GILA RIVER INDIAN COMMUNITY

DEPARTMENT OF ENVIRONMENTAL QUALITY

June 30, 2017

Sent via email to: Flagg.MichaelA@epa.gov

Michael Flagg
USEPA R9 Air Division
75 Hawthorne St.
San Francisco, CA 94105

Re: 2016 GRIC Air Monitoring Network Review document
Gila River Indian Community

Dear Mr. Flagg:

The Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) has developed an Ambient Air Monitoring Network Review document for the year 2016. GRIC DEQ presented the document to the members of the Gila River Indian Community through a public meeting.

The *2016 Ambient Air Monitoring Network Review* is attached for your review and approval of the requested recommendations within the document.

Thank you. If you have any questions please contact me at Leroy.WilliamsJR@gric.nsn.us or (520) 796-3782.

Sincerely,

Leroy Williams,
Environmental Engineer, GRIC DEQ Air Quality Program

cc w/ attachment: Dale Ohnmeiss, GRIC DEQ
Ryan Eberle, GRIC DEQ AQ Program
Randall Chang, USEPA R9

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Gila River Indian Community
2016 AMBIENT AIR MONITORING NETWORK REVIEW

GRIC San Tan Mountains to the north, 2016

Gila River Indian Community
Department of Environmental Quality
Air Quality Air Monitoring Program

Table of Contents

Definition of Terms **1**

1 Introduction **4**

2 Air Monitoring Network Design **6**

2.1 Monitoring Objectives 6

2.2 Spatial Scales 6

3 Gila River Indian Community Ambient Air Monitoring Network **8**

3.1 General 8

3.2 Ozone Monitoring Network 10

3.2.1 Background 10

3.2.2 2016 Monitoring Results Summary 11

3.3 PM10 Particulate Monitoring Network 12

3.3.1 Background 12

3.3.2 2016 Monitoring Results Summary 13

3.4 Meteorological Network 14

3.5 Changes to the Network in 2016 14

3.6 Proposed Network Changes and Improvements 14

4 Compliance Discussion **16**

4.1 Minimum Monitoring Requirements 16

4.2 Data Submission Requirements 18

4.3 Air Quality Data 18

4.4 Audits 18

5 Public Notice **20**

5.1 News Release 20

5.2 Public Meeting 20

Figures

Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community 8

Tables

Table 2-1. Relationship Among Monitoring Site Types And Scales Of Representativeness 7

Table 3-1. GRIC Ambient Air Monitoring Sites for 2016 9

Table 3-2. Ambient Air Quality Parameters Monitored at Each Station 9

Table 3-3. National Ambient Air Quality Standards Monitored for Pollutants by GRIC 10
Table 3-4. Site Types for Each Monitoring Station 10
Table 3-5. 2016 8-Hour Average Ozone Summary 12
Table 3-6. Three-Year Average of 4th Highest 8-Hour Ozone 12
Table 3-7. 2016 24-Hour Average PM10 Summary 14
Table 4-1. Ozone Monitoring Requirements for SLAMS (Number of Stations per MSA) 16
Table 4-2. PM10 Monitoring Requirements for SLAMS (Number of Stations per MSA) 16
Table 4-3. Minimum Monitoring Requirements for GRIC Ozone Monitors, 2014-2016 17
Table 4-4. Minimum Monitoring Requirements for GRIC PM10 Monitors, 2014-2016 17
Table 4-5. Sources of Ambient Air Quality Data 18
Table 4-6. Performance Audit Dates for GRIC Ozone Monitors 19
Table 4-7. Semi-Annual Flow Rate Audit Dates for GRIC Continuous TEOM PM10 Monitor 19
Table 5-1. Summary of Comments and Questions Received at Public Meetings in 2017 21

Appendices

A 2016 Air Monitoring Data by Site
B EPA-Required Site Metadata
C Public Notice and Comment Information

