area situated in the Santa Cruz river valley, which is encompassed by the Sonoran Desert at an elevation between 2300 and 2800 feet. Basin and range topography characterizes the region with rugged mountain ranges encircling the valley floor with mountain peak elevations in excess of 9000 feet, thus delineating the Tucson Air Planning Area. The flat or gently rolling valley terrain slopes from the higher south and southeast toward the lower northwest following the Santa Cruz river drainage.

The climate of Tucson is characterized by a hot season normally starting in April and ending in October, and a generally mild winter. Maximum daily temperatures from May through September are usually above 90 degrees Fahrenheit. The average rainfall is around eleven inches per year.

Tucson International Airport records show an average of 240 clear days a year (days with less than 50% total cloud cover). The remaining periods include the winter prefrontal situations more common in the north and the prolonged seasons of convective summer storms. Wind velocity and direction changes, associated with the large scale pressure systems, frequently result in localized dust storms.

The mountain-valley circulation, along with surface heating during the day and radiational cooling at night, create a predominantly southeast to northwest wind path in the basin. Airflows generally tend to be downvalley (from the southeast) at night and early morning hours, reversing to the upvalley direction (from the northwest) during the day. These downvalley / upvalley flows are strongly influenced by localized upslope / downslope terrain. The normal upvalley airflow is from the northwest, and parallels the Santa Cruz River, but decays well before sunset. This is followed by an hour of light, erratic flows which turn into the downvalley flow from the southeast, and reach their maximum and stabilized speed in four to six hours. The air temperature drops steadily during this interval until the sun rises. The downvalley direction continues for two to five hours past sunrise and then transforms into a short calm period prior to the change to upvalley flows.

The southeasterly “monsoon” regime that occurs primarily in the months of July and August is a large scale synoptic feature with considerable yearly variation both in intensity and timing. At the Tucson International Airport, the winds become strong, gusty and southeasterly with high relative humidity, cloud cover and frequent thunderstorms. The mountain – valley circulation tends to be suppressed during this time period.



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Atmospheric temperature inversions occur almost daily in the Tucson air basin. During the winter months these inversions may become severe with particulate and other pollutants becoming concentrated, remaining near the ground level causing haze. When the sun sets, the ground and surface air cools faster than the air several hundred feet above the surface. Since air temperature normally decreases with increasing altitude, the warm and cool layers are reversed or “inverted”, hence the name ‘temperature inversion’. These temperature inversions are usually strongest on cold, clear winter nights, where there is an absence of cloud cover. Consequently, the inversions “lock” the pollutants near the surface. As the sun causes the cool air layer close to the ground to warm up, vertical mixing and horizontal transport disperse the air pollutants. In the early evening, the low level air inversion begins to form again and often coincides with the evening traffic rush hour.

### Definition of Monitoring Objectives, Site Types and Spatial Scales

The Pima County ambient air monitoring network is designed to meet three basic monitoring objectives. These objectives listed in **Appendix D, 1.1 of 40 CFR Part 58** are:

- ◆ To provide air pollution data to the general public in a timely manner;
- ◆ To comply with ambient air quality protocols and standards in order for data to be used for comparison to the NAAQS;
- ◆ To support research studies.

The monitoring stations which comprise the Pima County network are designed to meet at least one of six basic monitoring site types. As listed in **Appendix D, 1.1.1 of 40 CFR Part 58**, the site types:

- ◆ Determine the area of highest concentrations expected to occur in the network;
- ◆ Determine representative concentrations in areas of high population density;
- ◆ Determine the impact on ambient pollution levels of significant sources or source categories;
- ◆ Determine general background concentration levels;
- ◆ Determine the extent of regional pollution transport among populated areas;
- ◆ Determine the welfare – related impact in more rural and remote areas.

The link between general monitoring objectives, site types and the geographical location of a monitoring station is defined as the spatial scale of representativeness, and the relationship is indicated in **Table 1** (next page). The goal of each station is to represent a specific air parcel throughout which actual pollution concentrations are reasonably homogeneous. The spatial scales are defined in **Appendix D, 1.2 of 40 CFR Part 58** as follows:

- ◆ *Microscale* defines concentrations in air volumes associated with area dimensions from 1 meter to 100 meters;
- ◆ *Middle Scale* defines concentrations typical of areas from 100 meters to 500 meters;
- ◆ *Neighborhood Scale* defines concentrations typical of areas with dimensions in the 0.5 to 4.0 kilometer range;

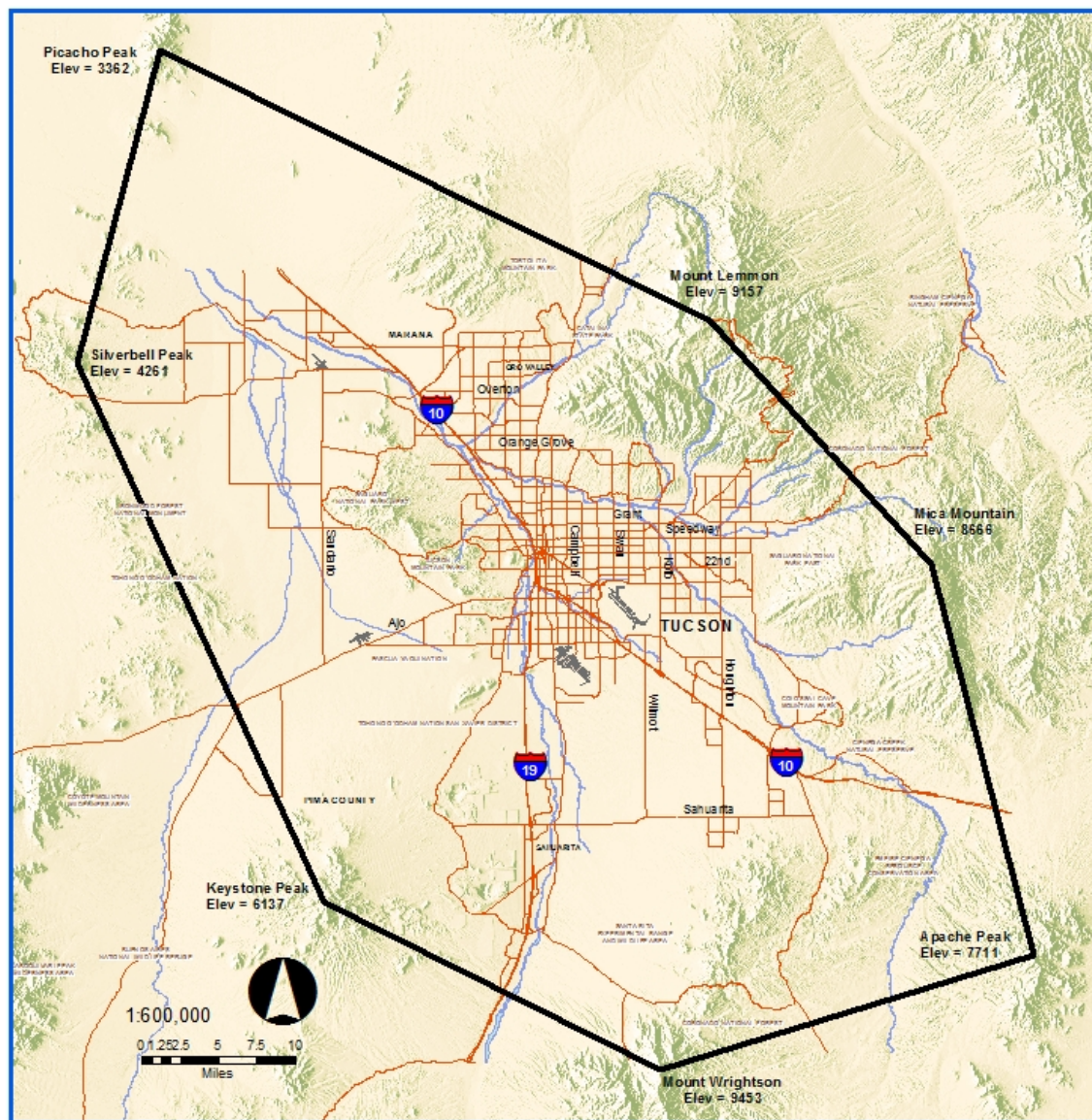
## 2016 Ambient Air Monitoring Network Plan

- ◆ *Urban Scale* defines the overall, city – wide conditions with dimensions in the 4 to 50 kilometer range;
- ◆ *Regional Scale* usually defines a rural area with dimensions as much as hundreds of kilometers;
- ◆ *National and Global Scales* represent concentrations which characterize nations and the globe as a whole (Pima County does not employ stations under this category).

**Table 1**

| Monitoring Site Types   | Appropriate Spatial Scales                   |
|-------------------------|----------------------------------------------|
| Highest Concentration   | Micro, Middle, Neighborhood, sometimes Urban |
| Population              | Neighborhood, Urban                          |
| Source Impact           | Micro, Middle, Neighborhood                  |
| General / Background    | Urban, Regional                              |
| Regional Transport      | Urban, Regional                              |
| Welfare-Related Impacts | Urban, Regional                              |

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## Eastern Pima County Tucson Air Planning Area

The portion of Pima County within the geographical coordinate boundary

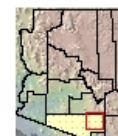
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### Comments

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### III. PIMA COUNTY AIR QUALITY MONITORING NETWORK SUMMARY TABLES AND MAP

#### Active Particulate Monitoring Sites for 2016

**Table 2**

| Map # | Pollutant        |                   | Address                      | Site Name             |
|-------|------------------|-------------------|------------------------------|-----------------------|
| 4     | PM <sub>10</sub> | PM <sub>2.5</sub> | 2498 N. Geronimo             | Geronimo              |
| 5     | PM <sub>10</sub> |                   | 1601 S. 6 <sup>th</sup> Ave. | South Tucson          |
| 8     | PM <sub>10</sub> |                   | 22000 S. Houghton Rd.        | Corona de Tucson      |
| 9     | PM <sub>10</sub> |                   | 6910 S. Santa Clara Ave.     | Santa Clara School    |
| 10    | PM <sub>10</sub> | PM <sub>2.5</sub> | 601 N. La Canada Dr.         | Green Valley          |
| 11    |                  | PM <sub>2.5</sub> | 400 W. River Rd.             | Children's Park NCore |
| 12    | PM <sub>10</sub> | PM <sub>2.5</sub> | 3401 W. Orange Grove Rd.     | Orange Grove          |
| 13    | PM <sub>10</sub> |                   | 12101 N. Camino de Oeste     | Tangerine             |
| 14    |                  | PM <sub>2.5</sub> | 710 W. Michigan              | Rose Elementary       |
| 15    |                  | PM <sub>2.5</sub> | 9597 N. Coachline Blvd.      | Coachline             |

Map located on Page 12

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### Active Gaseous Pollutant Monitoring Sites for 2016

**Table 3**

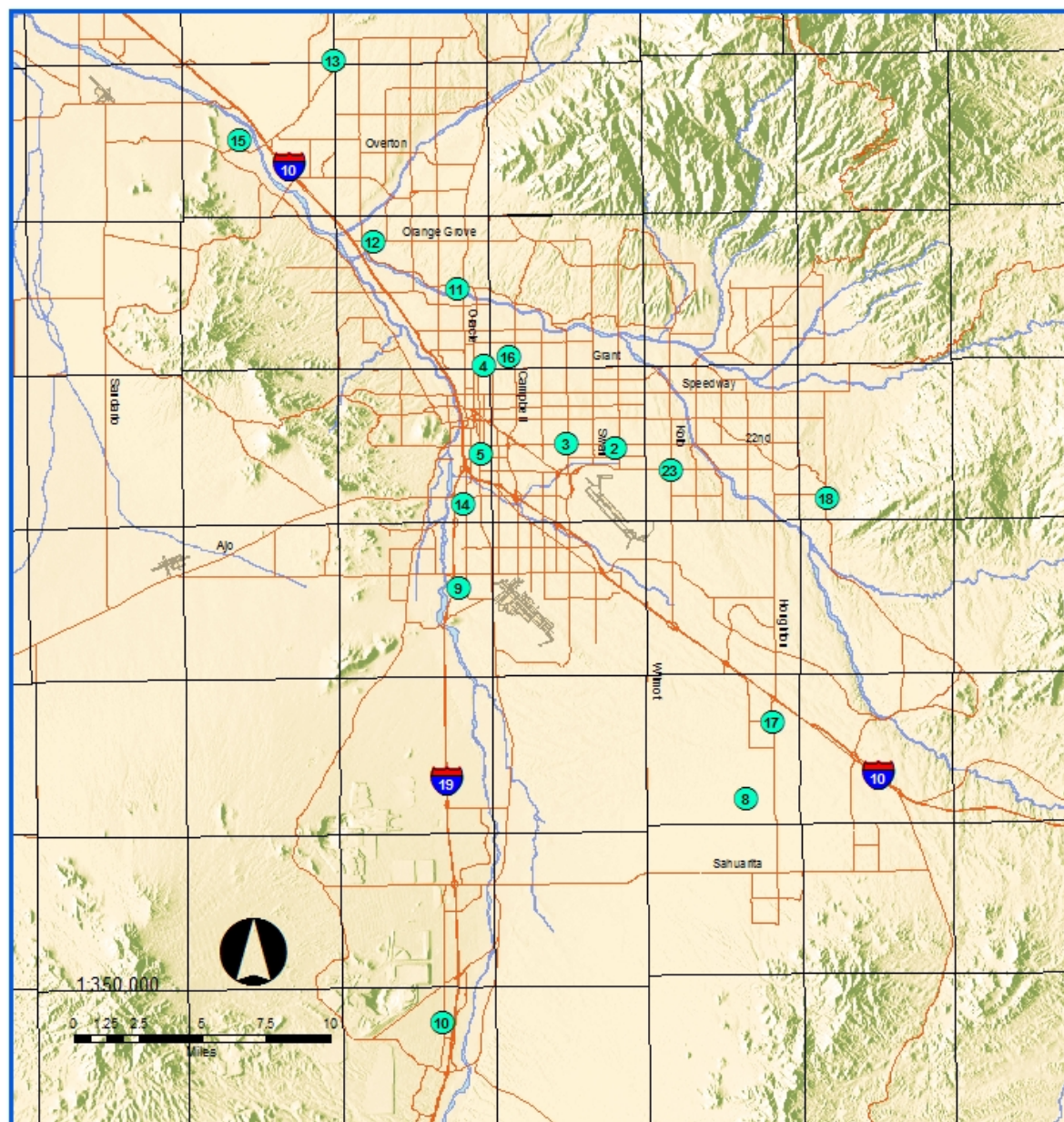
| Map # | Pollutant |                |                 |                 |                 | Address                      | Site Name                      |
|-------|-----------|----------------|-----------------|-----------------|-----------------|------------------------------|--------------------------------|
| 2     | CO        | O <sub>3</sub> |                 | NO <sub>2</sub> |                 | 1237 S. Beverly Ave.         | 22 <sup>nd</sup> & Craycroft   |
| 3     | CO        |                |                 |                 |                 | 3895 E. 22 <sup>nd</sup> St. | 22 <sup>nd</sup> & Alvernon    |
| 10    |           | O <sub>3</sub> |                 |                 |                 | 601 N. La Canada Dr.         | Green Valley                   |
| 11    | CO        | O <sub>3</sub> | SO <sub>2</sub> | NO <sub>2</sub> | NO <sub>y</sub> | 400 W. River Rd.             | Children's Park NCore          |
| 13    |           | O <sub>3</sub> |                 |                 |                 | 12101 N. Camino de Oeste     | Tangerine                      |
| 14    |           | O <sub>3</sub> |                 |                 |                 | 710 W. Michigan              | Rose Elementary                |
| 15    |           | O <sub>3</sub> |                 |                 |                 | 9597 N. Coachline Blvd.      | Coachline                      |
| 16    | CO        |                |                 |                 |                 | 2745 N. Cherry Ave.          | Cherry & Glenn                 |
| 17    |           | O <sub>3</sub> |                 |                 |                 | 11330 S. Houghton Rd.        | Fairgrounds                    |
| 18    |           | O <sub>3</sub> |                 |                 |                 | 3905 S. Old Spanish Trail    | Saguaro National Park,<br>East |
| 23    | CO        |                |                 |                 |                 | 2601 S. Kolb Rd.             | Golf Links & Kolb              |

Map located on page 12



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### Pima County Monitoring Sites



- 2 - 22nd / Craycroft
- 3 - 22nd / Alvemon
- 4 - Geronimo
- 5 - South Tucson
- 8 - Corona de Tucson
- 9 - Santa Clara
- 10 - Green Valley
- 11 - Children's Park NCore
- 12 - Orange Grove
- 13 - Tangerine
- 14 - Rose Elementary
- 15 - Coachline
- 16 - Cherry / Glenn
- 17 - Fairgrounds
- 18 - Saguaro National Park East
- 23 - Golf Links / Kolb

- PDEQ Monitoring Sites
- Major Streets
- Washes

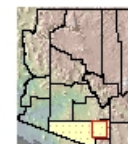
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#### Comments

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**2016 Ambient Air Monitoring Network Summary Table**  
**Table 4**  
**CARBON MONOXIDE - PIMA COUNTY MONITORING NETWORK**

| SITE NAME AND LOCATION                     | SITE ID (a) | PARAMETER (b) | CLASSIFICATION (c) | DATES (d)          | METHOD (e) | ELEV. FEET (f) | SMPL HEIGHT (M) (g) | SPATIAL SCALE (h) | SMPL FREQ (i)                                       | POC (j) | MONITORING SITE TYPE (h) |
|--------------------------------------------|-------------|---------------|--------------------|--------------------|------------|----------------|---------------------|-------------------|-----------------------------------------------------|---------|--------------------------|
| 22ND & CRAYCROFT<br>1237 S. BEVERLY AVE.   | 04-019-1011 | 42101         | SLAMS              | Jul-73<br>PRESENT  | 158/054    | 2582           | 4.4                 | NEIGHBORHOOD      | CONTINUOUS                                          | 1       | POPULATION EXPOSURE      |
| 22ND & ALVERNON<br>3895 E. 22ND STREET     | 04-019-1014 | 42101         | SLAMS              | Mar-75<br>PRESENT  | 174/054    | 2516           | 3.8                 | MICROSCALE        | CONTINUOUS                                          | 1       | HIGHEST CONCENTRATION    |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD | 04-019-1028 | 42101         | SLAMS              | Oct-98<br>PRESENT  | 554        | 2286           | 4.25                | NEIGHBORHOOD      | CONTINUOUS                                          | 1       | POPULATION EXPOSURE      |
| CHERRY & GLENN<br>2745 N. CHERRY AVE.      | 04-019-1021 | 42101         | SP                 | Feb-89<br>PRESENT  | 54         | 2400           | 4.9                 | NEIGHBORHOOD      | Cont/Seasonal<br>Jan. 1 –March31<br>Oct. 1- Dec. 31 | 1       | POPULATION EXPOSURE      |
| GOLF LINKS & KOLB<br>2601 SOUTH KOLB       | 04-019-1031 | 42101         | SP                 | Sept-02<br>PRESENT | 54         | 2661           | 3                   | MICROSCALE        | Cont/Seasonal<br>Jan. 1 –March31<br>Oct. 1- Dec. 31 | 1       | HIGHEST CONCENTRATION    |

### NITROGEN DIOXIDE - PIMA COUNTY MONITORING NETWORK

| SITE NAME AND LOCATION                     | SITE ID (a) | PARAMETER (b) | CLASSIFICATION (c) | DATES (d)         | METHOD (e) | ELEV. FEET (f) | SMPL HEIGHT (M) (g) | SPATIAL SCALE (h) | SMPL FREQ (i) | POC (j) | MONITORING SITE TYPE (h) |
|--------------------------------------------|-------------|---------------|--------------------|-------------------|------------|----------------|---------------------|-------------------|---------------|---------|--------------------------|
| 22ND & CRAYCROFT<br>1237 S. BEVERLY AVE.   | 04-019-1011 | 42602         | SLAMS              | Jan-73<br>PRESENT | 157/074    | 2582           | 4.4                 | NEIGHBORHOOD      | CONTINUOUS    | 1       | POPULATION EXPOSURE      |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD | 04-019-1028 | 42602         | SLAMS              | May-98<br>PRESENT | 090/074    | 2286           | 4.25                | NEIGHBORHOOD      | CONTINUOUS    | 1       | HIGHEST CONCENTRATION    |

### REACTIVE OXIDES OF NITROGEN - PIMA COUNTY MONITORING NETWORK

|                                            |             |       |       |                   |     |      |      |              |            |   |                     |
|--------------------------------------------|-------------|-------|-------|-------------------|-----|------|------|--------------|------------|---|---------------------|
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD | 04-019-1028 | 42600 | SLAMS | Oct-10<br>PRESENT | 674 | 2286 | 10.0 | NEIGHBORHOOD | CONTINUOUS | 1 | POPULATION EXPOSURE |
|--------------------------------------------|-------------|-------|-------|-------------------|-----|------|------|--------------|------------|---|---------------------|

Key located on page 16

## 2016 Ambient Air Monitoring Network Plan

| 2016 Ambient Air Monitoring Network Summary Table  |             |                              |                    |                    |            |                |                     |                   |               |                                  |
|----------------------------------------------------|-------------|------------------------------|--------------------|--------------------|------------|----------------|---------------------|-------------------|---------------|----------------------------------|
| SULFUR DIOXIDE -PIMA COUNTY MONITORING NETWORK     |             |                              |                    |                    |            |                |                     |                   |               |                                  |
| SITE NAME AND LOCATION                             | SITE ID (a) | PARAMETER CLASSIFICATION (b) | CLASSIFICATION (c) | DATES (d)          | METHOD (e) | ELEV. FEET (f) | SMPL HEIGHT (M) (g) | SPATIAL SCALE (h) | SMPL FREQ (i) | POC (j) MONITORING SITE TYPE (h) |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD         | 04-019-1028 | 42401                        | SLAMS              | Oct-10<br>PRESENT  | 560        | 2286           | 4.25                | NEIGHBORHOOD      | CONTINUOUS    | 1 POPULATION EXPOSURE            |
| OZONE -PIMA COUNTY MONITORING NETWORK              |             |                              |                    |                    |            |                |                     |                   |               |                                  |
| SITE NAME AND LOCATION                             | SITE ID (a) | PARAMETER CLASSIFICATION (b) | CLASSIFICATION (c) | DATES (d)          | METHOD (e) | ELEV. FEET (f) | SMPL HEIGHT (M) (g) | SPATIAL SCALE (h) | SMPL FREQ (i) | POC (j) MONITORING SITE TYPE (h) |
| 22ND & CRAYCROFT<br>1237 S. BEVERLY AVE.           | 04-019-1011 | 44201                        | SLAMS              | Jul-73<br>PRESENT  | 047        | 2582           | 4.4                 | NEIGHBORHOOD      | CONTINUOUS    | 1 POPULATION EXPOSURE            |
| GREEN VALLEY<br>601 N. LA CANADA DR.               | 04-019-1030 | 44201                        | SLAMS              | July-03<br>PRESENT | 047        | 2910           | 3.3                 | NEIGHBORHOOD      | CONTINUOUS    | 1 POPULATION EXPOSURE            |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD         | 04-019-1028 | 44201                        | SLAMS              | Sep-97<br>PRESENT  | 047        | 2286           | 4.25                | NEIGHBORHOOD      | CONTINUOUS    | 1 POPULATION EXPOSURE            |
| TANGERINE<br>12101 N. CAMINO DE OESTE              | 04-019-1018 | 44201                        | SLAMS              | Oct-89<br>PRESENT  | 047        | 2638           | 3.75                | URBAN             | CONTINUOUS    | 1 HIGHEST CONCENTRATION          |
| ROSE ELEMENTARY<br>710 W. MICHIGAN                 | 04-019-1032 | 44201                        | SLAMS              | July-03<br>PRESENT | 047        | 2387           | 4.1                 | NEIGHBORHOOD      | CONTINUOUS    | 1 POPULATION EXPOSURE            |
| COACHLINE<br>9597 N. COACHLINE BLVD                | 04-019-1034 | 44201                        | SLAMS              | July-03<br>PRESENT | 047        | 2110           | 3.4                 | NEIGHBORHOOD      | CONTINUOUS    | 1 POPULATION EXPOSURE            |
| FAIRGROUNDS<br>11330 S. HOUGHTON RD.               | 04-019-1020 | 44201                        | SLAMS              | Oct-89<br>PRESENT  | 047        | 3078           | 3.6                 | URBAN             | CONTINUOUS    | 1 BACKGROUND                     |
| SAGUARO NATIONAL PARK<br>3905 S. OLD SPANISH TRAIL | 04-019-0021 | 44201                        | SLAMS              | Jun-82<br>PRESENT  | 047        | 3089           | 4.1                 | NEIGHBORHOOD      | CONTINUOUS    | 1 MAXIMUM OZONE CONCENTRATION    |
| Key located on page 16                             |             |                              |                    |                    |            |                |                     |                   |               |                                  |



## 2016 Ambient Air Monitoring Network Plan

| 2016 Ambient Air Monitoring Network Summary Table   |             |               |                    |                     |            |                |                     |                   |                                  |         |                          |
|-----------------------------------------------------|-------------|---------------|--------------------|---------------------|------------|----------------|---------------------|-------------------|----------------------------------|---------|--------------------------|
| PM10- PIMA COUNTY MONITORING NETWORK                |             |               |                    |                     |            |                |                     |                   |                                  |         |                          |
| SITE NAME AND LOCATION                              | SITE ID (a) | PARAMETER (b) | CLASSIFICATION (c) | DATES (d)           | METHOD (e) | ELEV. FEET (f) | SMPL HEIGHT (M) (g) | SPATIAL SCALE (h) | SMPL FREQ (i)                    | POC (j) | MONITORING SITE TYPE (h) |
| GERONIMO<br>2498 N. GERONIMO                        | 04-019-1113 | 81102         | SLAMS              | June- 07<br>PRESENT | 122        | 2452           | 4.6                 | NEIGHBORHOOD      | CONTINUOUS                       | 1       | POPULATION EXPOSURE      |
| SOUTH TUCSON<br>1601 S. 6TH AVE.                    | 04-019-1001 | 81102         | SLAMS              | Sep-88<br>PRESENT   | 127<br>127 | 2420           | 6.9                 | NEIGHBORHOOD      | 1 DAY<br>collocated every 6 day  | 1<br>2  | POPULATION EXPOSURE      |
| CORONA DE TUCSON<br>22000 S. HOUGHTON RD.           | 04-019-0008 | 81102         | SLAMS              | Mar-87<br>PRESENT   | 126        | 3078           | 2.1                 | REGIONAL          | 6 DAY                            | 1       | BACKGROUND               |
| SANTA CLARA<br>6910 S. SANTA CLARA AVE.             | 04-019-1026 | 81102         | SLAMS              | Jul-94<br>PRESENT   | 126<br>126 | 2540           | 6.45                | NEIGHBORHOOD      | 6 DAY<br>collocated every 12 day | 1       | POPULATION EXPOSURE      |
| GREEN VALLEY<br>601 N. LA CANADA DR.                | 04-019-1030 | 81102         | SLAMS              | Feb-01<br>PRESENT   | 122        | 2910           | 4.25                | NEIGHBORHOOD      | CONTINUOUS                       | 1       | POPULATION EXPOSURE      |
| ORANGE GROVE<br>3401 W. ORANGE GROVE RD.            | 04-019-0011 | 81102         | SLAMS              | Jan-85<br>PRESENT   | 127<br>127 | 2234           | 2.65                | NEIGHBORHOOD      | 1 DAY<br>collocated every 6 day  | 2<br>4  | HIGHEST CONCENTRATION    |
| TANGERINE<br>12101 N. CAMINO DE OESTE               | 04-019-1018 | 81102         | SLAMS              | Jan-94<br>PRESENT   | 126        | 2638           | 4.5                 | URBAN             | 6 DAY                            | 1       | BACKGROUND               |
| LEAD -PIMA COUNTY MONITORING NETWORK                |             |               |                    |                     |            |                |                     |                   |                                  |         |                          |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD          | 04-019-1028 | 14129         | SLAMS              | Feb-12<br>May-16    | 110<br>110 | 2286           | 2.0                 | NEIGHBORHOOD      | 6DAY<br>Collocated every 12 days | 1<br>2  | POPULATION EXPOSURE      |
| CHEMICAL SPECIATION -PIMA COUNTY MONITORING NETWORK |             |               |                    |                     |            |                |                     |                   |                                  |         |                          |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD          | 04-019-1028 | 88502         | SLAMS              | Feb-02<br>PRESENT   | 810        | 2286           | 3.0                 |                   | 3 DAY                            | 5       | POPULATION EXPOSURE      |

## 2016 Ambient Air Monitoring Network Plan

| 2016 Ambient Air Monitoring Network Summary Table<br>PM2.5- PIMA COUNTY MONITORING NETWORK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |               |                    |                    |            |                |                     |                   |                                 |         |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|--------------------|--------------------|------------|----------------|---------------------|-------------------|---------------------------------|---------|--------------------------|
| SITE NAME AND LOCATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SITE ID (a) | PARAMETER (b) | CLASSIFICATION (c) | DATES (d)          | METHOD (e) | ELEV. FEET (f) | SMPL HEIGHT (M) (g) | SPATIAL SCALE (h) | SMPL FREQ (i)                   | POC (j) | MONITORING SITE TYPE (h) |
| GERONIMO<br>2498 N. GERONIMO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 04-019-1113 | 88501         | OTHER              | July-03<br>PRESENT | 733        | 2452           | 4.6                 | NEIGHBORHOOD      | CONTINUOUS                      | 3       | POPULATION EXPOSURE      |
| GREEN VALLEY<br>601 N. LA CANADA DR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 04-019-1030 | 88501         | OTHER              | July-03<br>PRESENT | 733        | 2910           | 4.8                 | NEIGHBORHOOD      | CONTINUOUS                      | 3       | POPULATION EXPOSURE      |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 04-019-1028 | 88101         | SLAMS              | Jan-99<br>PRESENT  | 118<br>118 | 2286           | 3.1                 | NEIGHBORHOOD      | 3 DAY<br>collocated every 6 day | 1<br>2  | POPULATION EXPOSURE      |
| CHILDREN'S PARK NCore<br>400 W. RIVER ROAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 04-019-1028 | 88101         | SLAMS              | Jan-11<br>PRESENT  | 170        | 2286           | 4.3                 | NEIGHBORHOOD      | CONTINUOUS                      | 3       | POPULATION EXPOSURE      |
| ORANGE GROVE<br>3401 W. ORANGE GROVE RD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 04-019-0011 | 88101         | SLAMS              | Jan-99<br>PRESENT  | 118        | 2234           | 2.65                | NEIGHBORHOOD      | 3 DAY                           | 1       | POPULATION EXPOSURE      |
| ROSE ELEMENTARY<br>710 W. MICHIGAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 04-019-1032 | 88501         | OTHER              | July-03<br>PRESENT | 733        | 2387           | 4.9                 | NEIGHBORHOOD      | CONTINUOUS                      | 3       | POPULATION EXPOSURE      |
| COACHLINE<br>9597 N. COACHLINE BLVD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 04-019-1034 | 88501         | OTHER              | July-03<br>PRESENT | 733        | 2100           | 4.9                 | NEIGHBORHOOD      | CONTINUOUS                      | 3       | POPULATION EXPOSURE      |
| <p>Key:</p> <ul style="list-style-type: none"> <li>a - Site ID - site identification code used in the AQS database</li> <li>b - Parameter - code used in the AQS database to describe the pollutant monitored</li> <li>c - Classification – described on page 2</li> <li>d - Dates - dates sampling began and ended</li> <li>e - Method - code used in the AQS database indicating the type of instrument used</li> <li>f - Elev. feet - site elevation in feet</li> <li>g - SPL (M) Height - sample inlet height in meters, specific height range required for uniform collection</li> <li>h - Spatial Scale and Monitoring site type - described on page 6</li> <li>i - SMPL Freq - frequency of sampling days</li> <li>j - POC - parameter occurrence code used to distinguish between two or more instruments measuring the same parameter at the same time</li> </ul> <p>Information provided based on EPA'S 2016 Air Quality System (AQS) data.</p> |             |               |                    |                    |            |                |                     |                   |                                 |         |                          |

## 2016 Ambient Air Monitoring Network Plan

### IV. CURRENT MONITORING NETWORK EVALUATIONS

#### PM<sub>10</sub> MONITORING NETWORK REQUIREMENTS

The PDEQ PM<sub>10</sub> network consists of seven monitoring sites in eastern Pima County, Arizona. The 2016 network used several different types of PM<sub>10</sub> samplers: R& P Partisol 2000, R& P Partisol-Plus 2025 Sequential and BAM 1020. **40 CFR Part 58, app. D, 4.6** Particulate matter (PM<sub>10</sub>) design criteria, provided guidance in determining the minimum number of required PM<sub>10</sub> SLAMS sites for 2016.

**2016 PM<sub>10</sub> Design Criteria**  
**Table 5**

| Population<br>Pima County                           | MSA 8520<br>Tucson<br>Population<br>Category | Max<br>Concentration<br>site<br>2014-2016 | Max<br>Concentration<br>( $\mu\text{g}/\text{m}^3$ ) | PM <sub>10</sub> Sites<br># Required | PM <sub>10</sub> Sites<br># Operating |
|-----------------------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------------------------------|---------------------------------------|
| 2010 Census<br>980,263                              | 500,000 –<br>1,000,000                       | Geronimo                                  | 99                                                   | Requires 1-2<br>SLAMS<br>monitors    | 7 SLAMS<br>monitors                   |
| <sup>a</sup> 2015 Estimated<br>Population 1,010,025 | >1,000,000                                   |                                           |                                                      | 2-4 SLAMS<br>monitors                |                                       |

a. U.S. Census Bureau 2015 population estimate of the Tucson area (MSA 8520) is 1,010,025.

#### Violation History

The PM<sub>10</sub> 24 hour standard remains at 150  $\mu\text{g}/\text{m}^3$ . Since the promulgation of the PM<sub>10</sub> standard, July 31, 1987, there has been one violation of the standard. In 1999, the PM<sub>10</sub> standard was violated with four recorded exceedances at the Orange Grove location and two exceedances at the South Tucson location. Subsequently, the monitoring schedules for the Orange Grove and South Tucson locations have been changed from every six day sampling to every day sampling, as indicated in **40 CFR Part 50, app. K** and **40 CFR Part 58.13**. Exceedances of the 24 hour standard have been recorded at monitoring sites in the PDEQ PM<sub>10</sub> network at the following locations: In 2013, one exceedance on April 8<sup>th</sup> at the South Tucson location and on April 9<sup>th</sup> there was one exceedance each, at the South Tucson, Geronimo, and Green Valley stations. These exceedances may also be considered as an Exceptional Event dependent on approval from EPA. In 2014, there were three exceedances on July 25 at the Green Valley, Geronimo, Orange Grove monitoring sites. These exceedances may also be considered as an Exceptional Event dependent on approval from EPA. In 2015 and 2016, there were no recorded exceedances for PM<sub>10</sub>.

## 2016 Ambient Air Monitoring Network Plan

### Quality Assurance for Particulate Matter PM<sub>10</sub>

All data quality assessment requirements, as outlined in **40 CFR Part 58, app. A**, have been met for 2016. The precision of PM<sub>10</sub> data is derived from the co-located PM<sub>10</sub> samplers at the South Tucson, Santa Clara and Orange Grove sites; the difference in concentration between the two samplers running side-by-side is used to calculate the precision of the data. At the end of each calendar quarter, a combined precision probability interval for monitors is calculated by EPA.

The accuracy of PM<sub>10</sub> sampling is assessed by auditing the flow rate of at least 25% of the samplers each calendar quarter, such that each sampler is audited at least once per year. The difference in the flow rate between the audit flow measurement and the flow indicated by the sampler is used to calculate accuracy.

**Table 6**

| Protocol               | Instrument                                              | Frequency       | Date Completed 2016                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|---------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flow rate verification | Met One BAM 1020<br>R&P TEOM 1400                       | Weekly          |                                                                                                                                                                                                                                                                                                                                                                                            |
| Flow Rate Audit        | Bam 1020                                                | Semi - Annually | Green Valley 03/17, 06/17, 09/14, 12/05<br>Geronimo 03/18, 06/21, 09/16, 12/06                                                                                                                                                                                                                                                                                                             |
| Flow rate verification | R&P Partisol 2000,<br>R&P Partisol-Plus 2025 Sequential | Monthly         |                                                                                                                                                                                                                                                                                                                                                                                            |
| Flow Rate Audit        | R&P Partisol 2000,<br>R&P Partisol-Plus 2025 Sequential | Semi - Annually | Corona de Tucson 03/18, 06/10, 09/14, 12/01<br>Santa Clara 03/17, 06/21, 09/14, 12/16<br>Santa Clara (co-located) 03/17, 06/21, 09/14, 12/16<br>Tangerine 03/21, 06/22, 09/13, 12/06<br>South Tucson 03/18, 06/13, 09/16, 12/16<br>South Tucson (co-located) 03/18, 06/20, 09/16, 12/16<br>Orange Grove 03/15, 06/13, 09/13, 12/06<br>Orange Grove (co-located) 03/15, 06/13, 09/13, 12/06 |
| NPAP Audit             |                                                         |                 | None                                                                                                                                                                                                                                                                                                                                                                                       |

**Table 7**

| Collocated PM <sub>10</sub> Monitors |                                 |                    |                       |
|--------------------------------------|---------------------------------|--------------------|-----------------------|
| Method                               | # Required Collocation Monitors | # Primary Monitors | # Collocated Monitors |
| 81102                                | 1                               | 7                  | 3                     |

## 2016 Ambient Air Monitoring Network Plan

**Table 8**  
**Annual summary statistics: NAAQS: 150  $\mu\text{g}/\text{m}^3$  24- Hour Average.**

| <b>Year<br/>2016</b>     | <b>Highest<br/>24- Hr<br/>Value</b> | <b>2<sup>nd</sup><br/>Highest<br/>24-Hour<br/>Value</b> | <b>Annual<br/>Average</b> |
|--------------------------|-------------------------------------|---------------------------------------------------------|---------------------------|
| Site                     |                                     |                                                         |                           |
| Orange Grove<br>0011     | <b>83</b>                           | <b>56</b>                                               | <b>23.4</b>               |
| Corona de<br>Tucson 0008 | <b>45</b>                           | <b>29</b>                                               | <b>15.2</b>               |
| Santa Clara<br>1026      | <b>53</b>                           | <b>42</b>                                               | <b>22.9</b>               |
| Green Valley<br>1030     | <b>63</b>                           | <b>57</b>                                               | <b>18.4</b>               |
| Geronimo 1113            | <b>99</b>                           | <b>67</b>                                               | <b>24.8</b>               |
| Tangerine<br>1018        | <b>54</b>                           | <b>34</b>                                               | <b>17.7</b>               |
| South Tucson<br>1001     | <b>80</b>                           | <b>74</b>                                               | <b>24.5</b>               |

### Particulate Matter Weigh Lab

Pima County Department of Environmental Quality operates a filter weigh lab for the processing of Pima County's  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  network filters, excluding  $\text{PM}_{2.5}$  speciation filters. This weigh lab follows all requirements set forth in **Appendix L of 40 CFR Part 50**.

### Sampling Schedule Calculation

The design value for the Tucson area network was determined using the  $\text{PM}_{10}$  SIP Development Guideline, Section 6.3.1 "Table look-up" procedure. Three years of sampling data, 2014 – 2016, were used. For that period, the Geronimo monitoring location was determined to have the highest design value (including possible exceptional events). That value was  $113\mu\text{g}/\text{m}^3$ . The ratio of this value to the 24 hour standard of  $150\mu\text{g}/\text{m}^3$ , .76, was then compared to the brackets in Figure 1 from 40 CFR 58.12(e) to arrive at a minimum  $\text{PM}_{10}$  sampling frequency of every sixth day. Geronimo is a continuous monitor sampling site.

## 2016 Ambient Air Monitoring Network Plan

### PM<sub>2.5</sub> MONITORING NETWORK REQUIREMENTS

The PDEQ PM<sub>2.5</sub> network consists of six monitoring sites in eastern Pima County, Arizona, **40 CFR Part 58.20, App. D. 4.7.** PM<sub>2.5</sub> design criteria provided guidance on the required number of SLAMS monitors. Two SLAMS Federal Reference Method (FRM) monitors were initiated in January, 1999 at the Orange Grove and Children's Park sites. In addition to two FRM SLAMS monitors, Pima County operates an FEM SLAMS continuous monitor, and four non-regulatory continuous monitors.

#### 2016 PM<sub>2.5</sub> Design Criteria

**Table 9**

#### PM<sub>2.5</sub> SLAMS (FRM and FEM)

| Population<br>Pima<br>County                 | MSA 8520<br>Tucson<br>Population<br>Category | Design Value<br>Site | Annual<br>Design<br>Value<br>Years<br>2014-<br>2016 | Daily<br>Design<br>Value<br>Years<br>2014-<br>2016 | PM <sub>2.5</sub> Sites<br># Required              | PM <sub>2.5</sub> Sites<br># Operating |
|----------------------------------------------|----------------------------------------------|----------------------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------|
| 2010 Census<br>980,263                       | 500,000 –<br>1,000,000                       | Orange Grove         | 5.8µg/m <sup>3</sup>                                | 15µg/m <sup>3</sup>                                | Requires 1<br>SLAMS<br>monitor<br><85% of<br>NAAQS | 2 SLAMS monitors                       |
| 2015<br>Estimated<br>Population<br>1,010,025 | >1,000,000                                   |                      |                                                     |                                                    | Requires 2<br>SLAMS<br>monitors                    |                                        |

**Table 10**

| Collocated PM <sub>2.5</sub> Monitors |                                    |                    |                          |
|---------------------------------------|------------------------------------|--------------------|--------------------------|
| Method                                | # Required Collocation<br>Monitors | # Primary Monitors | # Collocated<br>Monitors |
| 88101 Method<br>118                   | 1                                  | 2                  | 1                        |

General Statement regarding changes to the PM<sub>2.5</sub> network:

PDEQ does not have any violating monitors or proposals to move or change any monitors at this time. In the event of proposed changes to the PM<sub>2.5</sub> network or violating monitors, PDEQ would detail all information and present it to the public for comment and would forward all comments and information to EPA for approval. After approval, PDEQ would then initiate any changes.



## 2016 Ambient Air Monitoring Network Plan

### Regional Transport or Background:

ADEQ operates an FEM monitor at their Alamo Lake site for regional background, and an FEM monitor at their Yuma Supersite for regional transport.

The PDEQ SLAMS FRM monitors are filter-based low-volume samplers that collect a sample for 24 hours on a 1 in 3 day cycle. A co-located sampler at the Children's Park NCore site runs on a 1 in 6 day cycle for precision assessment.

Continuous PM<sub>2.5</sub> monitoring was initiated in May, 2000 at the Green Valley site using Beta Mass Attenuation (Met One BAM 1020) and a sharp-cut cyclone. This installation was a pilot project and was followed by similar installations at the Rose Elementary and Coachline monitoring sites. All three sites were a part of the EMPACT project (Environmental Monitoring for Public Access and Community Tracking), designed to provide near real-time data to the public via the internet and PDEQ web pages. A fourth monitor was added at the Geronimo site to provide fine particulate data for AQI reporting. These monitors provide automatic concentration measurement on an hourly basis, and output the reading to the site data logger, which is then polled every hour, and the data posted on the PDEQ website. The PM<sub>2.5</sub> monitors at these four sites are operated as non-regulatory, intended only to provide information to the public. They are operated under the same Quality Control and Quality Assurance protocols as regulatory monitors to assure meaningful data are provided, but they are operated using alternative instrument settings (50 minute sample, 4 minute count time) that do not conform to FEM designation parameters for PM<sub>2.5</sub>. This setting does not compromise the accuracy of the readings, and is inherent in the original design and designation of all FEM PM<sub>10</sub> BAM 1020 monitors. The data obtained by FRM, continuous, FEM and non-regulatory monitors in Tucson are submitted quarterly to the EPA's Air Quality System (AQS) database.

Pima County Department of Environmental Quality operates a filter weigh lab for the processing of Pima County's PM<sub>10</sub> and PM<sub>2.5</sub> network filters, excluding PM<sub>2.5</sub> speciation filters. This weigh lab follows all requirements set forth in **40 CFR Part 50, App. L**.

The PM<sub>2.5</sub> Chemical Speciation Trends Network was established by EPA in 1999 to determine the chemical speciation of fine particulates. PM<sub>2.5</sub> speciation monitoring began in Pima County at the Children's Park location in February, 2002. The samples are analyzed for forty eight elements, cations, nitrate, sulfate, organic and elemental carbon. Analysis and reporting is completed by RTI International.

### Violation History

The PM<sub>2.5</sub> standard (December 14, 2012): the annual PM<sub>2.5</sub> standard is met when the three year average of the spatially averaged annual mean is less than or equal to 12ug/m<sup>3</sup> and the 24 hour standard is met when the three year average of the 98<sup>th</sup> percentile value at each site is less than or equal to 35ug/m<sup>3</sup>. No exceedances of the annual or 24 - hour NAAQS were recorded in Tucson in 2016.

## 2016 Ambient Air Monitoring Network Plan

### Quality Assurance for Particulate Matter PM<sub>2.5</sub>

All data quality assessment requirements as outlined in **40 CFR Part 58, app. A** have been met in 2016, and include both internal and EPA PEP audits, and the co-located sampler at the Children's Park NCore site.

The accuracy of PM<sub>2.5</sub> sampling is assessed by auditing the flow rate every six months. The difference in the flow rate between the audit flow measurement and the flow indicated by the sampler is used to calculate accuracy. A combined accuracy probability interval is calculated for PM<sub>2.5</sub> along with separate probability limits for each audit concentration level for automated analyzers. Pima County reports the results of all valid precision and accuracy tests on a quarterly basis to the Air Quality System (AQS) database.