DEFINITION OF TERMS

AQMP:	Air Quality Management Plan. The AQMP is a collection of tribal regulations and plans to achieve healthy air quality under the Clean Air Act. For GRIC, the AQMP is synonymous with the Tribal Implementation Plan (TIP).
AQP:	Air Quality Program within the Gila River Indian Community's Department of Environmental Quality.
AQS:	Environmental Protection Agency's Air Quality System
Attainment:	This refers to the NAAQS used to comply with the federal Clean Air Act. After several years of no violations of the NAAQS, the EPA can classify the area as in attainment for that pollutant.
CFR:	Code of Federal Regulations.
Community:	Gila River Indian Community
Continuous monitoring:	A method of monitoring air pollutants that is continually measuring the quantity of the pollutant, either gaseous or particulate. Continuous monitors can be used to obtain real-time or short-term averages of pollutants.
Criteria Pollutants:	Six pollutants (Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone, Particulates, and Sulfur Dioxide) that have NAAQS established by the US EPA.
DEQ:	Gila River Indian Community's Department of Environmental Quality
Design Value:	A design value is a statistic that describes the air quality status of a given area relative to the level of the NAAQS. For a concentration-based standard, the air quality design value is simply the standard-related test statistic. The design value of a pollutant monitoring network is the highest sample value in the network used to compare to the NAAQS; e.g. the 8-hour ozone design value for the network is the monitor with the highest 3-year average of the 4th highest concentrations each year.
EPA:	U. S. Environmental Protection Agency.
Exceptional Events:	An uncontrollable event caused by natural sources of pollution or an event that is not expected to recur at a given location. The AQP makes the determination of which events to classify as exceptional and those events are then flagged in the AQS. If the EPA concurs with the AQP's determination, the measured pollution event will not be used in determination of compliance with the NAAQS.
FEM:	Federal Equivalency Method. An official method, i.e. equipment

	and procedure, of monitoring air pollution that has been determined to produce results similar to the Federal Reference Method (FRM).
Filter-based Monitor:	A method of monitoring particulate pollution that involves exposing a pre- weighed filter to a specific flow volume of air to capture the particulates in the air. The filters are then post-weighed to determine the weight of particulates per volume, e.g. $\mu g/m^3$. Filter-based monitors used by GRIC are all FRM monitors.
FRM:	Federal Reference Method. An official method (i.e. equipment and procedure) of monitoring air pollution that has been tested and determined to produce results that accurately measure air pollution with acceptable precision. These methods are the baseline that all other methods (i.e., FEMs) refer to.
GRIC:	Gila River Indian Community
$\mu g/m^3$:	Microgram per cubic meter.
MSA:	Metropolitan Statistical Area. A geographical area designated by the federal government based on the concept of a core area with a large population nucleus, plus adjacent communities having a high degree of economic and social integration with that core. It is unclear in Appendix D 40 CFR 58 how MSAs apply to sovereign tribes. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), except where a specific designation has been otherwise made by the Administrator, the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA principle does not apply to the GRIC Air Monitoring Network.
NAAQS:	National Ambient Air Quality Standards. A health and welfare-based standard that is set by the US EPA to qualify allowable levels of criteria pollutants.
NO_2:	Nitrogen dioxide.
NO_X:	Nitrogen oxides. Sum of nitric oxide (NO), NO_2, and other nitrogen-containing compounds.
PM:	Particulate matter. Material suspended in the air in the form of minute solid particles or liquid droplets.
PM10:	Particulate matter of 10 microns in diameter or smaller.
NPAP-TTP:	National Performance Audit Program – Through the Probe
POC:	Parameter Occurrence Code is an identification number distinguishing multiple instruments that may measure the same pollutant.
PPM:	Parts per million.

Primary Standard:	One portion of the NAAQS. These standards are designed to protect the public health.
Secondary Standard:	One portion of the NAAQS. These standards are designed to protect the environment.
SIP:	State Implementation Plan. SIPs are a collection of state and local regulations and plans to achieve healthy air quality under the Clean Air Act.
SLAMS:	State and Local Air Monitoring Station. The SLAMS consist of a network of approximately 5,000 monitoring stations nationwide whose size and distribution is largely determined by the needs of State, and local air pollution control agencies to meet their respective SIP requirements. The GRIC monitors operated by the AQP are not part of the SLAMS network, but the AQP operates the monitors in accordance with the requirements for SLAMS.
TEOM:	Tapered Element Oscillating Microbalance. A continuous particulate measuring instrument used by the AQP to measure PM10.
TIP:	Tribal Implementation Plan. The TIP is a collection of tribal regulations and plans to achieve healthy air quality under the Clean Air Act. For GRIC, the TIP is incorporated into and synonymous with the Air Quality Management Plan (AQMP).
VOC:	Volatile organic compounds. VOCs are chemical compounds that can easily vaporize and enter the atmosphere. There are many natural and artificial sources of VOCs; solvents and gasoline make up some of the largest artificial sources. VOCs will react with NO_x in the presence of sunlight to create ground-level ozone pollution.

1 INTRODUCTION

The Code of Federal Regulations (CFR) Title 40 Part 58.10 (40 CFR 58.10) requires an annual monitoring network plan to summarize the air quality surveillance system consisting of State and Local Air Monitoring Stations (SLAMS) and Special Purpose Monitors (SPM) operated under state and local authorities. The annual monitoring network plan must identify the purpose of each monitor and provide evidence that both the siting and the operation of each monitor meet the requirements in 40 CFR Part 58 appendices A, C, D, and E below:

- Appendix A Quality Assurance Requirements for SLAMS, SPMs, and PSD (Prevention of Significant Deterioration) Air Monitoring
- Appendix C Ambient Air Quality Monitoring Methodology
- Appendix D Network Design Criteria for Ambient Air Quality Monitoring
- Appendix E Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring

The Gila River Indian Community (GRIC or Community) Department of Environmental Quality (DEQ) Air Quality Program (AQP) operates air quality monitors that record ambient concentrations of two criteria pollutants - particulate matter less than or equal to 10 microns (PM_{10}) and ozone (O_3). Criteria pollutants are those that the United States Environmental Protection Agency (EPA) has defined as a potential risk to health, and correspondingly defined a National Ambient Air Quality Standard (NAAQS). The NAAQS are intended to protect public health and welfare by setting limits on the allowable level of each pollutant in the ambient air. The other criteria pollutants with established NAAQS that are not monitored by the AQP are particulate matter less than or equal to 2.5 microns (PM2.5), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), and lead (Pb). GRIC does not monitor for these pollutants because they have been found, through discrete sampling and emission inventory, to be at background ambient air quality concentrations. Additionally, GRIC does not have major stationary pollution sources that emit these particular criteria pollutants that may affect the NAAQS within GRIC jurisdictions.

The GRIC air quality monitors are Tribal Monitors and are most closely related to SLAMS monitors. The United States Environmental Protection Agency (EPA) works closely with GRIC to adhere to the requirements for SLAMS networks with appropriate flexibility as stated in the Tribal Authority Rule (TAR).

The purpose of this document is to fulfill the requirements of 40 CFR 58.10, and has been prepared in accordance with *Annual Monitoring Network Plan* checklists and guidance documents provided by USEPA. Therefore, this document contains the following sections:

- **Air Monitoring Network Design** – Describes the design requirements for an air monitoring network in accordance with Appendix D of 40 CFR 58.
- **GRIC Air Monitoring Network** – Describes the air monitoring network for the Community including monitor types, background information, summary of 2016 monitoring results, changes to the monitoring network in 2016, and proposed changes to

the monitoring network.

- **Compliance Discussion –** Includes a discussion of compliance with 40 CFR 58, including a table of requirements for Network Review, minimum monitoring requirements, precision and accuracy certifications, data submittals, and audits.
- **Public Notice –** Includes information on public notices and community outreach for review and presentation of this document.
- **Appendices –** Contains the detailed monitoring site information and photographs, and a copy of the presentation that was prepared for the District meetings.

2 AIR MONITORING NETWORK DESIGN

2.1 Monitoring Objectives

Appendix D of 40 CFR 58 states that monitoring networks must be designed to meet three basic monitoring objectives:

1. Provide air pollution data to the general public in a timely manner;
2. Support compliance with ambient air quality standards and emissions strategy development; and
3. Support air pollution research studies.