**Table 11**

| <b>Protocol</b>        | <b>Instrument</b>                                                                                                         | <b>Frequency</b> | <b>Date Completed 2016</b>                                                                                                                                                                                                                                                        |
|------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flow rate verification | Met One BAM 1020                                                                                                          | Weekly           |                                                                                                                                                                                                                                                                                   |
| Flow Rate Audit        | Met One BAM 1020                                                                                                          | Semi - Annually  | Green Valley 03/17, 06/17, 09/14, 12/05<br>Geronimo 03/18, 06/21, 09/16, 12/06<br>Rose Elementary 03/17, 06/17, 09/14, 12/05<br>Coachline 03/21, 06/22, 09/13, 12/06<br>Children's Park 03/22, 06/27, 09/16, 12/16                                                                |
| Flow rate verification | R& P Partisol-Plus 2025<br>Sequential<br>R & P 2000                                                                       | Monthly          |                                                                                                                                                                                                                                                                                   |
| Flow Rate Audit        | R& P Partisol-Plus 2025<br>Sequential<br>R& P 2000 (Co- located)<br>Met One SASS (Speciation)<br>URG – 3000N (Speciation) | Semi - Annually  | Orange Grove 03/15, 06/13, 09/13, 12/06<br>Children's Park 03/15, 06/27, 09/16, 12/16<br>Children's Park (Co-located) 03/15, 06/27, 09/16, 12/16<br>Children's Park (Speciation, SASS) 03/15, 06/27, 09/16, 12/19<br>Children's Park (Speciation, URG) 03/15, 06/27, 09/16, 12/19 |
| NPAP Audit             |                                                                                                                           |                  | Children's Park Met One BAM 1020 2/17, Children's Park R& P Partisol-Plus 2025 11/14, Orange Grove 11/14                                                                                                                                                                          |

## 2016 Ambient Air Monitoring Network Plan

**Table 12**

**Annual summary statistics:** NAAQS PM<sub>2.5</sub>: 12 µg/m<sup>3</sup> Annual Average, 35 µg/m<sup>3</sup> 24 Hour Average.

| <b>Year<br/>2016</b>        | Highest<br>24 HR<br>Value | 2 <sup>nd</sup><br>Highest<br>Value | 98 <sup>th</sup> %<br>Value | Annual<br>Average |
|-----------------------------|---------------------------|-------------------------------------|-----------------------------|-------------------|
| Site                        |                           |                                     |                             |                   |
| Orange Grove                | <b>27.9</b>               | <b>21.3</b>                         | <b>19.2</b>                 | <b>6.3</b>        |
| Children's Park (Meth. 145) | <b>18.4</b>               | <b>17.5</b>                         | <b>13.3</b>                 | <b>5.8</b>        |
| Children's Park (Meth. 170) | <b>22</b>                 | <b>13</b>                           | <b>10.3</b>                 | <b>4.4</b>        |
| Green Valley                | <b>14</b>                 | <b>13</b>                           | <b>14</b>                   | <b>5.0</b>        |
| Geronimo                    | <b>39</b>                 | <b>18</b>                           | <b>19</b>                   | <b>5.3</b>        |
| Rose Elementary             | <b>35</b>                 | <b>16</b>                           | <b>22</b>                   | <b>7.8</b>        |
| Coachline                   | <b>34</b>                 | <b>16</b>                           | <b>19</b>                   | <b>6.7</b>        |

### PM<sub>10</sub> - 2.5 (PM-Coarse) MONITORING NETWORK REQUIREMENTS

Pima County is monitoring for PM- Coarse at the Children's Park NCore station as part of the monitoring requirements for an NCore station. PM-Coarse is the arithmetic difference between separate but concurrent collocated measurements of PM<sub>10</sub> and PM<sub>2.5</sub>, also referred to as PM<sub>10-2.5</sub>. Pima County is following the requirements set forth in **40 CFR Part 50, App O**. The collocation for PM<sub>10-2.5</sub> is fulfilled by the national NCore Network.

The PM<sub>10-2.5</sub> is described on page 39.

**Table 13**

#### PM-Coarse Annual summary statistics

| <b>Year<br/>2016</b>                                                  | Highest 24- HR<br>Value | 2nd Highest 24-<br>Hour Value | Annual Average |
|-----------------------------------------------------------------------|-------------------------|-------------------------------|----------------|
| Children's Park NCore<br>PM <sub>10</sub> - PM <sub>2.5</sub> (86101) | <b>62</b>               | <b>30</b>                     | <b>12.41</b>   |

## 2016 Ambient Air Monitoring Network Plan

### OZONE MONITORING NETWORK REQUIREMENTS

Ozone (O<sub>3</sub>) is currently being monitored at seven locations in Tucson and one location in Green Valley. Pima County monitors year round for ozone. EPA has revised the minimum monitoring requirements for ozone. The design criteria for ozone monitoring is described in **40 CFR Part 58, app. D, Table D-2**.

**Table 14**  
**2016 O<sub>3</sub> Design Criteria**

| <b>Population<br/>Pima<br/>County</b>        | <b>MSA 8520<br/>Tucson<br/>Population<br/>Category</b> | <b>Design Value<br/>Site</b> | <b>8- Hour Design<br/>Value<br/>(2014-2016)</b> | <b>O<sub>3</sub> Sites<br/># Required</b> | <b>O<sub>3</sub> Sites<br/># Operating</b> |
|----------------------------------------------|--------------------------------------------------------|------------------------------|-------------------------------------------------|-------------------------------------------|--------------------------------------------|
| 2010 Census<br>980,263                       | 500,000 –<br>1,000,000                                 | Saguaro Park<br>040190021    | .068 ppm                                        | Requires 2 SLAMS<br>monitors              | 8 SLAMS<br>monitors                        |
| 2015<br>Estimated<br>Population<br>1,010,025 | >1,000,000                                             |                              |                                                 | Same requirement                          |                                            |

#### Violation History

On October 26, 2015, EPA strengthened the ozone standard from 0.075 ppm to 0.070 ppm, keeping the form of the standard as the three year average of the fourth highest daily maximum eight hour average ozone concentration. The secondary standard is identical to the primary standard. Pima County has not violated the ozone standard in 2016.

#### Quality Assurance for Ozone

All data quality assessment requirements outlined in **40 CFR Part 58, app. A**, have been met in 2016. The requirements include precision checks a minimum of every other week with a check gas range between 0.01 and 0.10 ppm with Pima County performing the precision check at 0.075 ppm and changing to 0.070 in October, representing the highest level we are likely to achieve. The annual internal audits for accuracy are performed with four point check levels at zero, 0.035ppm, 0.055ppm, and 0.085ppm. Pima County maintains an ozone primary standard which is verified annually for accuracy by the California Air Resources Board in Sacramento.. All valid precision and accuracy tests are reported to the Air Quality System (AQS) database on a quarterly basis.

## 2016 Ambient Air Monitoring Network Plan

### OZONE MONITORING NETWORK REQUIREMENTS

**Table 15**

| <b>Ozone Audit Dates 2016</b>               |
|---------------------------------------------|
| 22 <sup>nd</sup> St. & Craycroft 6/03, 12/8 |
| Children's Park 3/11, 9/22                  |
| Fairgrounds 6/18, 12/16                     |
| Tangerine 6/10, 12/01                       |
| Saguaro Park 6/10, 12/01                    |
| Coachline 3/21, 9/13                        |
| Rose Elementary 6/17, 12/05                 |
| Green Valley 6/17, 12/05                    |
| <b>NPAP Ozone TTP Audit Dates 2016</b>      |
| None                                        |

**Table 16**

**Annual summary statistics: NAAQS: 0.070 ppm 4<sup>th</sup> highest 8- Hour Average**

| <b>Year</b>                              | <b>1<sup>st</sup> Max. 1-HR</b> | <b>1<sup>st</sup> Max.</b> | <b>4<sup>th</sup> Max.</b> |
|------------------------------------------|---------------------------------|----------------------------|----------------------------|
| <b>2016</b>                              | <b>Avg (ppm)</b>                | <b>8- HR Avg</b>           | <b>8- HR Avg</b>           |
| <b>Site</b>                              |                                 | <b>(ppm)</b>               | <b>(ppm)</b>               |
| 22 <sup>nd</sup> St. & Craycroft<br>1011 | <b>.072</b>                     | <b>.063</b>                | <b>.061</b>                |
| Children's Park<br>1028                  | <b>.070</b>                     | <b>.065</b>                | <b>.063</b>                |
| Fairgrounds<br>1020                      | <b>.077</b>                     | <b>.068</b>                | <b>.066</b>                |
| Tangerine<br>1018                        | <b>.072</b>                     | <b>.067</b>                | <b>.064</b>                |
| Saguaro Park<br>0021                     | <b>.080</b>                     | <b>.072</b>                | <b>.069</b>                |
| Coachline<br>1034                        | <b>.067</b>                     | <b>.063</b>                | <b>.060</b>                |
| Rose Elementary<br>1032                  | <b>.078</b>                     | <b>.070</b>                | <b>.066</b>                |
| Green Valley 1030                        | <b>.074</b>                     | <b>.070</b>                | <b>.066</b>                |

## 2016 Ambient Air Monitoring Network Plan

### CARBON MONOXIDE MONITORING NETWORK REQUIREMENTS

Carbon Monoxide is monitored at five locations throughout the eastern Pima County. The revised requirements for Carbon Monoxide **40 CFR Part 58, app. D, 4.2** state that there is no minimum number of CO monitoring sites required. Pima County is operating under the auspices of the CO Limited Maintenance Plan (LMP) and has maintained the same number of sites in order to meet and exceed the requirements of the LMP.

**2016 CO Design Criteria**  
**Table 17**

| <b>Population<br/>Pima County</b>      | <b>MSA 8520<br/>Tucson<br/>Population Category</b> | <b>1- Hour<br/>Design<br/>Value 2015-<br/>2016</b> | <b>CO Monitors<br/># Required</b> | <b>CO Monitors<br/># Operating</b> |
|----------------------------------------|----------------------------------------------------|----------------------------------------------------|-----------------------------------|------------------------------------|
| 2010 Census 980,263                    | 500,000 – 1,000,000                                | 2.0 ppm                                            | No Specific Requirement           | 3 SLAMS monitors<br>2 SP monitors  |
| 2015 Estimated<br>Population 1,010,025 | >1,000,000                                         |                                                    | <sup>a</sup> Requires 1           |                                    |

a. Requires one, collocated with one required Near-Road NO<sub>2</sub> monitor, per **40 CFR Part 58, app. D, 4.2.1 and 4.3.2**. Refer to page 4 of this Plan for additional information on Near-Road Monitoring.

Motor vehicles are the primary source of carbon monoxide (CO) in the Tucson area. In spite of increased vehicular traffic, CO levels have dropped considerably since the county began monitoring in 1973. The dramatic decrease can primarily be contributed to the progress made by automobile manufacturers in meeting federally mandated tailpipe emissions standards and to the state vehicle inspection / maintenance programs.

#### Violation History

No exceedances of the National Ambient Air Quality Standards for CO were recorded in Tucson from 1989 through 2016. In January 1988, the eight - hour health standard of nine parts per million was exceeded once at two monitoring sites on the same day. The last exceedance of the eight - hour standard prior to 1988 occurred in December 1986 at a special purpose microscale location (Broadway / Craycroft). Pima County's status for CO was reclassified to attainment with the implementation of a Limited Maintenance Plan on April 25, 2000 by the EPA. The Carbon Monoxide Limited Maintenance Plan was developed in conjunction with Pima Association of Governments and approved by EPA to help mitigate any future violations. The plan allows for additional mobile monitoring of CO at high volume intersections, and a microscale site located at Golf Links & Kolb was established, September, 2002.

## 2016 Ambient Air Monitoring Network Plan

### CARBON MONOXIDE MONITORING NETWORK REQUIREMENTS

#### Quality Assurance for Carbon Monoxide

All data quality assessment requirements as outlined in **40 CFR Part 58, app. A**, have been met in 2016. The precision of SLAMS automated analyzers is based on one-point precision QC checks with a minimum frequency of every two weeks, when each analyzer is challenged by a known concentration of a check gas. For CO the concentrations are between 1.0 and 10.0 ppm. The requirements include annual audits performed in-house for accuracy. Three levels are reported of the four audit point levels that are used for CO. The audit levels are: level two at 0.900 - 2.99 ppm, level three at 3.0 -7.99 ppm, level four at 8.0 -15.99 ppm and level five at 16.0 -30.99 ppm. All valid precision and accuracy tests are reported to the Air Quality System (AQS) database on a quarterly basis.

**Table 18**

| <b>Carbon Monoxide Audit Dates 2016</b>          |
|--------------------------------------------------|
| Craycroft & 22 <sup>nd</sup> St. 5/18, 11/15     |
| Children's Park 3/10, 9/22,                      |
| Cherry & Glenn; Seasonal 2/08, 11/15             |
| Alvernon & 22 <sup>nd</sup> St. 2/08, 8/19       |
| Golf Links & Kolb; Seasonal 2/08, 11/15          |
| <b>NPAP Carbon Monoxide TTP Audit Dates 2016</b> |
| Cherry Glenn 4/14                                |
| Golf Links and Kolb 4/14                         |

**Table 19**

**Annual summary statistics: NAAQS: 35ppm 1-Hour Average, 9ppm 8- Hour Average**

| <b>Year</b>                          | <b>1<sup>st</sup> Max.</b> | <b>2<sup>nd</sup> Max.</b> | <b>1<sup>st</sup> Max.</b> | <b>2<sup>nd</sup> Max.</b> |
|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| <b>2016</b>                          | <b>1- HR Avg</b>           | <b>1- HR Avg</b>           | <b>8- HR Avg</b>           | <b>8- HR Avg</b>           |
| Site                                 |                            |                            |                            |                            |
| Craycroft & 22 <sup>nd</sup> St 1011 | <b>1.4</b>                 | <b>1.2</b>                 | <b>.7</b>                  | <b>.7</b>                  |
| Alvernon & 22 <sup>nd</sup> St. 1014 | <b>2.1</b>                 | <b>1.8</b>                 | <b>.9</b>                  | <b>.9</b>                  |
| Cherry & Glenn 1021                  | <b>1.7</b>                 | <b>1.7</b>                 | <b>1.4</b>                 | <b>1.2</b>                 |
| Children's Park 1028                 | <b>1.0</b>                 | <b>1.0</b>                 | <b>.7</b>                  | <b>.6</b>                  |
| Golf Links & Kolb 1031               | <b>1.3</b>                 | <b>1.1</b>                 | <b>.8</b>                  | <b>.7</b>                  |



## 2016 Ambient Air Monitoring Network Plan

### NITROGEN DIOXIDE MONITORING NETWORK REQUIREMENTS

Nitrogen dioxide (NO<sub>2</sub>) is currently measured at two locations in Tucson. The Environmental Protection Agency has revised the NO<sub>2</sub> requirements. The **40 CFR Part 58, app. D, 4.3**, design criteria document states that there are no minimum requirements for the number of NO<sub>2</sub> monitoring sites in Pima County.

**2016 NO<sub>2</sub> Design Criteria**

**Table 20**

| <b>Population<br/>Pima County</b>         | <b>MSA 8520<br/>Tucson<br/>Population<br/>Category</b> | <b>Annual<br/>Design<br/>Value</b> | <b>1- Hour 98<sup>th</sup><br/>Percentile<br/>Design<br/>Value</b> | <b># of Required NO<sub>2</sub><br/>Monitors</b>                       | <b># of NO<sub>2</sub><br/>Monitors</b>                       |
|-------------------------------------------|--------------------------------------------------------|------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|
| 2010 Census<br>980,263                    | 500,000 –<br>1,000,000                                 | 8.17ppb                            | 38.9 ppb                                                           | No Requirement                                                         | 2 SLAMS<br>monitors                                           |
| 2015 Estimated<br>Population<br>1,010,025 | >1,000,000                                             |                                    |                                                                    | <sup>a</sup> Require 1 microscale<br><sup>b</sup> Requires 1 area-wide | <sup>c</sup> 1 SLAMS area-<br>wide monitor<br>1 SLAMS monitor |

a. Requires one microscale near-road NO<sub>2</sub> monitor for populations over 1,000,000 per **40 CFR Part 58, app. D, 4.3.2**.

b. Requires one area-wide NO<sub>2</sub> monitor for populations greater than 1,000,000 per **40 CFR Part 58, app. D, 4.3.3(a)**.

#### Historical Nitrogen Dioxide Monitoring

Nitrogen dioxide (NO<sub>2</sub>) levels remain well below federal standards. The Craycroft and 22<sup>nd</sup> St. monitor has been operational since 1973, measuring typical neighborhood NO<sub>2</sub> concentrations. Much of the data has been used in studies measuring the effects of NO<sub>2</sub> as a precursor to ozone formation.

A NO<sub>2</sub> analyzer was operating at the Pomona site from 1988 until 1996, when the site was closed. The site was re-established at the Children's Park location in May, 1998, one mile east of the original Pomona Site, and allows for continued monitoring on the north side of Tucson and in the lower valley area.

A NO<sub>2</sub> analyzer was operating at the Downtown site until early 1989. From 1995 to December 2001, NO<sub>2</sub> monitoring was conducted at Saguaro National Park East to establish baseline conditions in a Class I Wilderness Area.

## 2016 Ambient Air Monitoring Network Plan

### NITROGEN DIOXIDE MONITORING NETWORK REQUIREMENTS

#### Quality Assurance for NO<sub>2</sub>

All data quality assessment requirements outlined in **40 CFR Part 58, app. A**, have been met for 2016. The requirements include precision QC checks with a minimum frequency of every other week with a check gas range between 0.01 and 0.10 ppm and annual internal audits for accuracy with three point check levels between 0.008 - 0.019 ppm, 0.02 - 0.049 ppm, 0.05 - 0.099 ppm and 0.10 - 0.299 ppm . All valid precision and accuracy tests are reported to the Air Quality System (AQS) database on a quarterly basis. The 2016 precision and accuracy tests will be reported in ppb.

**Table 21**

| <b>Nitrogen Dioxide Audit Dates 2016</b>     |             |
|----------------------------------------------|-------------|
| Craycroft & 22 <sup>nd</sup> St.             | 5/13, 11/15 |
| Children's Park                              | 3/11, 9/22  |
| <b>Nitrogen Dioxide TTP Audit Dates 2016</b> |             |
| None                                         |             |

**Table 22**

**Annual summary statistics:** NAAQS: 100 ppb 1- Hour Average (98<sup>th</sup> percentile of the 1-hour concentrations averaged over three years); 53 ppb Annual Average

| <b>Year<br/>2016</b>                 | 1 <sup>st</sup> Max.<br>1- Hour<br>Avg | 1 - Hour<br>98 <sup>th</sup><br>Percentile | Annual<br>Mean |
|--------------------------------------|----------------------------------------|--------------------------------------------|----------------|
| Site                                 |                                        |                                            |                |
| Craycroft & 22 <sup>nd</sup> St 1011 | <b>37.7</b>                            | <b>33.5</b>                                | <b>8.17</b>    |
| Children's Park 1028                 | <b>45.7</b>                            | <b>32.8</b>                                | <b>7.62</b>    |

## 2016 Ambient Air Monitoring Network Plan

### REACTIVE OXIDES OF NITROGEN (NO<sub>y</sub>) MONITORING NETWORK REQUIREMENTS

Reactive Oxides of Nitrogen are currently monitored at one location in Pima County fulfilling the NCore site requirement.

#### Quality Assurance for NO<sub>y</sub>

All data quality assessment requirements outlined in **40 CFR Part 58, app. A**, have been met for 2016. The requirements include precision QC checks with a minimum frequency of every other week with a check gas range between 0.01 and 0.10 ppm and annual internal audits for accuracy with three point check levels between 0.008 - 0.019 ppm, 0.02 – 0.049 ppm and 0.05 – 0.099 ppm . All valid precision and accuracy tests are reported to the Air Quality System (AQS) database on a quarterly basis. The 2016 precision and accuracy tests will be reported in ppb.

**Table 23**

|                                                         |
|---------------------------------------------------------|
| <b>Reactive Oxides of Nitrogen Audit Dates 2016</b>     |
| Children's Park NCore 3/11, 9/23                        |
| <b>Reactive Oxides of Nitrogen TTP Audit Dates 2016</b> |
| None                                                    |
| <b>NPAP Audit Dates 2016</b>                            |
| None                                                    |

**Table 24**

**Annual summary statistics:** reported in ppb

| <b>Year</b>          | <b>1<sup>st</sup> Max.</b> | <b>Annual</b> |
|----------------------|----------------------------|---------------|
| <b>2016</b>          | <b>1- Hour</b>             | <b>Mean</b>   |
| <b>Site</b>          | <b>Avg</b>                 |               |
| Children's Park 1028 | <b>102.0</b>               | <b>9.69</b>   |

## 2016 Ambient Air Monitoring Network Plan

### SULFUR DIOXIDE MONITORING NETWORK REQUIREMENTS

Sulfur Dioxide (SO<sub>2</sub>) is currently monitored at one location in Pima County. On October 1, 2010, an SO<sub>2</sub> trace monitor was added at the Children's Park NCore location as required for an NCore site. The SO<sub>2</sub> monitor at the 22<sup>nd</sup> and Craycroft site was discontinued on December 31, 2010.

The Environmental Protection Agency has revised the SO<sub>2</sub> requirements. The design criteria indicated in **40 CFR Part 58, app. D, 4.4**, states that there are no minimum requirements for the number of SO<sub>2</sub> monitoring sites.

**2016 SO<sub>2</sub> Design Criteria**  
**Table 25**

| <b>Population<br/>Pima<br/>County</b>        | <b>MSA 8520<br/>Tucson<br/>Population<br/>Category</b> | <b>Total<br/>SO<sub>2</sub><br/>[tons/year]<br/>Based on<br/>2011 N EI</b> | <b>Population<br/>Weighted<br/>Emissions<br/>Index<br/>[million<br/>persons- tons<br/>per year]</b> | <b>Data<br/>Requirements<br/>Rule Sources<br/>using<br/>Monitoring</b> | <b>1-<br/>Hour<br/>Design<br/>Value</b> | <b># of<br/>Required<br/>SO<sub>2</sub><br/>Monitors</b> | <b># of SO<sub>2</sub><br/>Monitors</b> |
|----------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------|-----------------------------------------|
| 2010 Census<br>980,263                       | 500,000 –<br>1,000,000                                 | 2,184.9                                                                    | 2194.8                                                                                              |                                                                        | 4.0 ppb                                 | No<br>Requirement                                        | 1 NCore<br>SLAMS                        |
| 2015<br>Estimated<br>Population<br>1,010,025 | >1,000,000                                             |                                                                            |                                                                                                     |                                                                        |                                         | No<br>Requirement                                        |                                         |

#### Historical Sulfur Dioxide Monitoring

Ambient concentrations of sulfur dioxide (SO<sub>2</sub>) in Tucson have historically remained well below all federal standards, and in recent years have been extremely low. With new trace SO<sub>2</sub> monitoring we can now get more accurate readings at very low levels. There are no major stationary sources of SO<sub>2</sub> in the Tucson air planning area.

#### Quality Assurance for SO<sub>2</sub>

All data quality assessment requirements outlined in **40 CFR Part 58, app. A**, have been met for 2016. The requirements include precision checks every other week with a check gas range between 0.01 and 0.10 ppm and annual internal audits for accuracy with three point check levels between 0.0003 - 0.0029 ppm, 0.0030 – 0.0049 ppm and 0.005 – 0.0079 ppm . All valid precision and accuracy tests are reported to the Air Quality System (AQS) database on a quarterly basis.

## 2016 Ambient Air Monitoring Network Plan

**Table 26**

| <b>Sulfur Dioxide Audit Dates 2016</b>     |
|--------------------------------------------|
| Children's Park NCore 3/22, 9/22           |
| <b>Sulfur Dioxide TTP Audit Dates 2016</b> |
| None                                       |

**Table 27**

**Annual summary statistics:** Sulfur Dioxide NAAQS: 75 ppb 1- Hour Average (99<sup>th</sup> percentile of the 1-hour daily maximum concentrations, averaged over 3 years)

| <b>Year</b><br><b>2016</b> | 1 <sup>st</sup> Max.<br>1- Hour<br>Avg | 1-Hour<br>99 <sup>th</sup><br>Percentile | Annual<br>Mean |
|----------------------------|----------------------------------------|------------------------------------------|----------------|
| Site                       |                                        |                                          |                |
| Children's Park NCore 1028 | <b>3.2</b>                             | <b>1.3</b>                               | <b>0.08</b>    |

## 2016 Ambient Air Monitoring Network Plan

### LEAD MONITORING NETWORK REQUIREMENTS

Lead monitoring was performed in Pima County at the Children's Park NCore location until May, when it was discontinued. This was a non-source-oriented monitor.

The sampling schedule for lead was based on the 2016 EPA's monitoring sampling schedule with a one in six day schedule for the primary monitor and a one in twelve day schedule for the collocated lead monitor.

The design criteria indicated in **40 CFR Part 58, app. D, 4.5**, states that there is one required lead monitor.

**2016 Lead Design Criteria**  
**Table 28**

| <b>NCore Site</b>            | <b>MSA 8520<br/>Tucson<br/>Population<br/>Category</b> | <b>Population<br/>Pima<br/>County</b>     | <b>Lead Design<br/>Value</b> | <b># Required<br/>monitors</b> | <b># of Pb<br/>Monitors</b> |
|------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------------|--------------------------------|-----------------------------|
| Children's Park<br>040191028 | 500,000 –<br>1,000,000                                 | 2010 Census<br>980,263                    | 0.00 **                      | 1                              | 1- NCore<br>1- Collocated   |
|                              | >1,000,000                                             | 2015 Estimated<br>Population<br>1,010,025 |                              | 1                              | Same as above               |

\*\* Lead monitoring discontinued May, 2016, per approval by EPA. See attachment A.