Furthermore, Appendix D states that in order to support air quality management work indicated in the three basic objectives above, monitoring networks must be designed with a variety of the following types of monitoring sites:

- Highest Concentration – Sites to determine the highest concentration expected to occur in the area covered by the network;
- Population Exposure – Sites to determine representative concentrations in areas of high population density;
- Source Impacts – Sites to determine the impact on ambient pollution levels of significant sources or source categories;
- Background Concentrations – Sites to determine general background concentration levels;
- Regional Transport – Sites to determine the extent of regional pollutant transport among populated areas, and in support of secondary standards; and
- Welfare Impacts – Sites to determine the welfare-related impacts in more rural and remote areas (such as visibility impairment and effects on vegetation).

2.2 Spatial Scales

The goal in designing a monitoring network is to establish monitoring stations that will provide data to meet the above monitoring objectives. The physical siting of the air monitoring station must achieve a spatial scale of representativeness that is consistent with the monitoring site type, air pollutant to be measured, and the monitoring objective. The spatial scale results from the physical location of the site with respect to the pollutant sources and categories by estimating the size of the area surrounding the monitoring site that experiences uniform pollutant concentrations. The categories of spatial scale are:

- Micro Scale - An area of uniform pollutant concentrations ranging from several meters up to 100 meters.
- Middle Scale – Uniform pollutant concentrations in an area of about 110 meters to 0.5 kilometer.

- Neighborhood Scale – An area with dimensions in the 0.5 to 4 kilometer range.
- Urban Scale – Citywide pollutant conditions with dimensions of from 4 to 50 kilometers.
- Regional Scale – An entire rural area of the same general geography (that ranges from tens to hundreds of kilometers).

The appropriate spatial scale for each of the monitoring site types is shown in Table 2-1.

Table 2-1. Relationship Among Monitoring Site Types And Scales Of Representativeness.

Monitoring Objective	Appropriate Spatial Scale				
	Micro	**Middle**	**Neighborhood**	**Urban**	**Regional**
Highest concentration	X	X	X	X	
Population Exposure			X	X	
Source Impacts	X	X	X		
Background Concentrations			X	X	X
Regional Transport				X	X
Welfare Impacts				X	X

3 GILA RIVER INDIAN COMMUNITY AMBIENT AIR MONITORING NETWORK

3.1 General

There are currently three permanent ambient air monitoring stations within the Community – St. Johns, Casa Blanca, and Sacaton (see Figure 1). All three monitoring stations are Tribal Monitors, but follow the requirements of SLAMS networks with appropriate flexibility as stated in the TAR.

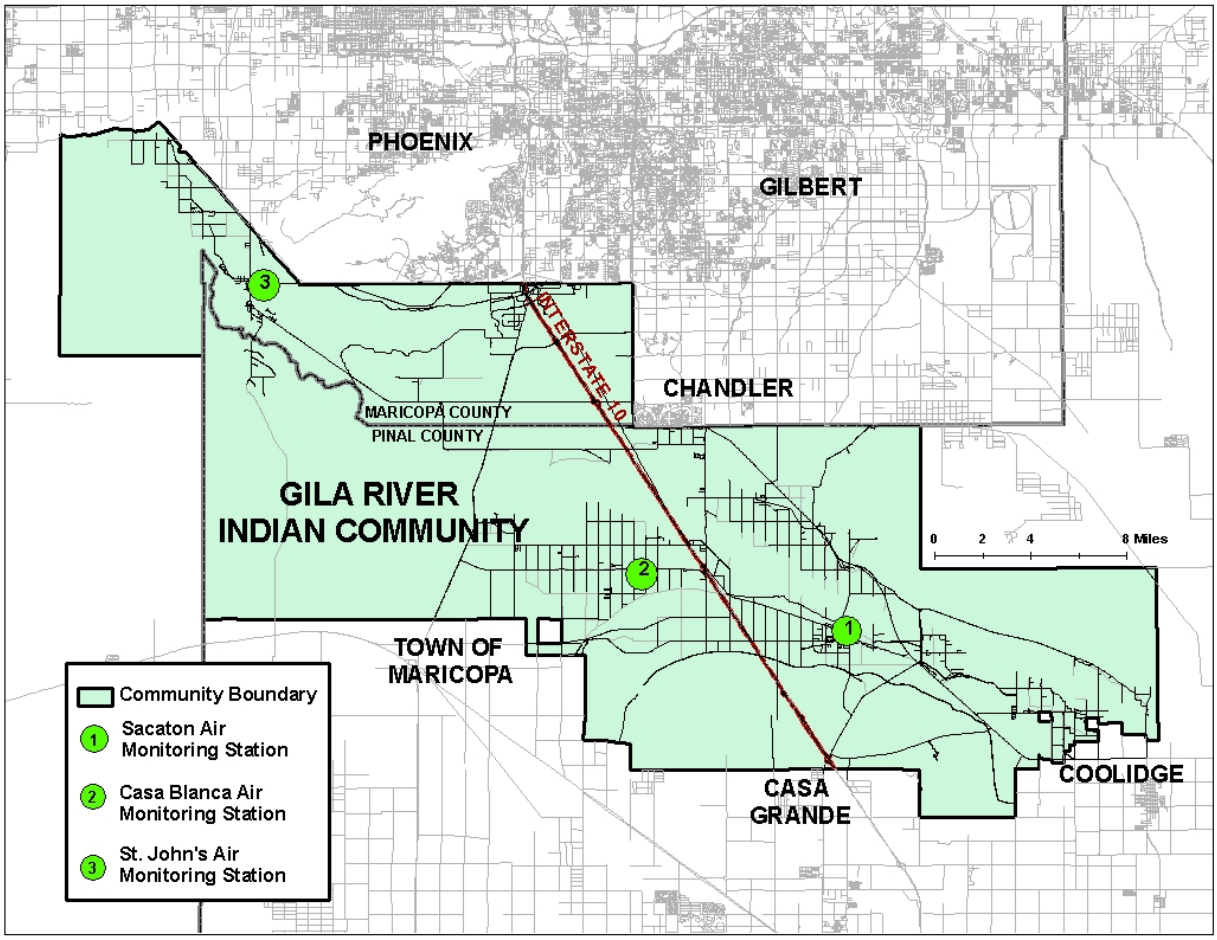


Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community

Table 3-1 lists the details regarding each monitoring site's GRIC abbreviation symbol and EPA's AQS identification number. Detailed site information is provided in Appendix A that includes photographs, site type, spatial scale, and population represented. In addition, Appendix B provides detailed monitoring technical specifications.

Table 3-1. GRIC Ambient Air Monitoring Sites for 2016

Name	GRIC Abbreviation	AQS ID
St. Johns	SJ	04-013-7003 and TT-614-7003 (Tribal Monitor)
Sacaton	Sac	04-021-7001 and TT-614-7001 (Tribal Monitor)
Casa Blanca	CB	04-021-7004 and TT-614-7004 (Tribal Monitor)

Table 3-2 lists these stations and the pollutants and meteorological parameters that are monitored at each location.

Table 3-2. Ambient Air Quality Parameters Monitored at Each Station

Parameter	Monitoring Station		
	St. Johns	Casa Blanca	Sacaton
Ozone	X		X
PM_{10} (TEOM)	X	X	X
Wind Speed	X	X	X
Wind Direction	X	X	X
Ambient Temperature	X	X	X
Ambient Barometric Pressure	X	X	X
Precipitation	X	X	X
Relative Humidity	X	X	X
Camera (Visibility)	X	X	X

Table Notes:
PM10 - Particulate Matter ≤ 10 microns
TEOM - Tapered Elemental Oscillating Microbalance. Continuous measuring monitor (1 hr averages).

Table 3-3 shows the NAAQS for pollutants that are currently monitored by GRIC, including ozone and PM_{10}. Additional pollutants for which EPA has established NAAQS and that are not currently monitored by GRIC include sulfur dioxide, nitrogen dioxide, carbon monoxide, PM2.5, and lead. GRIC continues to not have significant concerns with these additional pollutants as described within the *Introduction* section of this document. EPA periodically reviews and revises these standards based on new public health and scientific information. These revisions often require changes to air monitoring networks and methodologies.

Table 3-3. National Ambient Air Quality Standards Monitored for Pollutants by GRIC

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Ozone	primary and secondary	8-hour	0.070 PPM *	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
PM_{10}	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years

* October 1, 2015, the EPA promulgated revised primary and secondary eight-hour ozone NAAQS from 0.075 to 0.070 PPM.

The site types represented by each air quality monitor are shown in Table 3-4.