### Historical Lead Monitoring

Lead concentrations are extremely low in Tucson. Lead monitoring began in Pima County in 1975 at eight TSP sampling locations. In August, 1978, lead analyses were discontinued at all but two sites. Magnetic Observatory (University of Arizona) and Prince Road were selected to represent a neighborhood site and roadway site, respectively. Lead sampling was started at a third site (Broadway & Swan) in January 1983.

Lead analysis at Magnetic Observatory was discontinued in 1983 due to lack of detectable levels of lead. A TSP sampler was installed at South Tucson in 1991 for purposes of lead analysis. This site, along with the other two remaining sites, (Prince Road and Broadway & Swan) adequately fulfilled the siting criteria for measuring potential highest urban concentrations of lead in the particulate monitoring network.

In March of 1992 the Broadway & Swan lead analysis was discontinued and the TSP samplers from the South Tucson and the Magnetic Observatory sites were moved to the 22<sup>nd</sup> & Craycroft site. 22<sup>nd</sup> & Craycroft and Prince Road sites remained until March of 1997, when lead monitoring was discontinued due to non- detectable concentrations.

## 2016 Ambient Air Monitoring Network Plan

On October 15, 2008 EPA strengthened the lead standard. The primary standard of 1.5 ug/m<sup>3</sup> was lowered to 0.15ug/m<sup>3</sup>, measured as total suspended particles (TSP). The secondary standard is identical to the primary standard. According to the 2005 National Air Emissions Inventory (NEI) from EPA, Pima County had no sources of lead of one ton or more. That meant that Pima County was required to perform area monitoring only, which was done at the Children's Park NCore location. Monitoring and reporting began on February 27, 2012, and was discontinued May 2016 per approval by EPA. See attachment A.

### Quality Assurance for Lead

All data quality assessment requirements outlined in **40 CFR Part 58, app. A**, have been met for 2016. The requirements include quarterly flow rate verification and audits. All valid precision and accuracy tests are reported to the Air Quality System (AQS) database on a quarterly basis.

**Table 29**

| <b>Protocol</b>        | <b>Instrument</b>                 | <b>Frequency</b> | <b>Date Completed 2016</b>                       |
|------------------------|-----------------------------------|------------------|--------------------------------------------------|
| Flow rate verification | Tisch Hi Vol with Brushless Motor | Quarterly        | 2/9, 3/9, 4/7, 4/22<br>Collocated: 2/9, 3/9, 4/7 |
| Flow Rate Audit        |                                   | Semi-Annually    | 3/15, 5/20,<br>Collocated: 03/15, 5/20           |
| NPAP Audit             |                                   |                  | none                                             |

**Table 30**

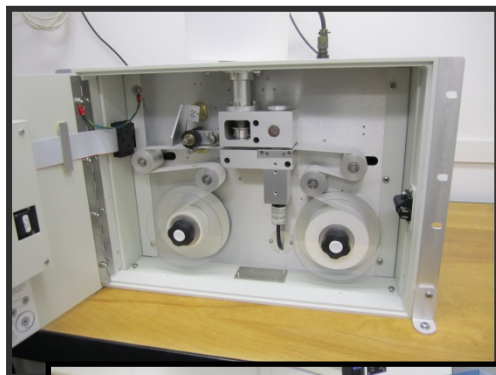
**Annual summary statistics: NAAQS Lead: 0.15 µg/m<sup>3</sup> three month average**

| <b>Year<br/>2016</b> | <b>1<sup>st</sup> Max.<br/>24- Hour<br/>Avg</b> | <b>2<sup>nd</sup> Max.<br/>24- HR Avg</b> | <b>Annual Mean</b> |
|----------------------|-------------------------------------------------|-------------------------------------------|--------------------|
| Site                 |                                                 |                                           |                    |
| Children's Park 1028 | <b>.011</b>                                     | <b>.006</b>                               | <b>.004</b>        |



## V. DETAILED SITE AND MONITOR INFORMATION

**CHILDREN'S PARK NCore: AQS # 040191028**



| Site Description      |                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                                                                                                                                                |
| AQS ID                | 040191028                                                                                                                                                                                                                                                                                                                                                                   |
| Address               | 400 W. River Road, Tucson, AZ                                                                                                                                                                                                                                                                                                                                               |
| Latitude / Longitude  | 32.295150 / -110.982300                                                                                                                                                                                                                                                                                                                                                     |
| Elevation             | 2286                                                                                                                                                                                                                                                                                                                                                                        |
| Surrounding landscape | Gravel in walled compound, dirt parking lot, dry river bed                                                                                                                                                                                                                                                                                                                  |
| Location description  | This site is located at the confluence of the Rillito River and Pima Wash, a natural low spot in the local topography. Single - family residences and a popular county park with exercise trails extend to the north, northwest, and west, respectively. Heavy commercial usage dominates to the south and east, including large shopping malls and automobile dealerships. |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                            | <b>PM<sub>2.5</sub> - Not a Primary Monitor</b>                                                                                                                                                                                             |
| Method Code                                                                 | 170                                                                                                                                                                                                                                         |
| Number of monitors                                                          | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                        | 88101 / 3                                                                                                                                                                                                                                   |
| Basic monitoring objective / Statement of Purpose                           | NAAQS Comparison / Population Exposure                                                                                                                                                                                                      |
| Site Type                                                                   | Population Exposure                                                                                                                                                                                                                         |
| Instrument Manufacturer / Model                                             | Met One / BAM 1020                                                                                                                                                                                                                          |
| FRM/FEM/ARM/other                                                           | FEM                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                                                                                                                                                                 |
| Analytical Lab                                                              | n/a                                                                                                                                                                                                                                         |
| Monitor type                                                                | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                                 | NCore                                                                                                                                                                                                                                       |
| Scale                                                                       | Neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                                | 360                                                                                                                                                                                                                                         |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                      | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                                                                                                                                  |
| Probe height                                                                | 4.3 meters                                                                                                                                                                                                                                  |
| Degrees of unrestricted air flow                                            | 360                                                                                                                                                                                                                                         |
| Distance from supporting structure                                          | 1.73 meters                                                                                                                                                                                                                                 |
| Distance from obstruction on roof                                           | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                       | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                         | 14.3 meters                                                                                                                                                                                                                                 |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                         | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                   | YES                                                                                                                                                                                                                                         |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | YES                                                                                                                                                                                                                                         |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** Continuous PM<sub>2.5</sub> sampling began at this neighborhood scale site on January 23, 2011.

## 2016 Ambient Air Monitoring Network Plan

|                                                                          |                                                                                                                                                       |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>CHILDREN'S PARK NCore</b>                                                                                                                          |
| <b>Pollutant</b>                                                         | <b>PM<sub>2.5</sub> Primary</b>                                                                                                                       |
| Method Code                                                              | 118                                                                                                                                                   |
| Number of monitors                                                       | 1                                                                                                                                                     |
| Parameter code/ POC                                                      | 88101 /1                                                                                                                                              |
| Basic monitoring objective / Statement of Purpose                        | NAAQS Comparison / Population Exposure                                                                                                                |
| Site Type                                                                | Population Exposure                                                                                                                                   |
| Instrument Manufacturer / Model                                          | R & P/ Partisol-Plus 2025                                                                                                                             |
| FRM/FEM/ARM/other                                                        | FRM                                                                                                                                                   |
| Collecting agency / Reporting agency                                     | PDEQ / PDEQ                                                                                                                                           |
| Analytical Lab                                                           | PDEQ                                                                                                                                                  |
| Monitor type                                                             | SLAMS                                                                                                                                                 |
| Monitor Network Affiliation                                              | NCore                                                                                                                                                 |
| Scale                                                                    | Neighborhood                                                                                                                                          |
| Number of daily observations                                             | 115                                                                                                                                                   |
| Number / Dates of 24-hour standard exceedances in 2016                   | 0                                                                                                                                                     |
| Historical exceedances                                                   | 0                                                                                                                                                     |
| Current Sampling frequency / Season                                      | Every three days                                                                                                                                      |
| Probe height                                                             | 3.1 meters above the ground on a platform located in a city water well site.                                                                          |
| Degrees of unrestricted air flow                                         | 290, from 280 to 210, includes predominant wind direction from 135 (SE)                                                                               |
| Distance from supporting structure                                       | 2.08 meters                                                                                                                                           |
| Distance from obstruction on roof                                        | n/a                                                                                                                                                   |
| Distance from obstruction not on roof                                    | n/a                                                                                                                                                   |
| Distance from trees                                                      | 8.0 meters                                                                                                                                            |
| Distance to furnace or incinerator flue                                  | n/a                                                                                                                                                   |
| Distance between collocated monitors/ Schedule / Collocated monitor type | 1.2 meters /Every twelve days (after April 27, 2013 every six days) / R& P 2025                                                                       |
| Nearest roads distance & direction to monitor / ADT                      | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000. |
|                                                                          | River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168                                                                    |
|                                                                          |                                                                                                                                                       |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                | Yes                                                                                                                                                   |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                                                                                                   |
| MSA                                                                      | Tucson, AZ 8520                                                                                                                                       |

**Comments:** Sampling began in 1999.

## 2016 Ambient Air Monitoring Network Plan

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|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>CHILDREN'S PARK NCore</b>                                                                                                                          |
| <b>Pollutant</b>                                                         | <b>PM<sub>2.5</sub> Collocated</b>                                                                                                                    |
| Method Code                                                              | 118                                                                                                                                                   |
| Number of monitors                                                       | 1                                                                                                                                                     |
| Parameter code/ POC                                                      | 88101 / POC 2                                                                                                                                         |
| Basic monitoring objective / Statement of Purpose                        | To comply with ambient air quality protocols and standards in order for data to be used for comparison to the NAAQS;                                  |
| Site Type                                                                | Population Exposure                                                                                                                                   |
| Instrument Manufacturer / Model                                          | R & P / Partisol-Plus 2025                                                                                                                            |
| FRM/FEM/ARM/other                                                        | FRM                                                                                                                                                   |
| Collecting agency / Reporting agency                                     | PDEQ / PDEQ                                                                                                                                           |
| Analytical Lab                                                           | PDEQ                                                                                                                                                  |
| Monitor type                                                             | SLAMS                                                                                                                                                 |
| Monitor Network Affiliation                                              | NCore                                                                                                                                                 |
| Scale                                                                    | Neighborhood                                                                                                                                          |
| Number of daily observations                                             | 54                                                                                                                                                    |
| Number / Dates of 24-hour standard exceedances in 2016                   | 0                                                                                                                                                     |
| Historical exceedances                                                   | 0                                                                                                                                                     |
| Current Sampling frequency / Season                                      | Every twelve days; after April 27, 2013 every six days                                                                                                |
| Probe height                                                             | 3.1 meters above the ground on a platform located in a city water well site.                                                                          |
| Degrees of unrestricted air flow                                         | 270, from 290 to 200, includes predominant wind direction from 135 (SE)                                                                               |
| Distance from supporting structure                                       | 2.08 meters                                                                                                                                           |
| Distance from obstruction on roof                                        | n/a                                                                                                                                                   |
| Distance from obstruction not on roof                                    | n/a                                                                                                                                                   |
| Distance from trees                                                      | 8.0 meters                                                                                                                                            |
| Distance to furnace or incinerator flue                                  | n/a                                                                                                                                                   |
| Distance between collocated monitors/ Schedule / Collocated monitor type | 1.2 meters /Every twelve days (after April 27, 2013 every six days) / R& P 2025                                                                       |
| Nearest roads distance & direction to monitor / ADT                      | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000. |
|                                                                          | River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168                                                                    |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                | Yes                                                                                                                                                   |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                                                                                                   |
| MSA                                                                      | Tucson, AZ 8520                                                                                                                                       |

**Comments:** This is the collocated monitor for Children's Park NCore PM<sub>2.5</sub>.

## 2016 Ambient Air Monitoring Network Plan

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|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>CHILDREN'S PARK NCore</b>                                                                                                                          |
| <b>Pollutant</b>                                                         | <b>PM Coarse PM<sub>10</sub>-PM<sub>2.5</sub> (Other)</b>                                                                                             |
| Method Code                                                              | 176                                                                                                                                                   |
| Number of monitors                                                       | 2                                                                                                                                                     |
| Parameter code / POC                                                     | 86101/ 1                                                                                                                                              |
| Basic monitoring objective / Statement of Purpose                        | Research support / NCore requirement                                                                                                                  |
| Site Type                                                                | Population exposure                                                                                                                                   |
| Instrument Manufacturer / Model                                          | R & P / Partisol-Plus 2025 Sampler Pair                                                                                                               |
| Quarterly flow rate Audit dates                                          | 03/15, 06/27, 09/16, 12/16                                                                                                                            |
| FRM/FEM/ARM/other                                                        | FRM                                                                                                                                                   |
| Collecting agency / Reporting agency                                     | PDEQ/ PDEQ                                                                                                                                            |
| Analytical Lab                                                           | PDEQ                                                                                                                                                  |
| Monitor type                                                             | SLAMS                                                                                                                                                 |
| Monitor Network Affiliation                                              | NCore                                                                                                                                                 |
| Scale                                                                    | Neighborhood                                                                                                                                          |
| Number of daily observations                                             | 107                                                                                                                                                   |
| Number / Dates of exceedances in 2016                                    | 0                                                                                                                                                     |
| Historical exceedances                                                   | 0                                                                                                                                                     |
| Current Sampling frequency / Season                                      | Every three days                                                                                                                                      |
| Probe height                                                             | 3.1 meters above the ground on a platform located in a city water well site.                                                                          |
| Degrees of unrestricted air flow                                         | 290, from 280 to 210, includes predominant wind direction from 135 (SE)                                                                               |
| Distance from supporting structure                                       | 2.08 meters                                                                                                                                           |
| Distance from obstruction on roof                                        | n/a                                                                                                                                                   |
| Distance from obstruction not on roof                                    | n/a                                                                                                                                                   |
| Distance from trees                                                      | 8.0 meters                                                                                                                                            |
| Distance to furnace or incinerator flue                                  | n/a                                                                                                                                                   |
| Distance between collocated monitors/ schedule / Collocated monitor type | 1.2 m / 1 in 3 days / n/a                                                                                                                             |
| Nearest roads distance & direction to monitor /ADT                       | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000. |
|                                                                          | River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168                                                                    |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                                                                                                   |
| <b>MSA</b>                                                               | Tucson, AZ 8520                                                                                                                                       |

**Comments:** The subtraction method for determining the coarse PM fraction was initiated in 2011, using a matched pair of Partisol- Plus samplers.

## 2016 Ambient Air Monitoring Network Plan

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|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                         | <b>PM<sub>2.5</sub> SPECIATION</b>                                                                                                                                                                                                          |
| Method code                                                              | 810                                                                                                                                                                                                                                         |
| Number of monitors                                                       | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                     | Speciated parameters/ 5                                                                                                                                                                                                                     |
| Basic monitoring objective / Statement of purpose                        | Research support for the Chemical Speciation Network (CSN)                                                                                                                                                                                  |
| Site type                                                                | Population Exposure                                                                                                                                                                                                                         |
| Instrument Manufacturer / Model                                          | Met One/ Super SASS                                                                                                                                                                                                                         |
| FRM/FEM/ARM/other                                                        | Other                                                                                                                                                                                                                                       |
| Collecting agency / Reporting agency                                     | <b>Pima County Department of Environmental Quality/ RTP</b>                                                                                                                                                                                 |
| Analytical lab                                                           | <b>UCD</b>                                                                                                                                                                                                                                  |
| Monitor type                                                             | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                              | CSN Supplemental ; NCore                                                                                                                                                                                                                    |
| Scale                                                                    | Neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                             | 118                                                                                                                                                                                                                                         |
| Number / Dates of exceedances in 2016                                    | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                   | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                      | Every three days                                                                                                                                                                                                                            |
| Probe height                                                             | 3 meters above the ground on a platform located in a city water well site.                                                                                                                                                                  |
| Degrees of unrestricted air flow                                         | 290, from 290 to 200, includes predominant wind direction from 135 (SE)                                                                                                                                                                     |
| Distance from supporting structure                                       | 1.83 meters                                                                                                                                                                                                                                 |
| Distance from obstruction on roof                                        | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                    | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                      | SASS 5.2 meters                                                                                                                                                                                                                             |
| Distance to furnace or incinerator flue                                  | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/ Schedule / Collocated monitor type | Collocation is fulfilled by the National NCore network.                                                                                                                                                                                     |
| Nearest roads distance & direction to monitor / ADT                      | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                                                                                                                                                                                         |
| MSA                                                                      | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** Sampling began for PM<sub>2.5</sub> Speciation in 2000.

## 2016 Ambient Air Monitoring Network Plan

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|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                            | <b>CARBON MONOXIDE</b>                                                                                                                                                                                                                      |
| Method code                                                                 | 554                                                                                                                                                                                                                                         |
| Number of monitors                                                          | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                        | 42101/ 1                                                                                                                                                                                                                                    |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / NCore requirement                                                                                                                                                                                                        |
| Site type                                                                   | Population Exposure                                                                                                                                                                                                                         |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 48i -TLE                                                                                                                                                                                                                |
| FRM/FEM/ARM/other                                                           | FRM                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                                                                                                                                                                 |
| Analytical lab                                                              | n/a                                                                                                                                                                                                                                         |
| Monitor type                                                                | Special Purpose Monitor / SLAMS January, 2017                                                                                                                                                                                               |
| Monitor Network Affiliation                                                 | NCore                                                                                                                                                                                                                                       |
| Scale                                                                       | Neighborhood                                                                                                                                                                                                                                |
| Number of hourly observations                                               | 8765                                                                                                                                                                                                                                        |
| Number / Dates of standard exceedances in 2016                              | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                      | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                                                                                                                                  |
| Probe height                                                                | 4.25 meters above the ground on a shelter in a city water well site                                                                                                                                                                         |
| Probe material / Residence time                                             | FEP Teflon/ 11.84 seconds                                                                                                                                                                                                                   |
| Degrees of unrestricted air flow                                            | 360                                                                                                                                                                                                                                         |
| Distance from supporting structure                                          | 1.70 meters                                                                                                                                                                                                                                 |
| Distance from obstruction on roof                                           | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                       | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                         | 14.0 meters                                                                                                                                                                                                                                 |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                         | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                                                                                                                         |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** This site began monitoring for Carbon Monoxide in October, 1998.



## 2016 Ambient Air Monitoring Network Plan

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|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                       | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                       | <b>OZONE</b>                                                                                                                                                                                                                                |
| Method code                                                            | 047                                                                                                                                                                                                                                         |
| Number of monitors                                                     | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                   | 44201/ 1                                                                                                                                                                                                                                    |
| Basic monitoring objective / Statement of purpose                      | NAAQS comparison / Maintenance of long term ozone monitoring at this location                                                                                                                                                               |
| Site type                                                              | Population Exposure                                                                                                                                                                                                                         |
| Instrument Manufacturer / Model                                        | Thermo Scientific / 49i                                                                                                                                                                                                                     |
| FRM/FEM/ARM/other                                                      | FEM                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                   | PDEQ/ PDEQ                                                                                                                                                                                                                                  |
| Analytical lab                                                         | n/a                                                                                                                                                                                                                                         |
| Monitor type                                                           | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                            | NCore                                                                                                                                                                                                                                       |
| Scale                                                                  | Neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                           | 365                                                                                                                                                                                                                                         |
| Number / Dates of 8-hour standard exceedances in 2016                  | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                 | One in 1999; One in 2002; One in 2014                                                                                                                                                                                                       |
| Current Sampling frequency / Season                                    | Continuous                                                                                                                                                                                                                                  |
| Probe height                                                           | 4.25 meters above the ground on a shelter located in a city water well site.                                                                                                                                                                |
| Probe material / Residence time                                        | FEP Teflon / 5.9 seconds                                                                                                                                                                                                                    |
| Degrees of unrestricted air flow                                       | 360                                                                                                                                                                                                                                         |
| Distance from supporting structure                                     | 1.73 meters                                                                                                                                                                                                                                 |
| Distance from obstruction on roof                                      | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                  | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                    | 16.4 meters                                                                                                                                                                                                                                 |
| Distance to furnace or incinerator flue                                | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/ schedule/collocated monitor type | n/a                                                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                    | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                    | Yes                                                                                                                                                                                                                                         |
| MSA                                                                    | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** This site began August of 1997 and is a relocation (1.5 kilometers, northeast) of the Pomona site. This site is representative of a neighborhood scale in the north central region of the air planning area where ozone levels are generally expected to be high due to the low altitude and the prevailing southeasterly winds.



## 2016 Ambient Air Monitoring Network Plan

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|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                       | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                       | <b>NITROGEN DIOXIDE</b>                                                                                                                                                                                                                     |
| Method code                                                            | 074                                                                                                                                                                                                                                         |
| Number of monitors                                                     | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                   | 42602/ 1                                                                                                                                                                                                                                    |
| Basic monitoring objective / Statement of purpose                      | NAAQS comparison / Maintenance of long term monitoring at this location                                                                                                                                                                     |
| Site type                                                              | Highest Concentration                                                                                                                                                                                                                       |
| Instrument Manufacturer / Model                                        | Ecotech / 9841 T                                                                                                                                                                                                                            |
| FRM/FEM/ARM/other                                                      | FRM                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                   | PDEQ / PDEQ                                                                                                                                                                                                                                 |
| Analytical lab                                                         | n/a                                                                                                                                                                                                                                         |
| Monitor type                                                           | Special Purpose / SLAMS January, 2017                                                                                                                                                                                                       |
| Monitor Network Affiliation                                            | Proposed NCore                                                                                                                                                                                                                              |
| Scale                                                                  | Neighborhood / Area Wide Monitoring                                                                                                                                                                                                         |
| Number of hourly observations                                          | 8638                                                                                                                                                                                                                                        |
| Number / Dates of standard exceedances in 2016                         | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                 | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                    | Continuous                                                                                                                                                                                                                                  |
| Probe height                                                           | 4.25 meters above the ground on a shelter located in a city water well site                                                                                                                                                                 |
| Probe material / Residence time                                        | FEP Teflon / 9.19 seconds                                                                                                                                                                                                                   |
| Degrees of unrestricted air flow                                       | 360                                                                                                                                                                                                                                         |
| Distance from supporting structure                                     | 1.70 meters                                                                                                                                                                                                                                 |
| Distance from obstruction on roof                                      | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                  | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                    | 12.8 meters                                                                                                                                                                                                                                 |
| Distance to furnace or incinerator flue                                | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/ schedule/collocated monitor type | n/a                                                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                    | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                    | Yes                                                                                                                                                                                                                                         |
| MSA                                                                    | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** The site began monitoring for Nitrogen Dioxide in May, 1998, and is a relocation (1.5 kilometers, northeast) of the Pomona site.

## 2016 Ambient Air Monitoring Network Plan

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|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                       | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                       | <b>REACTIVE OXIDES OF NITROGEN (NO<sub>x</sub>)</b>                                                                                                                                                                                         |
| Method code                                                            | 674                                                                                                                                                                                                                                         |
| Number of monitors                                                     | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                   | 42600/ 1                                                                                                                                                                                                                                    |
| Basic monitoring objective / Statement of purpose                      | Research support / Comply with NCore requirements                                                                                                                                                                                           |
| Site type                                                              | Population Exposure                                                                                                                                                                                                                         |
| Instrument Manufacturer / Model                                        | Thermo Scientific / 42i - Y                                                                                                                                                                                                                 |
| FRM/FEM/ARM/other                                                      | n/a                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                   | PDEQ / PDEQ                                                                                                                                                                                                                                 |
| Analytical lab                                                         | n/a                                                                                                                                                                                                                                         |
| Monitor type                                                           | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                            | NCore                                                                                                                                                                                                                                       |
| Scale                                                                  | neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                           | 8239                                                                                                                                                                                                                                        |
| Number / Dates of standard exceedances in 2016                         | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                 | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / season                                    | Continuous                                                                                                                                                                                                                                  |
| Probe height                                                           | 10.0 meters above the ground on a shelter located in a city water well site                                                                                                                                                                 |
| Probe material / Residence time                                        | FEP Teflon / 0.6 seconds to converter; 6.1 seconds from converter to analyzer.                                                                                                                                                              |
| Degrees of unrestricted air flow                                       | 360                                                                                                                                                                                                                                         |
| Distance from supporting structure                                     | 0.36 meters probe to mast; 7.31 meters probe to shelter                                                                                                                                                                                     |
| Distance from obstruction on roof                                      | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                  | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                    | 12.8 meters, horizontal, inlet well above tree tops                                                                                                                                                                                         |
| Distance to furnace or incinerator flue                                | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/ schedule/collocated monitor type | n/a                                                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                    | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                    | Yes                                                                                                                                                                                                                                         |
| MSA                                                                    | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** The site began monitoring for reactive oxides of nitrogen in October, 2010 for the NCore site requirements, using a Thermo 42i-y instrument with remote converter mounted at the requisite 10 meters.

## 2016 Ambient Air Monitoring Network Plan

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|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                            | <b>SULFUR DIOXIDE</b>                                                                                                                                                                                                                       |
| Method code                                                                 | 560                                                                                                                                                                                                                                         |
| Number of monitors                                                          | 1                                                                                                                                                                                                                                           |
| Parameter code / POC                                                        | 42401/ 1                                                                                                                                                                                                                                    |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Comply with NCore requirements                                                                                                                                                                                           |
| Site type                                                                   | Population Exposure                                                                                                                                                                                                                         |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 43i - TLE                                                                                                                                                                                                               |
| FRM/FEM/ARM/other                                                           | FEM                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                                                                                                                                                                 |
| Analytical lab                                                              | n/a                                                                                                                                                                                                                                         |
| Monitor type                                                                | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                                 | NCore                                                                                                                                                                                                                                       |
| Scale                                                                       | neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                                | 8693                                                                                                                                                                                                                                        |
| Number / Dates of 1-hour standard exceedances in 2016                       | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                      | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                                                                                                                                  |
| Probe height                                                                | 4.25 meters above the ground on a shelter located in a city water well site                                                                                                                                                                 |
| Probe material / Residence time                                             | FEP Teflon / 12.1 seconds                                                                                                                                                                                                                   |
| Degrees of unrestricted air flow                                            | 360                                                                                                                                                                                                                                         |
| Distance from supporting structure                                          | 1.70 meters                                                                                                                                                                                                                                 |
| Distance from obstruction on roof                                           | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                       | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                         | 14.0 meters                                                                                                                                                                                                                                 |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                         | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                                                                                                                         |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** Sulfur Dioxide sampling began October 1, 2010 to conform to NCore site requirements.

## 2016 Ambient Air Monitoring Network Plan

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|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                           | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                           | <b>LEAD Primary</b>                                                                                                                                                                                                                         |
| Method Code                                                                | 110 ICAP spectra (ICP-MS)                                                                                                                                                                                                                   |
| Number of monitors                                                         | 2                                                                                                                                                                                                                                           |
| Parameter code / POC                                                       | 14129/ 1                                                                                                                                                                                                                                    |
| Basic monitoring objective/ Statement of Purpose                           | NAAQS comparison / Comply with NCore requirements                                                                                                                                                                                           |
| Site Type                                                                  | Population Exposure<br>Non- Source -Oriented                                                                                                                                                                                                |
| Instrument Manufacturer / Model                                            | Tisch / Hi –Vol Plus                                                                                                                                                                                                                        |
| FRM/FEM/ARM/other                                                          | n/a                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                       | PDEQ/ PDEQ                                                                                                                                                                                                                                  |
| Analytical Lab                                                             | Pima County Regional Wastewater Reclamation Department (CRAO)                                                                                                                                                                               |
| Analytical Instrument / Method                                             | ICAP Spectra (ICP-MS) / EQL-0510-191                                                                                                                                                                                                        |
| Monitor type                                                               | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                                | Proposed NCore                                                                                                                                                                                                                              |
| Scale                                                                      | Neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                               | 23                                                                                                                                                                                                                                          |
| Number / Dates of rolling three month average standard exceedances in 2016 | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                     | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                        | Every six days                                                                                                                                                                                                                              |
| Probe height                                                               | 2.0 meters                                                                                                                                                                                                                                  |
| Degrees of unrestricted air flow                                           | 300, from 270 to 210, includes predominant wind direction from 135 (SE)                                                                                                                                                                     |
| Distance from supporting structure                                         | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction on roof                                          | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                      | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                        | 8.4 meters                                                                                                                                                                                                                                  |
| Distance to furnace or incinerator flue                                    | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/ Schedule / Collocated monitor type   | 2.3 m / 6 days/ Tisch Hi –Vol Plus                                                                                                                                                                                                          |
| Nearest roads distance & direction to monitor / ADT                        | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                        | Yes                                                                                                                                                                                                                                         |
| MSA                                                                        | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** Lead sampling began February 27, 2012. Lead sampling discontinued May, 2016.

## 2016 Ambient Air Monitoring Network Plan

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|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>CHILDREN'S PARK NCore</b>                                                                                                                                                                                                                |
| <b>Pollutant</b>                                                            | <b>LEAD QA Collocated</b>                                                                                                                                                                                                                   |
| Method Code                                                                 | 110 ICAP spectra (ICP-MS)                                                                                                                                                                                                                   |
| Number of monitors                                                          | 2                                                                                                                                                                                                                                           |
| Parameter code / POC                                                        | 14129 (POC 2 as of March, 2014)                                                                                                                                                                                                             |
| Basic monitoring objective/ Statement of Purpose                            | To comply with ambient air quality protocols and standards in order for data to be used for comparison to the NAAQS                                                                                                                         |
| Site Type                                                                   | Population Exposure<br>Non- Source -Oriented                                                                                                                                                                                                |
| Instrument Manufacturer / Model                                             | Tisch Hi –Vol Plus                                                                                                                                                                                                                          |
| FRM/FEM/ARM/other                                                           | n/a                                                                                                                                                                                                                                         |
| Collecting agency / Reporting agency                                        | PDEQ/ PDEQ                                                                                                                                                                                                                                  |
| Analytical Lab                                                              | Pima County Regional Wastewater Reclamation Department (CRAO)                                                                                                                                                                               |
| Analytical Instrument / Method                                              | ICAP Spectra (ICP-MS) / EQL -0510-191                                                                                                                                                                                                       |
| Monitor type                                                                | SLAMS                                                                                                                                                                                                                                       |
| Monitor Network Affiliation                                                 | Proposed NCore                                                                                                                                                                                                                              |
| Scale                                                                       | Neighborhood                                                                                                                                                                                                                                |
| Number of daily observations                                                | 24                                                                                                                                                                                                                                          |
| Number / Dates of rolling three month average standard exceedances in 2016  | 0                                                                                                                                                                                                                                           |
| Historical exceedances                                                      | 0                                                                                                                                                                                                                                           |
| Current Sampling frequency / Season                                         | Every twelve days; Every six days starting March 7, 2015                                                                                                                                                                                    |
| Probe height                                                                | 2.0 m                                                                                                                                                                                                                                       |
| Degrees of unrestricted air flow                                            | 290, from 270 to 200, includes predominant wind direction from 135 (SE)                                                                                                                                                                     |
| Distance from supporting structure                                          | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction on roof                                           | n/a                                                                                                                                                                                                                                         |
| Distance from obstruction not on roof                                       | n/a                                                                                                                                                                                                                                         |
| Distance from trees                                                         | 6.6 meters                                                                                                                                                                                                                                  |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                                                                                                                         |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | 2.3 m / 12 days/ Tisch Hi –Vol Plus                                                                                                                                                                                                         |
| Nearest roads distance & direction to monitor / ADT                         | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000.<br>River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                                                                                                                         |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                                                                                                                             |

**Comments:** Lead sampling began February 27, 2012. Lead sampling discontinued May, 2016.

## 2016 Ambient Air Monitoring Network Plan

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|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>CHILDREN'S PARK NCore</b>                                                                                                                          |
| <b>Pollutant</b>                                                          | METEOROLOGICAL DATA                                                                                                                                   |
| Method code                                                               | 061, 040, 011                                                                                                                                         |
| Number of monitors                                                        | 4                                                                                                                                                     |
| Parameter code / POC                                                      | 61103, 61104, 62101, 62201                                                                                                                            |
| Basic monitoring objective / Statement of purpose                         | Research support / Source determination for criteria pollutants                                                                                       |
| Site type                                                                 | n/a                                                                                                                                                   |
| Instrument Manufacturer / Model                                           | WD/WS –MET ONE 50.5; Temp/RH – VAISALA HMP45AC                                                                                                        |
| FRM/FEM/ARM/other                                                         | n/a                                                                                                                                                   |
| Collecting agency / Reporting agency                                      | PDEQ, PDEQ                                                                                                                                            |
| Analytical lab                                                            | n/a                                                                                                                                                   |
| Monitor type                                                              | n/a                                                                                                                                                   |
| Scale                                                                     | n/a                                                                                                                                                   |
| Number of daily observations                                              | 361                                                                                                                                                   |
| Number / Dates of 24-hour standard exceedances in 2016                    | n/a                                                                                                                                                   |
| Historical exceedances                                                    | n/a                                                                                                                                                   |
| Current Sampling frequency / Season                                       | continuous                                                                                                                                            |
| Probe height                                                              | WD/WS – 10m ; Temp/RH – 4.25m                                                                                                                         |
| Degrees of unrestricted air flow                                          | 360                                                                                                                                                   |
| Distance from supporting structure                                        | n/a                                                                                                                                                   |
| Distance from obstruction on roof                                         | n/a                                                                                                                                                   |
| Distance from obstruction not on roof                                     | n/a                                                                                                                                                   |
| Distance from trees                                                       | WD/WS – 16.5m ; Temp/RH – 12.8m                                                                                                                       |
| Distance to furnace or incinerator flue                                   | n/a                                                                                                                                                   |
| Distance between collocated monitors / Schedule / Collocated monitor type | n/a                                                                                                                                                   |
| Nearest roads distance & direction to monitor / ADT                       | Arizona State Route 77 runs north - south 0.5 kilometers to the east, providing six lanes of heavily used arterial routing with a 2012 ADT of 44,000. |
|                                                                           | River Road runs east – west 0.5 kilometers to the north, with a 2013 ADT of 37,168                                                                    |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | YES                                                                                                                                                   |
| MSA                                                                       | Tucson, AZ 8520                                                                                                                                       |

## 2016 Ambient Air Monitoring Network Plan

**GREEN VALLEY: AQS # 040191030**



| Site Description      |                                                                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | GREEN VALLEY                                                                                                                                                 |
| AQS ID                | 040191030                                                                                                                                                    |
| Address               | 601 N. La Canada Drive, Green Valley, AZ                                                                                                                     |
| Latitude / Longitude  | 31.87952 / -110.996440                                                                                                                                       |
| Elevation             | 2910                                                                                                                                                         |
| Surrounding landscape | Dirt, sparse desert vegetation                                                                                                                               |
| Location description  | This site is situated in a residential / commercial area. Open pit copper mines and tailings ponds are located four kilometers to the west of the community. |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

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|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>GREEN VALLEY</b>                                                               |
| <b>Pollutant</b>                                                          | <b>PM<sub>10</sub></b>                                                            |
| Method code                                                               | 122                                                                               |
| Number of monitors                                                        | 1                                                                                 |
| Parameter code / POC                                                      | 81102/1                                                                           |
| Basic monitoring objective / Statement of purpose                         | NAAQS comparison / Provide air pollution data to the public in a timely manner    |
| Site type                                                                 | Population Exposure                                                               |
| Instrument Manufacturer / Model                                           | Met One/ BAM 1020                                                                 |
| FRM/FEM/ARM/other                                                         | FEM                                                                               |
| Collecting agency / Reporting agency                                      | PDEQ / PDEQ                                                                       |
| Analytical lab                                                            | n/a                                                                               |
| Monitor type                                                              | Special Purpose/ SLAMS                                                            |
| Scale                                                                     | Neighborhood                                                                      |
| Number of hourly observations                                             | 8434                                                                              |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                                 |
| Historical exceedances                                                    | April 9, 2013; July 25, 2014.                                                     |
| Current Sampling frequency / Season                                       | Continuous                                                                        |
| Probe height                                                              | 4.25 meters above the ground on a shelter near the Pima County Government Center. |
| Degrees of unrestricted air flow                                          | 360                                                                               |
| Distance from supporting structure                                        | 1.63 meters                                                                       |
| Distance from obstruction on roof                                         | n/a                                                                               |
| Distance from obstruction not on roof                                     | n/a                                                                               |
| Distance from trees                                                       | 12.5 meters                                                                       |
| Distance to furnace or incinerator flue                                   | n/a                                                                               |
| Distance between collocated monitors / Schedule / Collocated monitor type | n/a                                                                               |
| Nearest roads distance & direction to monitor / ADT                       | 100 meters west of La Canada with a 2015 ADT of 14,332                            |
|                                                                           | 0.5 kilometers west of Interstate 19 with a 2011 ADT of 31,000                    |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                               |
| CBSA                                                                      | Green Valley, AZ 46060                                                            |
| MSA                                                                       | Tucson, AZ 8520                                                                   |

**Comments:** This site is fifty kilometers south of Downtown Tucson in the retirement community of Green Valley. PM<sub>10</sub> monitoring commenced in September 1989 at the established TSP site there. ASARCO and Freeport-McMoRan operate several open pit mines and tailings ponds just west of the community. The monitoring objective is to monitor the population exposure to this potentially significant source of airborne particulates. The monitor was relocated in February 2001, approximately 1 kilometer north of the original Esperanza site, to the Pima County Government Center at 601 N. La Canada Drive. The new site is considered a continuation of the original site. PM<sub>10</sub> levels were below the health standards in the years 1989 through 2012. In 2013, there was one exceedance resulting from an intense regional dust storm that may be considered as an Exceptional Event, dependent on approval from EPA.



## 2016 Ambient Air Monitoring Network Plan

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|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>GREEN VALLEY</b>                                                               |
| <b>Pollutant</b>                                                          | <b>PM<sub>2.5</sub></b>                                                           |
| Method code                                                               | 733                                                                               |
| Number of monitors                                                        | 1                                                                                 |
| Parameter code / POC                                                      | 88501/3                                                                           |
| Basic monitoring objective / Statement of purpose                         | Provide air pollution data to the public in a timely manner / Population Exposure |
| Site type                                                                 | Population Exposure                                                               |
| Instrument Manufacturer / Model                                           | Met-One / BAM 1020                                                                |
| FRM/FEM/ARM/other                                                         | other                                                                             |
| Collecting agency / Reporting agency                                      | PDEQ / PDEQ                                                                       |
| Analytical lab                                                            | n/a                                                                               |
| Monitor type                                                              | OTHER                                                                             |
| Scale                                                                     | Neighborhood                                                                      |
| Number of hourly observations                                             | 8238                                                                              |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                                 |
| Historical exceedances                                                    | 0                                                                                 |
| Current Sampling frequency / Season                                       | Continuous                                                                        |
| Probe height                                                              | 4.25 meters above the ground on a shelter near the Pima County Government Center. |
| Degrees of unrestricted air flow                                          | 360                                                                               |
| Distance from supporting structure                                        | 2.03 meters                                                                       |
| Distance from obstruction on roof                                         | n/a                                                                               |
| Distance from obstruction not on roof                                     | n/a                                                                               |
| Distance from trees                                                       | 10.7 meters                                                                       |
| Distance to furnace or incinerator flue                                   | n/a                                                                               |
| Distance between collocated monitors / Schedule / Collocated monitor type | n/a                                                                               |
| Nearest roads distance & direction to monitor / ADT                       | 100 meters west of La Canada with a 2015 ADT of 14,332                            |
|                                                                           | 0.5 kilometers west of Interstate 19 with a 2011 ADT of 31,000                    |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                 | n/a                                                                               |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                               |
| CBSA                                                                      | Green Valley, AZ 46060                                                            |
| MSA                                                                       | Tucson, AZ 8520                                                                   |

**Comments:** This site is fifty kilometers south of Downtown Tucson in the retirement community of Green Valley. This monitor was initially installed in May of 2000 as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. Pima County began reporting the PM<sub>2.5</sub> data to EPA July, 2003.

## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                  |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>GREEN VALLEY</b>                                                              |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                                     |
| Method code                                                                 | 047                                                                              |
| Number of monitors                                                          | 1                                                                                |
| Parameter code / POC                                                        | 44201/1                                                                          |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Provide air pollution data to the public in a timely manner   |
| Site type                                                                   | Population Exposure                                                              |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 49i                                                          |
| FRM/FEM/ARM/other                                                           | FEM                                                                              |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                      |
| Analytical lab                                                              | n/a                                                                              |
| Monitor type                                                                | Special Purpose / SLAMS January, 2017                                            |
| Scale                                                                       | Neighborhood                                                                     |
| Number of daily observations                                                | 361                                                                              |
| Number / Dates of 8-hour standard exceedances in 2016                       | 0                                                                                |
| Historical exceedances                                                      | 0                                                                                |
| Current Sampling frequency / Season                                         | Continuous                                                                       |
| Probe height                                                                | 3.3 meters above the ground on a shelter near the Pima County Government Center. |
| Probe material / Residence time                                             | FEP Teflon / 7.95 seconds                                                        |
| Degrees of unrestricted air flow                                            | 360                                                                              |
| Distance from supporting structure                                          | 1.4 meters                                                                       |
| Distance from obstruction on roof                                           | n/a                                                                              |
| Distance from obstruction not on roof                                       | n/a                                                                              |
| Distance from trees                                                         | 8.5 meters                                                                       |
| Distance to furnace or incinerator flue                                     | n/a                                                                              |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                              |
| Nearest roads distance & direction to monitor / ADT                         | 100 meters west of La Canada with a 2015 ADT of 14,332                           |
|                                                                             | 0.5 kilometers west of Interstate 19 with a 2011 ADT of 31,000                   |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                              |
| CBSA                                                                        | Green Valley, AZ 46060                                                           |
| MSA                                                                         | Tucson, AZ 8520                                                                  |

**Comments:** This site is fifty kilometers south of Downtown Tucson in the retirement community of Green Valley. This site was initially established in April of 2002 as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. Pima County began reporting the ozone data to EPA July, 2003.

## 2016 Ambient Air Monitoring Network Plan

**CORONA de TUCSON:** AQS # 040190008



| Site Description      |                                                                     |
|-----------------------|---------------------------------------------------------------------|
| Site Name             | CORONA de TUCSON                                                    |
| AQS ID                | 040190008                                                           |
| Address               | 22001 S. Houghton Road, Tucson, AZ                                  |
| Latitude / Longitude  | 32.00474 / -110.79260                                               |
| Elevation             | 3078                                                                |
| Surrounding landscape | Gravel within enclosure; dirt, sparse desert vegetation surrounding |
| Location description  | This site is situated in an undisturbed natural desert area.        |
|                       |                                                                     |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                |
|-----------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>CORONA de TUCSON</b>                                        |
| <b>Pollutant</b>                                                            | <b>PM<sub>10</sub></b>                                         |
| Method code                                                                 | 126                                                            |
| Number of monitors                                                          | 1                                                              |
| Parameter code / POC                                                        | 81102/ 1                                                       |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Upwind Background                           |
| Site type                                                                   | Upwind Background                                              |
| Instrument Manufacturer/Model                                               | R&P 2000                                                       |
| FRM/FEM/ARM/other                                                           | FRM                                                            |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                    |
| Analytical lab                                                              | PDEQ                                                           |
| Monitor type                                                                | SLAMS                                                          |
| Scale                                                                       | Regional                                                       |
| Number of daily observations                                                | 58                                                             |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                              |
| Historical exceedances                                                      | 0                                                              |
| Current Sampling frequency / Season                                         | Every six days                                                 |
| Probe height                                                                | 2.08 meters                                                    |
| Degrees of unrestricted air flow                                            | 360                                                            |
| Distance from supporting structure                                          | n/a                                                            |
| Distance from obstruction on roof                                           | n/a                                                            |
| Distance from obstruction not on roof                                       | n/a                                                            |
| Distance from trees                                                         | 23.4 meters                                                    |
| Distance to furnace or incinerator flue                                     | n/a                                                            |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                            |
| Nearest roads distance & direction to monitor / ADT                         | 1.6 kilometers west of Houghton Road with a 2015 ADT of 11,752 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                            |
| MSA                                                                         | Tucson, AZ 8520                                                |

**Comments:** This site is the only regional scale monitor in the network. PM<sub>10</sub> sampling was started here in September 1988, in conjunction with existing total suspended particulates (TSP) sampling. This site exhibits the lowest network concentrations. TSP sampling was discontinued in May 1989. Hi - Vol sampling for PM<sub>10</sub> was substituted with dichotomous sampling during the last quarter of 1989 in support of the state sponsored Tucson PM<sub>10</sub> Source Apportionment Study. Hi - Vol PM<sub>10</sub> sampling resumed in January 1990. Low -Vol PM<sub>10</sub> R& P 2000 sampling began in March, 2006.

## 2016 Ambient Air Monitoring Network Plan

### ORANGE GROVE: AQS # 040190011



| Site Description      |                                                                                                                                                                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | ORANGE GROVE                                                                                                                                                                                                                                                |
| AQS ID                | 040190011                                                                                                                                                                                                                                                   |
| Address               | 3401 W. Orange Grove Road, Tucson, AZ                                                                                                                                                                                                                       |
| Latitude / Longitude  | 32.32255 / -111.037700                                                                                                                                                                                                                                      |
| Elevation             | 2234                                                                                                                                                                                                                                                        |
| Surrounding landscape | Gravel in fenced compound, dirt road shoulders                                                                                                                                                                                                              |
| Location description  | This site is situated in a residential area with light commerce and industry. There is an asphalt batch plant and redi-mix concrete operations with a large gravel pit less than three kilometers to the west of the site in the Santa Cruz River bed area. |
|                       |                                                                                                                                                                                                                                                             |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                           |                                                                                                                                   |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>ORANGE GROVE</b>                                                                                                               |
| <b>Pollutant</b>                                                          | <b>PM<sub>10</sub> Primary</b>                                                                                                    |
| Method code                                                               | 127                                                                                                                               |
| Number of monitors                                                        | 2                                                                                                                                 |
| Parameter code / POC                                                      | 81102/ 2                                                                                                                          |
| Basic monitoring objective / Statement of purpose                         | NAAQS Comparison / Highest Concentration                                                                                          |
| Site type                                                                 | Highest Concentration                                                                                                             |
| Instrument Manufacturer/Model                                             | R&P 2025 Sequential                                                                                                               |
| FRM/FEM/ARM/other                                                         | FRM                                                                                                                               |
| Collecting agency / Reporting agency                                      | PDEQ /PDEQ                                                                                                                        |
| Analytical lab                                                            | PDEQ                                                                                                                              |
| Monitor type                                                              | SLAMS                                                                                                                             |
| Scale                                                                     | Neighborhood                                                                                                                      |
| Number of daily observations                                              | 337                                                                                                                               |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                                                                                 |
| Historical exceedances                                                    | Exceedances of the 24 – hour standard: two in 1988, four in 1999, one in 2002, one in 2003, one in 2009 ; one in 2014             |
| Current Sampling frequency / Season                                       | Every day                                                                                                                         |
| Probe height                                                              | 2.2 meters above the ground in a city water well site                                                                             |
| Degrees of unrestricted air flow                                          | 360                                                                                                                               |
| Distance from supporting structure                                        | n/a                                                                                                                               |
| Distance from obstruction on roof                                         | n/a                                                                                                                               |
| Distance from obstruction not on roof                                     | n/a                                                                                                                               |
| Distance from trees                                                       | 19.2 meters                                                                                                                       |
| Distance to furnace or incinerator flue                                   | n/a                                                                                                                               |
| Distance between collocated monitors / Schedule / Collocated monitor type | 1.2 meters /Every day; reported every 6 <sup>th</sup> day/ R& P 2025 Sequential                                                   |
| Nearest roads distance & direction to monitor / ADT                       | 37 meters west of Camino de la Tierra with a 2011 ADT of 7,894 and 70 meters south of Orange Grove Road with a 2015 ADT of 26,928 |
|                                                                           | 2 kilometers east of Interstate 10 with a 2012 ADT of 110,000                                                                     |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                                                                               |
| MSA                                                                       | Tucson, AZ 8520                                                                                                                   |

**Comments:** Established in February 1985, this site is the oldest of the PM<sub>10</sub> monitoring sites in the network. Orange Grove was chosen as the initial PM<sub>10</sub> monitoring site and the design value site for Group II in the Tucson air planning area based on historically high TSP data. This neighborhood scale site is located near the confluence of the Santa Cruz, Rillito, and Canada del Oro Rivers in the Tucson Valley. This site is situated near the freeway and railway tracks, therefore high PM<sub>10</sub> values are expected here. Dichotomous sampling was started at this site in July of 1993. The dichotomous ran in co-location with a HI-VOL- SA/1200 model from 1993 to 1996. The site was converted to dichotomous only operations on October 1, 1996 continuing until December 1998. Hi-Vol sampling resumed in January 1999, but was replaced with co-located low volume sequential samplers in 2004.