Table 3-4. Site Types for Each Monitoring Station

Site Type	Ozone		Particulate Matter ≤10 Microns (PM10)		
	St. Johns	Sacaton	St. Johns	Casa Blanca	Sacaton
Highest Concentration	X			X	
Population Exposure	X	X	X	X	X
Source Impacts				X	
Background Concentrations	X	X	X	X	X
Regional Transport	X	X	X	X	X
Welfare Impacts					

Detailed site information for each of the monitoring locations in presented in Appendix A.

3.2 Ozone Monitoring Network

Beginning in 2002, the Community started monitoring for ozone at two locations - one in Sacaton (District 3) and one in St Johns (District 6). In 2016, both ozone monitors were reported as operational in AQS. Before 2016, the GRIC ozone monitors were only operational during ozone season (April to October).

GRIC started monitoring ozone, at both GRIC sites, on an annual schedule beginning January 1, 2016. GRIC will monitor on an annual schedule throughout 2017 and a data review will be performed in June 2017 for seasonal monitoring reconsideration.

3.2.1 Background

The following subsections provide background information on the two ozone monitoring locations. Additional detailed information for each monitor is provided in Appendix B.

3.2.1.1 Sacaton

Operated by the AQP since 2002, this site provides background and regional transport ozone monitoring on a regional scale. This site is located near the central GRIC government and business district of Sacaton, which includes four schools and a community hospital. It also provides a measurement of representative area ozone concentration for the community of Sacaton and surrounding areas. The monitor generally measures background levels of ozone during prevailing West or East winds. However, under the right wind conditions, the monitor can also detect ozone and ozone precursor transport from the Phoenix Metropolitan Area (PMA), north of the Community, in the form of elevated ozone readings. Measured concentrations at this site are often similar to those recorded at Pinal County's Casa Grande monitor (approximately 9 miles south of Sacaton).

3.2.1.2 St. Johns

Initially operated by the AQP at Vee Quiva Casino (AQS ID 7002) in 2002 and then relocated 2 miles south to Gila Crossing Middle School (AQS ID 7003) in September 2004. This site is located in District 6 on the southwest side of the South Mountain Range near the City of Phoenix and provides background and regional transport ozone monitoring on a regional scale. Ozone concentrations at this site exhibit strong diurnal fluctuations caused by oxides of nitrogen (NOx) and volatile organic compounds (VOC) from nearby neighboring jurisdictions in the City of Phoenix. The monitor generally measures background levels of ozone during prevailing West or East winds. However, under the right wind conditions, the monitor can also detect ozone and ozone precursor transport from the PMA, north and east of the monitor location, in the form of elevated ozone readings.

3.2.2 2016 Monitoring Results Summary

The 1-hour average ozone standard was revoked by the EPA on June 15, 2005, and has been replaced by the 8-hour average standard for compliance purposes. On March 12, 2008, the EPA lowered the eight-hour ozone NAAQS from 0.080 to 0.075 ppm.

Then again on October 1, 2015, the EPA lowered the eight-hour ozone NAAQS from 0.075 to 0.070 ppm. Compliance with the standard is determined by averaging the 4th highest eight-hour average over a three-year period. This three-year average must be less than or equal to 0.070 ppm.

There were no exceedances, at either GRIC site, of the 8-hour primary standard (NAAQS) ozone in 2016. Table 3-5 presents the four highest 8-hour average ozone readings for each monitor during the 2016 monitoring season (January – December).

Table 3-5. 2016 8-Hour Average Ozone Summary

Site	Max (PPM) Date	2nd High (PPM) Date	3rd High (PPM) Date	4th High (PPM) Date	Number of Days >0.070
St Johns	0.068 5/3/2016	0.067 5/28/2016	0.065 5/27/2016	0.065 7/30/2016	0
Sacaton	0.069 7/20/2016	0.068 7/30/2016	0.067 7/21/2016	0.066 5/27/2016	0

In 2016, there were no violations of the 8-hour average NAAQS for ozone (the 8-hour average NAAQS for ozone is violated when the three-year average of the fourth highest values for each year is greater than 0.070 ppm). The fourth highest 8-hour average ozone reading for each of the past three years and the 3-year average is shown in Table 3-6.

Table 3-6. Three-Year Average of 4th Highest 8-Hour Ozone

Site	2014 4th High (PPM)	2015 4th High (PPM)	2016 4th High (PPM)	3-Year Average of 4th High (PPM)
St Johns	0.069	0.067	0.065	0.067
Sacaton	0.066	0.064	0.066	0.065

3.3 PM_{10} Particulate Monitoring Network

Beginning in 2002, the Community started monitoring for PM_{10} at one location (Casa Blanca) using a Federal Reference Method (FRM), filter-based, monitor operating on a 1-in-3 day schedule. In 2013, the Community began continuous monitoring methods for PM_{10} at all three monitoring stations (St. Johns, Casa Blanca, and Sacaton) using Federal Equivalent Method (FEM) Tapered Element Oscillating Microbalance (TEOM) monitors that provide hourly PM_{10} averages. In 2016, all three TEOM FEM monitors were reported as operational in AQS. There are no collocation requirements for EPA-approved PM_{10} FEM monitors.

3.3.1 Background

The following subsections provide background information on the three PM_{10} monitoring locations. Additional detailed information for each monitor is provided in Appendix B.

3.3.1.1 Casa Blanca

This site has been operated by the AQP since 2002. This monitoring site is a neighborhood scale and representative of particulate concentrations in District 5, Casa Blanca. The site consists of one TEOM monitor. Since there are no collocation requirements for EPA-approved PM_{10} FEM monitors, the two collocated FRM samplers (two identical monitors that sample separately) were discontinued on December 31, 2014.

This monitoring site was originally placed in one of the three most populated areas of the Community to measure source impacts from agricultural areas. Although located in a neighborhood of agricultural operations, it can be representative of other areas beyond the local jurisdictions. This monitoring station is located approximately 4 to 5 miles northeast of other PM_{10} sources (e.g., agricultural areas and dairy operations) that are outside of the Community's boundaries and control, and may be influenced by PM_{10} generated from those sources.

3.3.1.2 Sacaton and St. Johns

The Sacaton and St. Johns sites started reporting PM_{10} data to the AQS database beginning January 1, 2013. Both sites are currently set up to monitor PM_{10} concentrations using continuous TEOM monitors. These two sites have been approved for monitoring and reporting as established within the GRIC Quality Assurance Project Plan (QAPP).

3.3.2 2016 Monitoring Results Summary

The 24-hour Primary standard for PM10 is 150 $\mu g/m^3$ (155 $\mu g/m^3$ with mathematical rounding). The interpretation of the standard, Appendix K to Part 50, includes rounding to the nearest 10 $\mu g/m^3$ (*i.e.*, values ending in 5 or greater are to be rounded up). This standard is violated when the expected number of exceedances at a monitor is more than one per year on average over three years. A formula, as detailed in 40 CFR 50, is used to determine the expected number of exceedances. The formula takes into account the number of days sampling occurred and the number of valid samples collected. A 3-year average of these estimated days is then used to determine compliance.

In 2016, there were 15 exceedances of the 24-hour primary standard (NAAQS) for PM_{10} from a combination of the three (3) PM_{10} monitors, and GRIC violated the PM_{10} NAAQS on thirteen (13) days in 2016 (some exceedances at different monitors occurred on the same day). However, GRIC has flagged all 15 of the exceedances as *exceptional events* (see Definitions of Terms). In accordance with the EPA's exceptional events policy, once approved, these data are not used in determining compliance with the NAAQS. Table 3-7 presents the summary of the 24-hour average PM_{10} readings for each monitor in 2016.

Exceedances of the 24-hour PM_{10} NAAQS at the GRIC monitors also occurred in 2014 and 2015 and were flagged as Exceptional Events by GRIC. As of the date of this report, the EPA has not issued an official concurrence with GRIC's 2014 and 2015 data. Therefore, a determination of compliance with the 24-hour PM_{10} NAAQS cannot be made at this time.