## 2016 Ambient Air Monitoring Network Plan

|                                                                           |                                                                                                                                   |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>ORANGE GROVE</b>                                                                                                               |
| <b>Pollutant</b>                                                          | <b>PM<sub>10</sub> Collocated</b>                                                                                                 |
| Method code                                                               | 127                                                                                                                               |
| Number of monitors                                                        | 2                                                                                                                                 |
| Parameter code / POC                                                      | 81102 / 4                                                                                                                         |
| Basic monitoring objective / Statement of purpose                         | To comply with ambient air quality protocols and standards in order for data to be used for comparison to the NAAQS               |
| Site type                                                                 | Highest Concentration                                                                                                             |
| Instrument Manufacturer/Model                                             | R&P 2025 Sequential                                                                                                               |
| FRM/FEM/ARM/other                                                         | FRM                                                                                                                               |
| Collecting agency / Reporting agency                                      | PDEQ /PDEQ                                                                                                                        |
| Analytical lab                                                            | PDEQ                                                                                                                              |
| Monitor type                                                              | SLAMS                                                                                                                             |
| Scale                                                                     | Neighborhood                                                                                                                      |
| Number of daily observations                                              | 322                                                                                                                               |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                                                                                 |
| Historical exceedances                                                    | One in 2002; One in 2009; One in 2014                                                                                             |
| Current Sampling frequency / Season                                       | Every six days                                                                                                                    |
| Probe height                                                              | 2.2 meters above the ground in a city water well site                                                                             |
| Degrees of unrestricted air flow                                          | 360                                                                                                                               |
| Distance from supporting structure                                        | n/a                                                                                                                               |
| Distance from obstruction on roof                                         | n/a                                                                                                                               |
| Distance from obstruction not on roof                                     | n/a                                                                                                                               |
| Distance from trees                                                       | 19.2 meters                                                                                                                       |
| Distance to furnace or incinerator flue                                   | n/a                                                                                                                               |
| Distance between collocated monitors / Schedule / Collocated monitor type | 1.2 meters /Every day ; reported every 6 <sup>th</sup> day/ R& P 2025 Sequential                                                  |
| Nearest roads distance & direction to monitor / ADT                       | 37 meters west of Camino de la Tierra with a 2011 ADT of 7,894 and 70 meters south of Orange Grove Road with a 2015 ADT of 26,928 |
|                                                                           | 2 kilometers east of Interstate 10 with a 2012 ADT of 110,000                                                                     |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                                                                               |
| MSA                                                                       | Tucson, AZ 8520                                                                                                                   |

## 2016 Ambient Air Monitoring Network Plan

|                                                                          |                                                                                                                                   |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>ORANGE GROVE</b>                                                                                                               |
| <b>Pollutant</b>                                                         | <b>PM<sub>2.5</sub></b>                                                                                                           |
| Method code                                                              | 118                                                                                                                               |
| Number of monitors                                                       | 1                                                                                                                                 |
| Parameter code / POC                                                     | 88101/ 1                                                                                                                          |
| Basic monitoring objective / Statement of purpose                        | NAAQS Comparison / Highest expected concentration                                                                                 |
| Site type                                                                | Population Exposure                                                                                                               |
| Instrument Manufacturer / Model                                          | R&P Partisol-Plus 2025                                                                                                            |
| FRM/FEM/ARM/other                                                        | FRM                                                                                                                               |
| Collecting agency / Reporting agency                                     | PDEQ / PDEQ                                                                                                                       |
| Analytical lab                                                           | PDEQ                                                                                                                              |
| Monitor type                                                             | SLAMS                                                                                                                             |
| Scale                                                                    | Neighborhood                                                                                                                      |
| Number of daily observations                                             | 110                                                                                                                               |
| Number / Dates of 24-hour standard exceedances in 2016                   | 0                                                                                                                                 |
| Historical exceedances                                                   | 0                                                                                                                                 |
| Current Sampling frequency / Season                                      | Every three days                                                                                                                  |
| Probe height                                                             | 2.1 meters above the ground in a city water well site                                                                             |
| Degrees of unrestricted air flow                                         | 360                                                                                                                               |
| Distance from supporting structure                                       | n/a                                                                                                                               |
| Distance from obstruction on roof                                        | n/a                                                                                                                               |
| Distance from obstruction not on roof                                    | n/a                                                                                                                               |
| Distance from trees                                                      | 20.3 meters                                                                                                                       |
| Distance to furnace or incinerator flue                                  | n/a                                                                                                                               |
| Distance between colocated monitors / Schedule / Collocated monitor type | n/a                                                                                                                               |
| Nearest roads distance & direction to monitor / ADT                      | 37 meters west of Camino de la Tierra with a 2011 ADT of 7,894 and 70 meters south of Orange Grove Road with a 2015 ADT of 26,928 |
|                                                                          | 2 kilometers east of Interstate 10 with a 2012 ADT of 110,000                                                                     |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                | Yes                                                                                                                               |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                                                                               |
| MSA                                                                      | Tucson, AZ 8520                                                                                                                   |

**Comments:** PM<sub>2.5</sub> sampling began at this neighborhood scale site in January, 1999. It is located near the confluence of the Santa Cruz, Rillito and Canada del Oro Rivers in the Tucson Valley, toward the northwest end of the air planning area. The site is situated near a freeway and railroad tracks.



## 2016 Ambient Air Monitoring Network Plan

### SOUTH TUCSON: AQS # 040191001



| Site Description      |                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Site Name             | SOUTH TUCSON                                                                                                                |
| AQS ID                | 040191001                                                                                                                   |
| Address               | 1601 S. 6 <sup>th</sup> Avenue, South Tucson, AZ                                                                            |
| Latitude / Longitude  | 32.20195 / -110.967900                                                                                                      |
| Elevation             | 2420                                                                                                                        |
| Surrounding landscape | Primarily paved parking lots; gravel and desert landscaping surrounding building.                                           |
| Location description  | This site is situated in a dense residential / commercial area. There are numerous unpaved alleys and lots in the vicinity. |
|                       |                                                                                                                             |

**Comments:** From January 1985 to September 1988 this site approached or exceeded TSP standards. PM<sub>10</sub> sampling began here in September 1988. On March 8, 1993, the samplers were relocated from the original site to the new South Tucson Governmental Complex, which is less than two blocks north and across S. 6<sup>th</sup> Avenue. Levels at this location are representative of area - wide emissions patterns with high population exposure. The annual means for 1989 through 1999 were below the health standard. The 24 - hour NAAQS was exceeded twice in 1999 and 2002. Two co-located PM<sub>10</sub> samplers were operational at this site from June 1991 to June 1999. Co-location of the PM<sub>10</sub> samplers was discontinued when a third sampler was added and every day sampling began on June 23, 1999. In March, 2004, the Hi -Vol samplers were replaced with co-located Low -Vol sequential samplers.

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                          |                                                                                            |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>SOUTH TUCSON</b>                                                                        |
| <b>Pollutant</b>                                                         | <b>PM<sub>10</sub> Primary</b>                                                             |
| Method code                                                              | 127                                                                                        |
| Number of monitors                                                       | 2                                                                                          |
| Parameter code / POC                                                     | 81102 /1                                                                                   |
| Basic monitoring objective / Statement of purpose                        | NAAQS Comparison / Population Exposure                                                     |
| Site type                                                                | Population Exposure                                                                        |
| Instrument Manufacturer / Model                                          | R&P 2025 Sequential                                                                        |
| FRM/FEM/ARM/other                                                        | FRM                                                                                        |
| Collecting agency / Reporting agency                                     | PDEQ/ PDEQ                                                                                 |
| Analytical lab                                                           | PDEQ                                                                                       |
| Monitor type                                                             | SLAMS                                                                                      |
| Scale                                                                    | Neighborhood                                                                               |
| Number of daily observations                                             | 331                                                                                        |
| Number / Dates of 24-hour standard exceedances in 2016                   | 0                                                                                          |
| Historical exceedances                                                   | Exceedances of the 24 – hour standard: two in 1999; two in 2002; one in 2009; two in 2013  |
| Current Sampling frequency / Season                                      | Every day                                                                                  |
| Probe height                                                             | 6.9 meters above the ground on the roof of the South Tucson Governmental Complex Building. |
| Degrees of unrestricted air flow                                         | 360                                                                                        |
| Distance from supporting structure                                       | 2.2 meters                                                                                 |
| Distance from obstruction on roof                                        | n/a                                                                                        |
| Distance from obstruction not on roof                                    | n/a                                                                                        |
| Distance from trees                                                      | 13.2 meters                                                                                |
| Distance to furnace or incinerator flue                                  | n/a                                                                                        |
| Distance between collocated monitors/ Schedule / Collocated monitor type | 1.7 meters/ Every day; reported every 6 <sup>th</sup> day/ R&P 2025 Sequential             |
| Nearest roads distance & direction to monitor / ADT                      | 41 meters east of South 6 <sup>th</sup> Avenue with a 2015 ADT of 17,612                   |
|                                                                          | 528 meters south of 22 <sup>nd</sup> Street with a 2015 ADT of 28,374                      |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                                        |
| MSA                                                                      | Tucson, AZ 8520                                                                            |

## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                                                     |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>SOUTH TUCSON</b>                                                                                                 |
| <b>Pollutant</b>                                                            | <b>PM<sub>10</sub> Collocated</b>                                                                                   |
| Method code                                                                 | 127                                                                                                                 |
| Number of monitors                                                          | 2                                                                                                                   |
| Parameter code / POC                                                        | 81102 / 2                                                                                                           |
| Basic monitoring objective / Statement of purpose                           | To comply with ambient air quality protocols and standards in order for data to be used for comparison to the NAAQS |
| Site type                                                                   | Population Exposure                                                                                                 |
| Instrument Manufacturer / Model                                             | R&P 2025 Sequential                                                                                                 |
| FRM/FEM/ARM/other                                                           | FRM                                                                                                                 |
| Collecting agency / Reporting agency                                        | PDEQ/ PDEQ                                                                                                          |
| Analytical lab                                                              | PDEQ                                                                                                                |
| Monitor type                                                                | SLAMS                                                                                                               |
| Scale                                                                       | Neighborhood                                                                                                        |
| Number of daily observations                                                | 336                                                                                                                 |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                                                                                   |
| Historical exceedances                                                      | One in 1999; one in 2013; one in 2014                                                                               |
| Current Sampling frequency / Season                                         | Every six days                                                                                                      |
| Probe height                                                                | 6.9 meters above the ground on the roof of the South Tucson Governmental Complex Building.                          |
| Degrees of unrestricted air flow                                            | 360                                                                                                                 |
| Distance from supporting structure                                          | 2.2 meters                                                                                                          |
| Distance from obstruction on roof                                           | n/a                                                                                                                 |
| Distance from obstruction not on roof                                       | n/a                                                                                                                 |
| Distance from trees                                                         | 15.4 meters                                                                                                         |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                 |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | 1.7 meters/ Every day; reported every 6 <sup>th</sup> day/ R&P 2025 Sequential                                      |
| Nearest roads distance & direction to monitor / ADT                         | 41 meters east of South 6 <sup>th</sup> Avenue with a 2015 ADT of 17,612                                            |
|                                                                             | 528 meters south of 22 <sup>nd</sup> Street with a 2015 ADT of 28,374                                               |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                 |
| MSA                                                                         | Tucson, AZ 8520                                                                                                     |

## 2016 Ambient Air Monitoring Network Plan

### SANTA CLARA SCHOOL: AQS# 040191026



| Site Description      |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Site Name             | SANTA CLARA SCHOOL                                                 |
| AQS ID                | 040191026                                                          |
| Address               | 6910 S. Santa Clara Avenue, Tucson, AZ                             |
| Latitude / Longitude  | 32.125950 / -110.982600                                            |
| Elevation             | 2540                                                               |
| Surrounding landscape | Large flat roof, paved parking lots and streets, grass playground. |
| Location description  | This site is situated in a Southwest Tucson residential district.  |
|                       |                                                                    |

**Comments:** This site is located south of Interstate 10 and east of Interstate 19 and provides a representative neighborhood scale site on Tucson's south side. Being near the fringe of the city limits, this site should track transport values that develop with a southerly wind from a combination of desert, agricultural land, and silt flood plain that is found on the Tohono O'Odham Indian Reservation (San Xavier district) 500 meters south of the site. The Hi- Vol sampler was replaced in April, 2006, with a Low- Vol sampler. A co – located monitor was added February, 2016.

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                           |                                                                                |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>SANTA CLARA SCHOOL</b>                                                      |
| <b>Pollutant</b>                                                          | <b>PM<sub>10</sub></b>                                                         |
| Method code                                                               | 126                                                                            |
| Number of monitors                                                        | 1                                                                              |
| Parameter code / POC                                                      | 81102 /1                                                                       |
| Basic monitoring objective / Statement of purpose                         | NAAQS Comparison / Population Exposure                                         |
| Site type                                                                 | Population Exposure                                                            |
| Instrument Manufacturer / Model                                           | R&P 2000                                                                       |
| FRM/FEM/ARM/other                                                         | FRM                                                                            |
| Collecting agency / Reporting agency                                      | PDEQ/ PDEQ                                                                     |
| Analytical lab                                                            | PDEQ                                                                           |
| Monitor type                                                              | Special Purpose / SLAMS January, 2017                                          |
| Scale                                                                     | Neighborhood                                                                   |
| Number of daily observations                                              | 59                                                                             |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                              |
| Historical exceedances                                                    | Exceedances of the 24 – hour standard: One on 10/27/2008                       |
| Current Sampling frequency / Season                                       | Every six days                                                                 |
| Probe height                                                              | 6.45 meters above the ground on the roof of the Santa Clara Elementary School. |
| Degrees of unrestricted air flow                                          | 360                                                                            |
| Distance from supporting structure                                        | 2.01 meters (to roof)                                                          |
| Distance from obstruction on roof                                         | n/a                                                                            |
| Distance from obstruction not on roof                                     | n/a                                                                            |
| Distance from trees                                                       | 23.9 meters                                                                    |
| Distance to furnace or incinerator flue                                   | n/a                                                                            |
| Distance between collocated monitors / Schedule / Collocated monitor type | 1.7 meters                                                                     |
| Nearest roads distance & direction to monitor / ADT                       | 450 meters east of Interstate 19 with a 2012 ADT of 38,000                     |
|                                                                           | 800 meters south of Valencia Road with a 2014 ADT of 46,168                    |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                            |
| MSA                                                                       | Tucson, AZ 8520                                                                |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                           |                                                                                                                     |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>SANTA CLARA SCHOOL</b>                                                                                           |
| <b>Pollutant</b>                                                          | <b>PM<sub>10</sub> Collocated</b>                                                                                   |
| Method code                                                               | 126                                                                                                                 |
| Number of monitors                                                        | 1                                                                                                                   |
| Parameter code / POC                                                      | 81102 /2                                                                                                            |
| Basic monitoring objective / Statement of purpose                         | To comply with ambient air quality protocols and standards in order for data to be used for comparison to the NAAQS |
| Site type                                                                 | Population Exposure                                                                                                 |
| Instrument Manufacturer / Model                                           | R&P 2000                                                                                                            |
| FRM/FEM/ARM/other                                                         | FRM                                                                                                                 |
| Collecting agency / Reporting agency                                      | PDEQ/ PDEQ                                                                                                          |
| Analytical lab                                                            | PDEQ                                                                                                                |
| Monitor type                                                              | Special Purpose / SLAMS January, 2017                                                                               |
| Scale                                                                     | Neighborhood                                                                                                        |
| Number of daily observations                                              | 30                                                                                                                  |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                                                                   |
| Historical exceedances                                                    | Exceedances of the 24 – hour standard: One on 10/27/2008                                                            |
| Current Sampling frequency / Season                                       | Every six days                                                                                                      |
| Probe height                                                              | 6.45 meters above the ground on the roof of the Santa Clara Elementary School.                                      |
| Degrees of unrestricted air flow                                          | 360                                                                                                                 |
| Distance from supporting structure                                        | 2.01 meters (to roof)                                                                                               |
| Distance from obstruction on roof                                         | n/a                                                                                                                 |
| Distance from obstruction not on roof                                     | n/a                                                                                                                 |
| Distance from trees                                                       | 23.9 meters                                                                                                         |
| Distance to furnace or incinerator flue                                   | n/a                                                                                                                 |
| Distance between collocated monitors / Schedule / Collocated monitor type | 1.7 meters                                                                                                          |
| Nearest roads distance & direction to monitor / ADT                       | 450 meters east of Interstate 19 with a 2012 ADT of 38,000                                                          |
|                                                                           | 800 meters south of Valencia Road with a 2014 ADT of 46,168                                                         |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                                                                 |
| MSA                                                                       | Tucson, AZ 8520                                                                                                     |

## 2016 Ambient Air Monitoring Network Plan

**TANGERINE:** AQS # 040191018



Previous



Current

| Site Description      |                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | <b>TANGERINE</b>                                                                                                                                                                                                                                                                                                                    |
| AQS ID                | 040191018                                                                                                                                                                                                                                                                                                                           |
| Address               | 12101 N. Camino de Oeste, Tucson, AZ                                                                                                                                                                                                                                                                                                |
| Latitude / Longitude  | 32.425250 / -111.063500                                                                                                                                                                                                                                                                                                             |
| Elevation             | 2638                                                                                                                                                                                                                                                                                                                                |
| Surrounding landscape | Dirt, sparse desert vegetation to the east; high density, tri-level and multi-unit apartments directly west of station.                                                                                                                                                                                                             |
| Location description  | This site has been situated in a relatively undisturbed natural desert area for most of its existence, but residential development in recent years have been built to within 35 meters to the west, and low density residential developments are encroaching from the south, east and north to within 3 kilometers to 5 kilometers. |
|                       |                                                                                                                                                                                                                                                                                                                                     |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                           |                                                                                                     |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                          | <b>TANGERINE</b>                                                                                    |
| <b>Pollutant</b>                                                          | <b>PM<sub>10</sub></b>                                                                              |
| Method code                                                               | 126                                                                                                 |
| Number of monitors                                                        | 1                                                                                                   |
| Parameter code / POC                                                      | 81102/ 1                                                                                            |
| Basic monitoring objective / Statement of purpose                         | NAAQS Comparison / General Background *                                                             |
| Site type                                                                 | General Background                                                                                  |
| Instrument Manufacturer / Model                                           | R&P 2000                                                                                            |
| FRM/FEM/ARM/other                                                         | FRM                                                                                                 |
| Collecting agency / Reporting agency                                      | PDEQ/ PDEQ                                                                                          |
| Analytical lab                                                            | PDEQ                                                                                                |
| Monitor type                                                              | SLAMS                                                                                               |
| Scale                                                                     | Urban                                                                                               |
| Number of daily observations                                              | 59                                                                                                  |
| Number / Dates of 24-hour standard exceedances in 2016                    | 0                                                                                                   |
| Historical exceedances                                                    | 0                                                                                                   |
| Current Sampling frequency / Season                                       | Every six days                                                                                      |
| Probe height                                                              | 4.5 meters above the ground on a shelter on Tucson's far northwest side                             |
| Degrees of unrestricted air flow                                          | 360                                                                                                 |
| Distance from supporting structure                                        | 2.01 meters (to roof)                                                                               |
| Distance from obstruction on roof                                         | n/a                                                                                                 |
| Distance from obstruction not on roof                                     | n/a                                                                                                 |
| Distance from trees                                                       | 6.4 meters                                                                                          |
| Distance to furnace or incinerator flue                                   | n/a                                                                                                 |
| Distance between collocated monitors / schedule / Collocated monitor type | n/a                                                                                                 |
| Nearest roads distance & direction to monitor / ADT                       | Tangerine Road runs approximately east – west 70 meters south of the site with a 2016 ADT of 14,824 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                       | Yes                                                                                                 |
| MSA                                                                       | Tucson, AZ 8520                                                                                     |

\* See comment on page 3, PDEQ's anticipated modifications to network in 2017

**Comments:** The primary objective of this site is to assess background concentrations and to assess transport impact from outlying sources during exceptional wind events. As part of the urban haze/visibility study, dichotomous samplers were installed at this site in July 1993. PM<sub>10</sub> data from these samplers was used to supplement the existing PM<sub>10</sub> network from October 1996 to December 1998, when the dichotomous samplers were relocated and a Hi-Vol sampler was installed to continue PM<sub>10</sub> monitoring. In 2005, the Hi-Vol PM<sub>10</sub> sampler was replaced with a Low –Vol R& P 2000 sampler.



## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                                     |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>TANGERINE</b>                                                                                    |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                                                        |
| Method code                                                                 | 047/ 087                                                                                            |
| Number of monitors                                                          | 1                                                                                                   |
| Parameter code / POC                                                        | 44201 / 1                                                                                           |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Highest Concentration *                                                          |
| Site type                                                                   | Highest Concentration                                                                               |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 49c and 49i                                                                     |
| FRM/FEM/ARM/other                                                           | FEM                                                                                                 |
| Collecting agency / Reporting agency                                        | PDEQ/ PDEQ                                                                                          |
| Analytical lab                                                              | n/a                                                                                                 |
| Monitor type                                                                | Special Purpose / SLAMS January, 2017                                                               |
| Scale                                                                       | Urban                                                                                               |
| Number of daily observations                                                | 362                                                                                                 |
| Number / Dates of 8-hour standard exceedances in 2016                       | 0                                                                                                   |
| Historical exceedances                                                      | One in 2002; One in 2009; One in 2014                                                               |
| Current Sampling frequency / Season                                         | Continuous                                                                                          |
| Probe height                                                                | 3.75 meters above the ground on a shelter on Tucson's far northwest side.                           |
| Probe material / Residence time                                             | FEP Teflon / 8.5 seconds                                                                            |
| Degrees of unrestricted air flow                                            | 360                                                                                                 |
| Distance from supporting structure                                          | 1.24 meters                                                                                         |
| Distance from obstruction on roof                                           | n/a                                                                                                 |
| Distance from obstruction not on roof                                       | n/a                                                                                                 |
| Distance from trees                                                         | 8.3 meters                                                                                          |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                 |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                 |
| Nearest roads distance & direction to monitor / ADT                         | Tangerine Road runs approximately east – west 70 meters south of the site with a 2016 ADT of 14,824 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                 |
| MSA                                                                         | Tucson, AZ 8520                                                                                     |

**Comments:** Tangerine was established in November 1989. Ozone concentrations at this site have been the highest in the network on occasion. This may be due to the prevailing southeasterly winds transporting ozone from the urban area. Concentrations remain high well into the night and early morning.

## 2016 Ambient Air Monitoring Network Plan

**GERONIMO: AQS # 040191113**



| Site Description      |                                                                                  |
|-----------------------|----------------------------------------------------------------------------------|
| Site Name             | GERONIMO                                                                         |
| AQS ID                | 040191113                                                                        |
| Address               | 2498 N. Geronimo Tucson, AZ                                                      |
| Latitude / Longitude  | 32.251840 / -110.965300                                                          |
| Elevation             | 2398                                                                             |
| Surrounding landscape | Dirt, dead shrubs, unpaved road shoulders                                        |
| Location description  | This site is situated in a residential area in a City of Tucson water well site. |
|                       |                                                                                  |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>GERONIMO</b>                                                                |
| <b>Pollutant</b>                                                            | <b>PM<sub>10</sub></b>                                                         |
| Method code                                                                 | 122                                                                            |
| Number of monitors                                                          | 1                                                                              |
| Parameter code / POC                                                        | 81102 / 1                                                                      |
| Basic monitoring objective / Statement of purpose                           | NAAQS Comparison / Provide air pollution data to the public in a timely manner |
| Site type                                                                   | Population Exposure                                                            |
| Instrument Manufacturer / Model                                             | Met One / BAM 1020                                                             |
| FRM/FEM/ARM/other                                                           | FEM                                                                            |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                    |
| Analytical lab                                                              | n/a                                                                            |
| Monitor type                                                                | Special Purpose / SLAMS January, 2017                                          |
| Scale                                                                       | Neighborhood                                                                   |
| Number of hourly observations                                               | 8681                                                                           |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                                              |
| Historical exceedances                                                      | One on 7/22/2009; one on 04/09/2013; one on 07/25/2014                         |
| Current Sampling frequency / Season                                         | Continuous                                                                     |
| Probe height                                                                | 4.6m                                                                           |
| Degrees of unrestricted air flow                                            | 360                                                                            |
| Distance from supporting structure                                          | 1.83 meters                                                                    |
| Distance from obstruction on roof                                           | n/a                                                                            |
| Distance from obstruction not on roof                                       | n/a                                                                            |
| Distance from trees                                                         | 9.3 meters                                                                     |
| Distance to furnace or incinerator flue                                     | n/a                                                                            |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                            |
| Nearest roads distance & direction to monitor / ADT                         | 154.8 meters north of Grant Road with a 2016 ADT 33,210                        |
|                                                                             | 617.6 meters east of Stone Avenue with a 2012 ADT 21,000                       |
|                                                                             | 397.5 meters west of North 1 <sup>st</sup> Avenue with a 2015 ADT 37,033       |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                            |
| MSA                                                                         | Tucson, AZ 8520                                                                |

**Comments:** This monitor was initially installed in July 1, 2007 for Air Quality Index reporting using a continuous monitor. This is a Special Purpose site situated in a residential area, monitoring for population exposure. There was one exceedance on April 9, 2013 that may be considered as an Exceptional Event dependent on the approval from EPA.

## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                   |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>GERONIMO</b>                                                                   |
| <b>Pollutant</b>                                                            | <b>PM<sub>2.5</sub></b>                                                           |
| Method code                                                                 | 733                                                                               |
| Number of monitors                                                          | 1                                                                                 |
| Parameter code / POC                                                        | 88501 /3                                                                          |
| Basic monitoring objective / Statement of purpose                           | Provide air pollution data to the public in a timely manner / Population Exposure |
| Site type                                                                   | Population Exposure                                                               |
| Instrument Manufacturer / Model                                             | Met One / BAM 1020                                                                |
| FRM/FEM/ARM/other                                                           | Other                                                                             |
| Collecting agency / Reporting agency                                        | PDEQ/ PDEQ                                                                        |
| Analytical lab                                                              | n/a                                                                               |
| Monitor type                                                                | Other                                                                             |
| Scale                                                                       | Neighborhood                                                                      |
| Number of hourly observations                                               | 8477                                                                              |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                                                 |
| Historical exceedances                                                      | 0                                                                                 |
| Current Sampling frequency / Season                                         | Continuous                                                                        |
| Probe height                                                                | 4.6 meters                                                                        |
| Degrees of unrestricted air flow                                            | 360                                                                               |
| Distance from supporting structure                                          | 1.98 meters                                                                       |
| Distance from obstruction on roof                                           | n/a                                                                               |
| Distance from obstruction not on roof                                       | n/a                                                                               |
| Distance from trees                                                         | 9.4 meters                                                                        |
| Distance to furnace or incinerator flue                                     | n/a                                                                               |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                               |
| Nearest roads distance & direction to monitor / ADT                         | 154.8 meters north of Grant Road with a 2016 ADT 33,210                           |
|                                                                             | 617.6 meters east of Stone Avenue with a 2012 ADT 21,000                          |
|                                                                             | 397.5 meters west of North 1 <sup>st</sup> Avenue with a 2015 ADT 37,033          |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                   | n/a                                                                               |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                               |
| MSA                                                                         | Tucson, AZ 8520                                                                   |

**Comments:** This monitor was initially installed in July of 2001 for Air Quality Index reporting using a continuous monitor. Pima County began reporting the PM<sub>2.5</sub> data to EPA July, 2003. This is site situated in a residential area, monitoring for population exposure.

## 2016 Ambient Air Monitoring Network Plan

**ROSE ELEMENTARY: AQS # 040191032**



| Site Description      |                                                                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | ROSE ELEMENTARY                                                                                                                                                                                         |
| AQS ID                | 040191032                                                                                                                                                                                               |
| Address               | 710 W. Michigan, Tucson, AZ                                                                                                                                                                             |
| Latitude / Longitude  | 32.173 / -110.980115                                                                                                                                                                                    |
| Elevation             | 2438                                                                                                                                                                                                    |
| Surrounding landscape | Grass playground                                                                                                                                                                                        |
| Location description  | The site is located in a residential neighborhood with light commercial enterprises. The Santa Cruz River, with several sand and gravel operations, parallels the interstate one kilometer to the west. |
|                       |                                                                                                                                                                                                         |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                                       |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | ROSE ELEMENTARY                                                                                       |
| <b>Pollutant</b>                                                            | PM <sub>2.5</sub>                                                                                     |
| Method code                                                                 | 733                                                                                                   |
| Number of monitors                                                          | 1                                                                                                     |
| Parameter code / POC                                                        | 88501 /3                                                                                              |
| Basic monitoring objective / Statement of purpose                           | Provide air pollution data to the public in a timely manner / Population Exposure                     |
| Site type                                                                   | Population Exposure                                                                                   |
| Instrument Manufacturer / Model                                             | Met One / BAM 1020                                                                                    |
| FRM/FEM/ARM/other                                                           | Other                                                                                                 |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                           |
| Analytical lab                                                              | n/a                                                                                                   |
| Monitor type                                                                | Other                                                                                                 |
| Scale                                                                       | Neighborhood                                                                                          |
| Number of hourly observations                                               | 8258                                                                                                  |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                                                                     |
| Historical exceedances                                                      | 0                                                                                                     |
| Current Sampling frequency / Season                                         | Continuous                                                                                            |
| Probe height                                                                | 4.9 meters above the ground on the roof of a shelter located on the grounds of Rose Elementary School |
| Degrees of unrestricted air flow                                            | 360                                                                                                   |
| Distance from supporting structure                                          | 2.39 meters                                                                                           |
| Distance from obstruction on roof                                           | n/a                                                                                                   |
| Distance from obstruction not on roof                                       | n/a                                                                                                   |
| Distance from trees                                                         | 11.8 meters                                                                                           |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                   |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                   |
| Nearest roads distance & direction to monitor / ADT                         | 12 <sup>th</sup> Avenue 235 meters to the east with a 2011 ADT of 22,000                              |
|                                                                             | Ajo Way 528 meters to the north with a 2015 ADT of 23,797                                             |
|                                                                             | Interstate 19 runs north-south half a kilometer to the west with a 2012 ADT 80,000                    |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                   | n/a                                                                                                   |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                   |
| MSA                                                                         | Tucson, AZ 8520                                                                                       |

**Comments:** This monitor was initially installed in October of 2000 as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. This area was identified as having higher than normal number of pediatric asthma cases. Pima County began reporting the PM<sub>2.5</sub> data to EPA July, 2003.

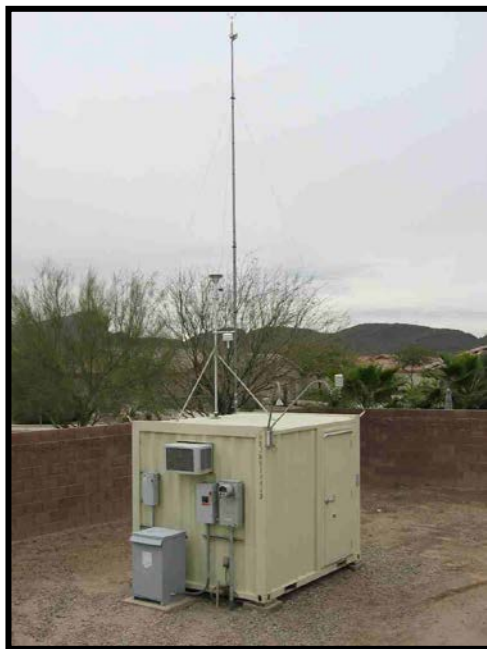
## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                                        |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>ROSE ELEMENTARY</b>                                                                                 |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                                                           |
| Method code                                                                 | 047                                                                                                    |
| Number of monitors                                                          | 1                                                                                                      |
| Parameter code / POC                                                        | 44201/ 1                                                                                               |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Provide air pollution data to the public in a timely manner                         |
| Site type                                                                   | Population Exposure                                                                                    |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 49i                                                                                |
| FRM/FEM/ARM/other                                                           | FEM                                                                                                    |
| Collecting agency / Reporting agency                                        | PDEQ/PDEQ                                                                                              |
| Analytical lab                                                              | n/a                                                                                                    |
| Monitor type                                                                | Special Purpose/ SLAMS January, 2017                                                                   |
| Scale                                                                       | Neighborhood                                                                                           |
| Number of daily observations                                                | 366                                                                                                    |
| Number / Dates of 8-hour standard exceedances in 2016                       | 0                                                                                                      |
| Historical exceedances                                                      | 0                                                                                                      |
| Current Sampling frequency / Season                                         | Continuous                                                                                             |
| Probe height                                                                | 4.1 meters above the ground on the roof of a shelter located on the grounds of Rose Elementary School. |
| Probe material / Residence time                                             | FEP Teflon / 9.5 seconds                                                                               |
| Degrees of unrestricted air flow                                            | 360                                                                                                    |
| Distance from supporting structure                                          | 1.63 meters                                                                                            |
| Distance from obstruction on roof                                           | n/a                                                                                                    |
| Distance from obstruction not on roof                                       | n/a                                                                                                    |
| Distance from trees                                                         | 11.4 meters                                                                                            |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                    |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                    |
| Nearest roads distance & direction to monitor / ADT                         | 12 <sup>th</sup> Avenue 235 meters to the east with a 2011 ADT of 22,000                               |
|                                                                             | Ajo Way 528 meters to the north with a 2015 ADT of 23,797                                              |
|                                                                             | Interstate 19 runs north-south half a kilometer to the west with a 2012 ADT 80,000                     |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                    |
| MSA                                                                         | Tucson, AZ 8520                                                                                        |

**Comments:** This site was initially established in October of 2000 as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. This area was identified as having higher than normal number of pediatric asthma cases. Pima County began reporting the ozone data to EPA July, 2003.

## 2016 Ambient Air Monitoring Network Plan

**COACHLINE: AQS # 040191034**



| Site Description      |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | COACHLINE                                                                                                                                                                                                                                                                                                                                                                                                                        |
| AQS ID                | 040191034                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Address               | 9597 N. Coachline, Tucson, AZ                                                                                                                                                                                                                                                                                                                                                                                                    |
| Latitude / Longitude  | 32.380820 / -111.127160                                                                                                                                                                                                                                                                                                                                                                                                          |
| Elevation             | 2104                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Surrounding landscape | Dirt within walled compound, residential neighborhood                                                                                                                                                                                                                                                                                                                                                                            |
| Location description  | The site is situated in a residential neighborhood. The normally dry Santa Cruz River runs northwest between the Interstate and the neighborhood and contributes to airborne dust through previous deposition of fine clay soils throughout the floodplain. This area has previously been used for farming and ranching, and sand and gravel operations are still in operation five to ten kilometers upstream to the southwest. |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                  |



## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                   |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>COACHLINE</b>                                                                  |
| <b>Pollutant</b>                                                            | <b>PM<sub>2.5</sub></b>                                                           |
| Method code                                                                 | 733                                                                               |
| Number of monitors                                                          | 1                                                                                 |
| Parameter code / POC                                                        | 88501/ 3                                                                          |
| Basic monitoring objective / Statement of purpose                           | Provide air pollution data to the public in a timely manner / Population Exposure |
| Site type                                                                   | Population Exposure                                                               |
| Instrument Manufacturer / Model                                             | Met One / BAM 1020                                                                |
| FRM/FEM/ARM/other                                                           | Other                                                                             |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                       |
| Analytical lab                                                              | n/a                                                                               |
| Monitor type                                                                | Other                                                                             |
| Scale                                                                       | Neighborhood                                                                      |
| Number of hourly observations                                               | 8027                                                                              |
| Number / Dates of 24-hour standard exceedances in 2016                      | 0                                                                                 |
| Historical exceedances                                                      | 0                                                                                 |
| Current Sampling frequency / Season                                         | Continuous                                                                        |
| Probe height                                                                | 4.9 meters above the ground on a shelter on Tucson's far northwest side           |
| Degrees of unrestricted air flow                                            | 280, from 250 to 170, includes predominant wind direction from 135 (SE)           |
| Distance from supporting structure                                          | 2.39 meters                                                                       |
| Distance from obstruction on roof                                           | n/a                                                                               |
| Distance from obstruction not on roof                                       | 9.41 meters                                                                       |
| Distance from trees                                                         | 5.0 meters                                                                        |
| Distance to furnace or incinerator flue                                     | n/a                                                                               |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                               |
| Nearest roads distance & direction to monitor / ADT                         | approximately 1.25 kilometers west of Interstate 10 with a 2012 ADT of 77,000     |
|                                                                             | .5 kilometer north of Twin Peaks Road 2015 ADT of 5,992                           |
| Suitable for comparison to PM <sub>2.5</sub> Annual NAAQS                   | n/a                                                                               |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                               |
| MSA                                                                         | Tucson, AZ 8520                                                                   |

**Comments:** This monitor was initially installed in March of 2001 as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. This area was identified as having higher than normal number of pediatric asthma cases. Pima County began reporting the PM<sub>2.5</sub> data to EPA July, 2003.

## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>COACHLINE</b>                                                               |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                                   |
| Method code                                                                 | 047                                                                            |
| Number of monitors                                                          | 1                                                                              |
| Parameter code / POC                                                        | 44201 / 1                                                                      |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Provide air pollution data to the public in a timely manner |
| Site type                                                                   | Population Exposure                                                            |
| Instrument Manufacturer/Model                                               | Thermo Scientific / 49i                                                        |
| FRM/FEM/ARM/other                                                           | FEM                                                                            |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                    |
| Analytical lab                                                              | n/a                                                                            |
| Monitor type                                                                | Special Purpose / SLAMS January, 2017                                          |
| Scale                                                                       | Neighborhood                                                                   |
| Number of daily observations                                                | 365                                                                            |
| Number / Dates of 8-hour standard exceedances in 2016                       | 0                                                                              |
| Historical exceedances                                                      | 0                                                                              |
| Current Sampling frequency / Season                                         | Continuous                                                                     |
| Probe height                                                                | 3.4 meters above the ground on a shelter on Tucson's far northwest side        |
| Probe material / Residence time                                             | FEP Teflon / 9.3 seconds                                                       |
| Degrees of unrestricted air flow                                            | 310, from 230 to 180, includes predominant wind direction from 135 (SE)        |
| Distance from supporting structure                                          | 1.3 meters                                                                     |
| Distance from obstruction on roof                                           | n/a                                                                            |
| Distance from obstruction not on roof                                       | n/a                                                                            |
| Distance from trees                                                         | 5.3 meters                                                                     |
| Distance to furnace or incinerator flue                                     | n/a                                                                            |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                            |
| Nearest roads distance & direction to monitor / ADT                         | approximately 1.25 kilometers west of Interstate 10 with a 2012 ADT of 77,000  |
|                                                                             | .5 kilometer north of Twin Peaks Road 2015 ADT of 5,992                        |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                            |
| MSA                                                                         | Tucson, AZ 8520                                                                |

**Comments:** This site was initially established in April of 2001 as part of the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. This area was identified as having higher than normal number of pediatric asthma cases. Pima County began reporting the ozone data to EPA July, 2003.

## 2016 Ambient Air Monitoring Network Plan

### 22<sup>ND</sup> STREET & CRAYCROFT: AQS # 040191011



| Site Description      |                                                                                                                                                                                            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | 22 <sup>ND</sup> STREET & CRAYCROFT                                                                                                                                                        |
| AQS ID                | 040191011/ 1                                                                                                                                                                               |
| Address               | 1237 S. Beverly Avenue, Tucson, AZ                                                                                                                                                         |
| Latitude / Longitude  | 32.204420 / -110.878067                                                                                                                                                                    |
| Elevation             | 2582                                                                                                                                                                                       |
| Surrounding landscape | Dirt, ephemeral weeds                                                                                                                                                                      |
| Location description  | This site is situated in a predominately residential eastside area with commercial activity lining nearby arterial routes. There is a large covered water reservoir north of the location. |
|                       |                                                                                                                                                                                            |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                         |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>22<sup>ND</sup> STREET &amp; CRAYCROFT</b>                                           |
| <b>Pollutant</b>                                                            | <b>CARBON MONOXIDE</b>                                                                  |
| Method code                                                                 | 158/ 054                                                                                |
| Number of monitors                                                          | 1                                                                                       |
| Parameter code / POC                                                        | 42101 /1                                                                                |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Population Exposure                                                  |
| Site type                                                                   | Population Exposure                                                                     |
| Instrument Manufacturer / Model                                             | Horiba / APMA370 ; TECO / 48i-TLE                                                       |
| FRM/FEM/ARM/other                                                           | FRM                                                                                     |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                             |
| Analytical lab                                                              | n/a                                                                                     |
| Monitor type                                                                | SLAMS                                                                                   |
| Scale                                                                       | Neighborhood                                                                            |
| Number of hourly observations                                               | 8757                                                                                    |
| Number / Dates of standard exceedances in 2016                              | 0                                                                                       |
| Historical exceedances                                                      | 0                                                                                       |
| Current Sampling frequency / Season                                         | Continuous                                                                              |
| Probe height                                                                | 4.4 meters above the ground on the roof of a shelter located in a city water well site. |
| Probe material / Residence time                                             | FEP Teflon / 5.3 seconds                                                                |
| Degrees of unrestricted air flow                                            | 360                                                                                     |
| Distance from supporting structure                                          | 1.3 meters                                                                              |
| Distance from obstruction on roof                                           | n/a                                                                                     |
| Distance from obstruction not on roof                                       | n/a                                                                                     |
| Distance from trees                                                         | 22.0 meters                                                                             |
| Distance to furnace or incinerator flue                                     | n/a                                                                                     |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                     |
| Nearest roads distance & direction to monitor / ADT                         | 260 meters west is Craycroft Road with a 2015 ADT of 25,760                             |
|                                                                             | 260 meters north is 22 <sup>nd</sup> Street with a 2015 ADT of 43,289                   |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                     |
| MSA                                                                         | Tucson, AZ 8520                                                                         |

**Comments:** This site is one of the oldest in the monitoring network, originally established in 1973, and has operated continuously to the present.

## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                                                                      |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>22<sup>ND</sup> STREET &amp; CRAYCROFT</b>                                                                                        |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                                                                                         |
| Method code                                                                 | 047                                                                                                                                  |
| Number of monitors                                                          | 1                                                                                                                                    |
| Parameter code / POC                                                        | 44201 /1                                                                                                                             |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Maintenance of long term monitoring at this location                                                              |
| Site type                                                                   | Population Exposure                                                                                                                  |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 49i                                                                                                              |
| FRM/FEM/ARM/other                                                           | FEM                                                                                                                                  |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                                                          |
| Analytical lab                                                              | n/a                                                                                                                                  |
| Monitor type                                                                | SLAMS                                                                                                                                |
| Scale                                                                       | Neighborhood                                                                                                                         |
| Number of daily observations                                                | 365                                                                                                                                  |
| Number / Dates of 8-hour standard exceedances in 2016                       | 0                                                                                                                                    |
| Historical exceedances                                                      | One in 1997, 1999, 2002, 2011                                                                                                        |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                           |
| Probe height                                                                | 4.4 meters above the ground on the roof of a shelter located in a city water well site.                                              |
| Probe material / Residence time                                             | FEP Teflon / 8.1 seconds                                                                                                             |
| Degrees of unrestricted air flow                                            | 360                                                                                                                                  |
| Distance from supporting structure                                          | 1.3 meters                                                                                                                           |
| Distance from obstruction on roof                                           | n/a                                                                                                                                  |
| Distance from obstruction not on roof                                       | n/a                                                                                                                                  |
| Distance from trees                                                         | 22.0 meters                                                                                                                          |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                  |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                  |
| Nearest roads distance & direction to monitor / ADT                         | 260 meters west is Craycroft Road with a 2015 ADT of 25,760<br>260 meters north is 22 <sup>nd</sup> Street with a 2015 ADT of 43,289 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                  |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                      |

**Comments:** This site is one of the oldest in the monitoring network, originally established in 1973, and operated continuously to the present.

## 2016 Ambient Air Monitoring Network Plan

|                                                                             |                                                                                                                                      |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>22<sup>ND</sup> STREET &amp; CRAYCROFT</b>                                                                                        |
| <b>Pollutant</b>                                                            | <b>NITROGEN DIOXIDE</b>                                                                                                              |
| Method code                                                                 | 157/ 074                                                                                                                             |
| Number of monitors                                                          | 1                                                                                                                                    |
| Parameter code / POC                                                        | 42602 /1                                                                                                                             |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Maintenance of long term monitoring at this location                                                              |
| Site type                                                                   | Population Exposure                                                                                                                  |
| Instrument Manufacturer / Model                                             | Horiba / APNA -370 and Thermo Scientific / 42i                                                                                       |
| FRM/FEM/ARM/other                                                           | FRM                                                                                                                                  |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                                                          |
| Analytical lab                                                              | n/a                                                                                                                                  |
| Monitor type                                                                | SLAMS                                                                                                                                |
| Scale                                                                       | Neighborhood / Area Wide Monitoring                                                                                                  |
| Number of hourly observations                                               | 8462                                                                                                                                 |
| Number / Dates of standard exceedances in 2016                              | 0                                                                                                                                    |
| Historical exceedances                                                      | 0                                                                                                                                    |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                           |
| Probe height                                                                | 4.4 meters above the ground on the roof of a shelter located in a city water well site                                               |
| Probe material / Residence time                                             | FEP Teflon / 7.5 seconds                                                                                                             |
| Degrees of unrestricted air flow                                            | 360                                                                                                                                  |
| Distance from supporting structure                                          | 1.3 meters                                                                                                                           |
| Distance from obstruction on roof                                           | n/a                                                                                                                                  |
| Distance from obstruction not on roof                                       | n/a                                                                                                                                  |
| Distance from trees                                                         | 22.0 meters                                                                                                                          |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                  |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                  |
| Nearest roads distance & direction to monitor / ADT                         | 260 meters west is Craycroft Road with a 2015 ADT of 25,760<br>260 meters north is 22 <sup>nd</sup> Street with a 2015 ADT of 43,289 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                  |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                      |

**Comments:** This site is one of the oldest in the monitoring network, originally established in 1973, and operated continuously to the present.

## 2016 Ambient Air Monitoring Network Plan

### 22<sup>ND</sup> STREET & ALVERNON: AQS # 040191014



| Site Description      |                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | 22 <sup>ND</sup> STREET & ALVERNON                                                                                                                |
| AQS ID                | 040191014                                                                                                                                         |
| Address               | 3895 E. 22 <sup>nd</sup> Street, Tucson, AZ                                                                                                       |
| Latitude / Longitude  | 32.207390 / -110.910650                                                                                                                           |
| Elevation             | 2516                                                                                                                                              |
| Surrounding landscape | Gravel in walled compound, paved streets and sidewalks                                                                                            |
| Location description  | This site is situated in a commercial area near a high traffic count intersection. A large regional park is located to the northwest of the site. |
|                       |                                                                                                                                                   |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                                                                            |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>22<sup>ND</sup> STREET &amp; ALVERNON</b>                                                                                               |
| <b>Pollutant</b>                                                            | <b>CARBON MONOXIDE</b>                                                                                                                     |
| Method code                                                                 | 174                                                                                                                                        |
| Number of monitors                                                          | 1                                                                                                                                          |
| Parameter code / POC                                                        | 42101 / 1                                                                                                                                  |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Highest Concentration                                                                                                   |
| Site type                                                                   | Highest Concentration                                                                                                                      |
| Instrument Manufacturer / Model                                             | Ecotech / Serinus 30 and Thermo Scientific 48i – TLE                                                                                       |
| FRM/FEM/ARM/other                                                           | FRM                                                                                                                                        |
| Collecting agency / Reporting agency                                        | PDEQ / PDEQ                                                                                                                                |
| Analytical lab                                                              | n/a                                                                                                                                        |
| Monitor type                                                                | SLAMS                                                                                                                                      |
| Scale                                                                       | Microscale                                                                                                                                 |
| Number of hourly observations                                               | 8739                                                                                                                                       |
| Number / Dates of standard exceedances in 2016                              | 0                                                                                                                                          |
| Historical exceedances                                                      | Years: 1975 - 1986 and 1988                                                                                                                |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                                 |
| Probe height                                                                | 3.8 meters above the ground attached to a wall near 22 <sup>nd</sup> Street at a Tucson Water well site                                    |
| Probe material / Residence time                                             | FEP Teflon / 24.4 seconds                                                                                                                  |
| Degrees of unrestricted air flow                                            | 320, from 5 to 325 includes predominant wind direction from 135 (SE; directly from intersection of 22 <sup>nd</sup> St. and Alvernon Way). |
| Distance from supporting structure                                          | 1.15 meters                                                                                                                                |
| Distance from obstruction on roof                                           | n/a                                                                                                                                        |
| Distance from obstruction not on roof                                       | 2.0 meters                                                                                                                                 |
| Distance from trees                                                         | 10.7 meters                                                                                                                                |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                        |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                        |
| Nearest roads distance & direction to monitor / ADT                         | 60 meters west of Alvernon Way with a 2014 ADT of 29,475<br>10 meters north of 22 <sup>nd</sup> Street with a 2015 ADT of 37,351           |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                        |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                            |

**Comments:** The site was relocated in October, 2001 to a Tucson Water well site 50 meters west of the original location. The move was necessitated by an intersection improvement project and anticipated construction on the northwest corner. The shelter was moved again in January, 2004, to a different corner within the well site, and the probe was attached to a wall in virtually the same location as before the shelter was moved, so airflow from the intersection would remain unrestricted. 22<sup>nd</sup> & Alvernon continues to measure the highest CO concentrations in the network. The prevailing morning- hour southeasterly winds usually disperse CO generated in the intersection. During stagnant conditions, especially during the winter inversion formation, CO generated in the intersection has a longer residence time. Although population exposure is limited at this location, 22<sup>nd</sup> & Alvernon is representative of worst-case intersections in Tucson. This site has been operating continuously since 1975. No exceedances of the eight-hour health standard were recorded in 1989 through 2016.



## 2016 Ambient Air Monitoring Network Plan

### CHERRY & GLENN: AQS # 040191021



| Site Description      |                                                                                                                                                                                                                                            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | CHERRY & GLENN                                                                                                                                                                                                                             |
| AQS ID                | 040191021                                                                                                                                                                                                                                  |
| Address               | 2745 N. Cherry Avenue, Tucson, AZ                                                                                                                                                                                                          |
| Latitude / Longitude  | 32.25658 / -110.948650                                                                                                                                                                                                                     |
| Elevation             | 2400                                                                                                                                                                                                                                       |
| Surrounding landscape | Gravel in fenced compound, paved parking lot, streets                                                                                                                                                                                      |
| Location description  | This site is located in a predominately residential neighborhood, approximately 0.8 km northwest of a high traffic count intersection. Directly south and west of the site is a private High School enrolling approximately 1200 students. |
|                       |                                                                                                                                                                                                                                            |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                          |                                                                                  |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | CHERRY & GLENN                                                                   |
| <b>Pollutant</b>                                                         | CARBON MONOXIDE                                                                  |
| Method code                                                              | 054                                                                              |
| Number of monitors                                                       | 1                                                                                |
| Parameter code / POC                                                     | 42101 /1                                                                         |
| Basic monitoring objective / Statement of purpose                        | NAAQS comparison / Population Exposure                                           |
| Site type                                                                | Population Exposure                                                              |
| Instrument Manufacturer / Model                                          | Thermo Scientific / 48c                                                          |
| FRM/FEM/ARM/other                                                        | FRM                                                                              |
| Collecting agency / Reporting agency                                     | PDEQ/ PDEQ                                                                       |
| Analytical lab                                                           | n/a                                                                              |
| Monitor type                                                             | Special Purpose                                                                  |
| Scale                                                                    | Neighborhood                                                                     |
| Number of hourly observations                                            | 4289                                                                             |
| Number / Dates of standard exceedances in 2016                           | 0                                                                                |
| Historical exceedances                                                   | 0                                                                                |
| Current Sampling frequency / Season                                      | Continuous / Seasonal monitor operation from Jan 1- March 31 and Oct.1 – Dec. 31 |
| Probe height                                                             | 4.9 meters above the ground on a shelter in a city water well site.              |
| Probe material / Residence time                                          | FEP Teflon / 5.47 seconds                                                        |
| Degrees of unrestricted air flow                                         | 360                                                                              |
| Distance from supporting structure                                       | 1.1meters                                                                        |
| Distance from obstruction on roof                                        | n/a                                                                              |
| Distance from obstruction not on roof                                    | n/a                                                                              |
| Distance from trees                                                      | 8.7 meters                                                                       |
| Distance to furnace or incinerator flue                                  | n/a                                                                              |
| Distance between collocated monitors/ Schedule / Collocated monitor type | n/a                                                                              |
| Nearest roads distance & direction to monitor / ADT                      | 0.8 kilometers north of Grant Road with a 2014 ADT of 34,034                     |
|                                                                          | 0.5 kilometers west of Campbell Avenue with a 2014 ADT of 35,740                 |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                              |
| MSA                                                                      | Tucson, AZ 8520                                                                  |

**Comments:** Cherry & Glenn was established as a special purpose site in February 1989, in order to assess the CO levels at a distance (less than 1 kilometer) from a typical high-volume intersection. This site has historically recorded very low levels of CO during the summer months. Consequently, in 2001, seasonal monitoring began with sampling from October through March.

## 2016 Ambient Air Monitoring Network Plan

### GOLF LINKS & KOLB: AQS # 040191031



| Site Description      |                                                                                                                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | GOLF LINKS & KOLB                                                                                                                                                                                                                        |
| AQS ID                | 040191031                                                                                                                                                                                                                                |
| Address               | 2601 South Kolb Road                                                                                                                                                                                                                     |
| Latitude / Longitude  | 32.191180 / -110.840550                                                                                                                                                                                                                  |
| Elevation             | 2692                                                                                                                                                                                                                                     |
| Surrounding landscape | Dirt lot and easement, paved street                                                                                                                                                                                                      |
| Location description  | This site is located near the southeast corner of Golf Links and Kolb roads in a City of Tucson water reservoir site. Light commercial enterprises occupy all four corners and separate the intersection from residential neighborhoods. |
|                       |                                                                                                                                                                                                                                          |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                          |                                                                               |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>Site Name</b>                                                         | <b>GOLF LINKS &amp; KOLB</b>                                                  |
| <b>Pollutant</b>                                                         | <b>CARBON MONOXIDE</b>                                                        |
| Method code                                                              | 054                                                                           |
| Number of monitors                                                       | 1                                                                             |
| Parameter code / POC                                                     | 42101 / 1                                                                     |
| Basic monitoring objective / Statement of purpose                        | NAAQS comparison / Highest Concentration                                      |
| Site type                                                                | Highest Concentration                                                         |
| Instrument Manufacturer / Model                                          | Thermo Scientific/ 48C                                                        |
| FRM/FEM/ARM/other                                                        | FRM                                                                           |
| Collecting agency / Reporting agency                                     | PDEQ/ PDEQ                                                                    |
| Analytical lab                                                           | n/a                                                                           |
| Monitor type                                                             | Special Purpose                                                               |
| Scale                                                                    | Microscale                                                                    |
| Number of hourly observations                                            | 4384                                                                          |
| Number / Dates of standard exceedances in 2016                           | 0                                                                             |
| Historical exceedances                                                   | 0                                                                             |
| Current Sampling frequency / Season                                      | Continuous / Seasonal Monitor operating Jan. 1- March 31 and Oct. 1 – Dec. 31 |
| Probe height                                                             | 3.0 meters above the ground on a pole located next to Kolb road               |
| Probe material / Residence time                                          | FEP Teflon / 28.96 seconds                                                    |
| Degrees of unrestricted air flow                                         | 360                                                                           |
| Distance from supporting structure                                       | n/a                                                                           |
| Distance from obstruction on roof                                        | n/a                                                                           |
| Distance from obstruction not on roof                                    | n/a                                                                           |
| Distance from trees                                                      | 2.7 meters                                                                    |
| Distance to furnace or incinerator flue                                  | n/a                                                                           |
| Distance between collocated monitors/ Schedule / Collocated monitor type | n/a                                                                           |
| Nearest roads distance & direction to monitor / ADT                      | 100 meters south of Golf Links, with a 2014 ADT of 37,210                     |
|                                                                          | 2 meters east of Kolb Road, with a 2015 ADT of 40,034                         |
| Site meets 40 CFR 58, Appx. A,C,D,E                                      | Yes                                                                           |
| MSA                                                                      | Tucson, AZ 8520                                                               |

**Comments:** Golf Links & Kolb was established as a special purpose site in September 2002, as part of the Carbon Monoxide Limited Maintenance Plan. Inlet placement qualifies it as a microscale site, and sighting it on the southeastern quarter of the intersection provides an opposite wind direction compliment to the 22/Alvernon site. This site is operated seasonally, from October through March.

## 2016 Ambient Air Monitoring Network Plan

### SAGUARO PARK EAST: AQS # 040190021



| Site Description      |                                                                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | SAGUARO PARK EAST                                                                                                                   |
| AQS ID                | 040190021                                                                                                                           |
| Address               | 3905 South Old Spanish Trail, Tucson, AZ                                                                                            |
| Latitude / Longitude  | 32.174538 / -110.737116                                                                                                             |
| Elevation             | 3089                                                                                                                                |
| Surrounding landscape | Natural desert                                                                                                                      |
| Location description  | This site is situated in the National Park. The nearby light residential area has no significant local sources of ozone precursors. |
|                       |                                                                                                                                     |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                                                                                                |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>SAGUARO PARK EAST</b>                                                                                                                       |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                                                                                                   |
| Method code                                                                 | 047                                                                                                                                            |
| Number of monitors                                                          | 1                                                                                                                                              |
| Parameter code / POC                                                        | 44201 /1                                                                                                                                       |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Highest Concentration                                                                                                       |
| Site type                                                                   | Maximum ozone concentration                                                                                                                    |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 49i                                                                                                                        |
| FRM/FEM/ARM/other                                                           | FEM                                                                                                                                            |
| Collecting agency / Reporting agency                                        | PDEQ/ PDEQ                                                                                                                                     |
| Analytical lab                                                              | n/a                                                                                                                                            |
| Monitor type                                                                | SLAMS                                                                                                                                          |
| Scale                                                                       | Neighborhood                                                                                                                                   |
| Number of daily observations                                                | 365                                                                                                                                            |
| Number / Dates of 8-hour standard exceedances in 2016                       | Two / 5/3, 5/28                                                                                                                                |
| Historical exceedances                                                      | one in 1999, 2003, 2005, 2008; three in 2011; one in 2014                                                                                      |
| Current Sampling frequency / Season                                         | Continuous                                                                                                                                     |
| Probe height                                                                | 4.1 meters above the ground in Saguaro National Park East on the roof of a shelter that is one kilometer south of the administration building. |
| Probe material / Residence time                                             | FEP Teflon / 6.58 seconds                                                                                                                      |
| Degrees of unrestricted air flow                                            | 360                                                                                                                                            |
| Distance from supporting structure                                          | 1.22 meters                                                                                                                                    |
| Distance from obstruction on roof                                           | n/a                                                                                                                                            |
| Distance from obstruction not on roof                                       | n/a – (trailer was removed)                                                                                                                    |
| Distance from trees                                                         | 8.0 meters                                                                                                                                     |
| Distance to furnace or incinerator flue                                     | n/a                                                                                                                                            |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                                                                                            |
| Nearest roads distance & direction to monitor / ADT                         | 80 meters east to Old Spanish Trail with a 2015 ADT of 6,535                                                                                   |
|                                                                             | 105 meters south of Escalante with a 2015 ADT of 2,740                                                                                         |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                                                                                            |
| MSA                                                                         | Tucson, AZ 8520                                                                                                                                |

**Comments:** The Saguaro National Park site has been active since 1982. The operation of the site was taken over by the National Park Service in 1987. The Park Service returned operation of the site to Pima County in 1993. Geographically, Saguaro National Park is on the eastern edge of the Tucson metropolitan area. Ozone data from this site has been used to study how the levels of ozone affect natural vegetation.

## 2016 Ambient Air Monitoring Network Plan

**FAIRGROUNDS:** AQS # 040191020



| Site Description      |                                                                                                                                                                           |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name             | FAIRGROUNDS                                                                                                                                                               |
| AQS ID                | 040191020                                                                                                                                                                 |
| Address               | 11330 S. Houghton Road, Tucson, AZ                                                                                                                                        |
| Latitude / Longitude  | 32.047680 / -110.774350                                                                                                                                                   |
| Elevation             | 3078                                                                                                                                                                      |
| Surrounding landscape | Natural desert vegetation on lag gravel                                                                                                                                   |
| Location description  | This site is situated in an undisturbed natural desert area to the north and east. The Pima County Fairgrounds and drag strip are located directly southwest of the site. |
|                       |                                                                                                                                                                           |

## 2016 Ambient Air Monitoring Network Plan

### Monitoring Information

|                                                                             |                                                                         |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Site Name</b>                                                            | <b>FAIRGROUNDS</b>                                                      |
| <b>Pollutant</b>                                                            | <b>OZONE</b>                                                            |
| Method code                                                                 | 047                                                                     |
| Number of monitors                                                          | 1                                                                       |
| Parameter code / POC                                                        | 44201 / 1                                                               |
| Basic monitoring objective / Statement of purpose                           | NAAQS comparison / Background                                           |
| Site type                                                                   | Background                                                              |
| Instrument Manufacturer / Model                                             | Thermo Scientific / 49i                                                 |
| FRM/FEM/ARM/other                                                           | FEM                                                                     |
| Collecting agency / Reporting agency                                        | PDEQ/ PDEQ                                                              |
| Analytical lab                                                              | n/a                                                                     |
| Monitor type                                                                | Special Purpose / SLAMS January, 2017                                   |
| Scale                                                                       | Urban                                                                   |
| Number of daily observations                                                | 365                                                                     |
| Number / Dates of 8-hour standard exceedances in 2016                       | 0                                                                       |
| Historical exceedances                                                      | One in 2008 and 2011                                                    |
| Current Sampling frequency / Season                                         | Continuous                                                              |
| Probe height                                                                | 3.6 meters above the ground on a shelter on Tucson's far southeast side |
| Probe material / Residence time                                             | FEP Teflon / 8.64 seconds                                               |
| Degrees of unrestricted air flow                                            | 360                                                                     |
| Distance from supporting structure                                          | 1.22 meters                                                             |
| Distance from obstruction on roof                                           | n/a                                                                     |
| Distance from obstruction not on roof                                       | n/a                                                                     |
| Distance from trees                                                         | n/a                                                                     |
| Distance to furnace or incinerator flue                                     | n/a                                                                     |
| Distance between collocated monitors/<br>Schedule / Collocated monitor type | n/a                                                                     |
| Nearest roads distance & direction to monitor / ADT                         | 53 meters west of Houghton road with a 2015 ADT of 11,752               |
| Site meets 40 CFR 58, Appx. A,C,D,E                                         | Yes                                                                     |
| MSA                                                                         | Tucson, AZ 8520                                                         |

**Comments:** Fairgrounds was established in October 1989. Ozone concentrations at this site have been the highest in the network on occasion. This may be due to the afternoon wind shift that takes place almost daily in the Tucson basin. The wind may be transporting urban ozone precursors or stable ozone to the far east end of the Tucson air planning area.



## Attachment A



**PIMA COUNTY**  
ENVIRONMENTAL QUALITY

33 N. Stone Avenue, Suite 700  
Tucson, Arizona 85701-1429  
[www.pima.gov/deq](http://www.pima.gov/deq)

Ursula Kramer Nelson, P.E.  
Director

(520) 724-7400  
FAX (520) 838-7432

March 31, 2016

Meredith Kurpius, Ph.D.  
Manager, Air Quality Analysis Office  
U.S. Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

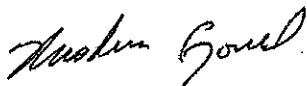
Dear Dr. Kurpius:

We are requesting EPA's approval to discontinue monitoring non-source oriented Pb (Pb-TSP) at the Pima County Department of Environmental Quality's Children's Park NCore site, Site ID 04-019-1028. This request is being made under the provisions of 40 CFR 58.14 and recent revisions to appendix D of 40 CFR Part 58, Section 3(b) and Sections 4.5(b) and 4.5(c), published in the Federal Register on March 28, 2016.

After 3 years' worth of completed data collection, from 2013 through 2015, the calculated design value for Pb at the Children's Park NCore site is 0.00 ug/m<sup>3</sup>, which is well below the NAAQS criteria of >0.15ug/m<sup>3</sup>.

Thank you for your consideration.

Sincerely,



Theodore Gould  
Environmental Planning Manager  
Pima County Dept. of Env. Quality

TG/MD/vb

## Attachment B



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

MAY 16 2016

RECEIVED BY  
PIMA COUNTY

MAY 23 2016

DEPARTMENT OF  
ENVIRONMENTAL QUALITY

Mr. Theodore Gould  
Environmental Planning Manager  
Pima County Department of Environmental Quality  
33 North Stone Avenue  
Suite 700  
Tucson, Arizona 85701-1429

Dear Mr. Gould:

The U.S. Environmental Protection Agency (EPA) has reviewed your letter dated March 31, 2016, requesting approval to discontinue lead (Pb) monitoring at your Children's Park NCore site. With this letter, EPA approves closure of the Pb monitors at the Children's Park NCore site (AQS ID: 04-019-1028, POC1 and POC2).

Pima County began monitoring for Pb at Children's Park on February 27, 2012 and installed a collocated monitor on January 1, 2014. The highest three-month rolling average measured from March 2012 through the end of 2015 was  $0.00 \mu\text{g}/\text{m}^3$ . As stated in the preamble to the revised monitoring rule (81 FR 17259), EPA anticipated that waiver requests for shutdown of Pb monitoring at urban NCore sites would be received based on three years of data showing design values well below the 2008 Pb National Ambient Air Quality Standards (NAAQS).

EPA approves this shutdown based on a case-by-case approval per 40 CFR 58.14(c). Discontinuance does not compromise data collection needed for implementation of the Pb NAAQS, and the requirements of Appendix D will continue to be met after this monitor is closed as Pb monitoring is no longer required at urban NCore sites.

Please include your March 31, 2016 request letter and this response in your network plan. Thank you, and feel free to contact Gwen Yoshimura at [yoshimura.gwen@epa.gov](mailto:yoshimura.gwen@epa.gov) or 415-947-4134 should you have any questions.

Sincerely,

Meredith Kurpius  
Chief, Air Quality Analysis Office

cc (via email): Mike Draper, Pima County

## Attachment C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

OCT 31 2016

Ms. Ursula Nelson, Director  
Pima County Department of Environmental Quality  
33 North Stone Avenue, Suite 700  
Tucson, Arizona 85701-1429

Dear Ms. Nelson:

Thank you for your submission of the Pima County Department of Environmental Quality's (PDEQ's) 2015 Ambient Air Monitoring Network Plan in June 2016. We have reviewed the submitted document based on the requirements set forth under 40 CFR 58. Based on the information provided in the plan, the U.S. Environmental Protection Agency (EPA) approves all portions of the network plan except those specifically identified below. With this plan approval, we also formally approve the re-classification of SPM monitors to SLAMS for the following monitors:

- Childrens Park NCore CO and NO<sub>2</sub> (AQS ID: 04-019-1028)
- Coachline O<sub>3</sub> (AQS ID: 04-019-1034)
- Fairgrounds O<sub>3</sub> (AQS ID: 04-019-1020)
- Green Valley PM<sub>10</sub> and O<sub>3</sub> (AQS ID: 04-019-1030)
- Geronimo PM<sub>10</sub> (AQS ID: 04-019-1113)
- Rose Elementary O<sub>3</sub> (AQS ID: 04-019-1032)
- Santa Clara PM<sub>10</sub> (AQS ID: 04-019-1026)
- Tangerine PM<sub>10</sub> and O<sub>3</sub> (AQS ID: 04-019-1018)

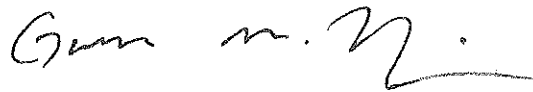
Please note that we cannot approve portions of the annual network plan for which the information in the plan is insufficient to judge whether the requirement has been met, or for which the information, as described, does not meet the requirements as specified in 40 CFR 58.10 and the associated appendices. EPA Region 9 also cannot approve portions of the plan for which the EPA Administrator has not delegated approval authority to the regional offices. Accordingly, the first enclosure (*A. Annual Monitoring Network Plan Items where EPA is Not Taking Action*) provides a listing of specific items of your agency's annual monitoring network plan where EPA is not taking action. The second enclosure (*B. Additional Items Requiring Attention*) is a listing of additional items in the plan that EPA wishes to bring to your agency's attention.

The third enclosure (*C. Annual Monitoring Network Plan Checklist*) is the checklist EPA used to review your plan for overall items that are required to be included in the annual network plan along with our assessment of whether the plan submitted by your agency addresses those requirements.

The first two enclosures highlight a subset of the more extensive list of items reviewed in the third enclosure. All comments conveyed via this letter (and enclosures) should be addressed (through corrections within the plan, additional information being included, or discussion) in next year's annual monitoring network plan.

If you have any questions regarding this letter or the enclosed comments, please feel free to contact me at (415) 947-4134 or Jennifer Williams at (415) 972-3938.

Sincerely,



Gwen Yoshimura, Acting Manager  
Air Quality Analysis Office

Enclosures:

- A. Annual Monitoring Network Plan Items where EPA is Not Taking Action
- B. Additional Items Requiring Attention
- C. Annual Monitoring Network Plan Checklist

cc (via email): Ted Gould, PDEQ