Table 3-7. 2016 24-Hour Average PM10 Summary

Site Name (Monitor Type)	24-hr Average Max (μg/m^3)	24-hr Average 2nd High (μg/m^3)	Number of 24-hr NAAQS Exceedances	Estimated Exceedances (Including Exceptional Events requested)	Annual Average (μg/m^3)	No. of Exceptional Events	No. of valid days / days possible
St Johns (TEOM)	218* 4/15/2016	211* 4/25/2016	2*	2	33.8†	2	363 / 366
Sacaton (TEOM)	201* 7/29/2016	171* 1/31/2016	5*	5	40.2†	5	356 / 366
Casa Blanca (TEOM-POC3)	228* 9/26/2016	207* 7/29/2016	8*	8.1	52.0†	8	357 / 366

* Data has been flagged by GRIC as an Exceptional Event.
†The annual average values include exceptional events data that has not been concurred by EPA.

3.4 Meteorological Network

GRIC DEQ collects meteorological data at all three air monitoring sites to support the analysis of ambient air quality data and to provide support for exceptional event reporting.

3.5 Changes to the Network in 2016

The following changes were made to the monitoring network in 2016:

- The Sacaton Site (TT-614-7001) was relocated to the EPA-approved site on April 1, 2016 for ozone (44201) and PM_{10} (81102). This request and approval was documented in the 2015 Air Monitoring Network Review.
- There were no changes made to the GRIC PM_{10} Monitoring Network in 2016.
- GRIC started monitoring ozone on an annual schedule, January 1st to December 31st, in 2016.

3.6 Proposed Network Changes and Improvements

The GRIC Air Monitoring Network plans to make the following changes to the air monitoring network during the latter half of 2017:

- The Sacaton Site will be relocated 0.69 miles west from the current location. The GRIC District 3 Service Center (local municipality) plans to develop the area where the site is located. A request for approval to USEPA Region 9 has been prepared. The AQP plans to complete relocation to the new site by end of calendar year 2017.
- A request for traditional seasonal ozone monitoring between April 1st and October 31st has been prepared by the AQP. Pending approval by EPA, the AQP plans to implement

the traditional seasonal ozone monitoring in 2018 (April 1, 2018 through October 31, 2018). GRIC DEQ Air Monitoring Network will complete the 2017 annual monitoring schedule by December 31, 2017.

4 COMPLIANCE DISCUSSION

In accordance with 40 CFR 58.10(a)(1), the following sections provide information on compliance with the requirements of Appendices A, C, D, and E of 40 CFR 58. A cross-reference of the requirements of Appendices A, C, D, and E of 40 CFR 58 and the section(s) of this report that address those requirements is included in tables provided in Appendix B of this document for all three GRIC air monitoring sites.

4.1 Minimum Monitoring Requirements

Tables D-2 and D-4 in Appendix D of 40 CFR Part 58 define minimum monitoring requirements for ozone and PM_{10}, respectively. Tables D-2 and D-4 are reproduced as Tables 4-1 and 4-2, respectively, below. The minimum monitoring requirements are based on the population of the Metropolitan Statistical Area (MSA) and the design value for each NAAQS.

Table 4-1. Ozone Monitoring Requirements for SLAMS (Number of Stations per MSA)

MSA Population	Most recent 3-year design value ≥85% NAAQS	Most recent 3-year design value <85% NAAQS
>10 million	4	2
4-10 million	3	1
350,000-<4 million	2	1
50,000-<350,000	1	0

Table 4-2. PM10 Monitoring Requirements for SLAMS (Number of Stations per MSA)

MSA Population	High concentration Exceeds NAAQS by 20% or more (>180 µg/m^3)	Medium concentration >80% of NAAQS (>120 µg/m^3)	Low concentration < 80% of NAAQS (<120 µg/m^3)
>1,000,000	6-10	4-8	2-4
500,000-1,000,000	4-8	2-4	1-2
250,000-500,000	3-4	1-2	0-1
100,000-250,000	1-2	0-1	0

It is unclear in Appendix D 40 CFR 58 how MSAs and the minimum monitoring requirements in Tables D-2 and D-4 (Tables 4-1 and 4-2) apply to sovereign tribes. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), except where a specific designation has been otherwise made by the Administrator, the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the AQP is using the data in Tables D-2 and D-4 as guidance.

The design value is a calculated value based upon the highest recorded concentration at a site in the attainment or nonattainment area. The process for computing the design value for each criteria pollutant is described in the appendices of 40 CFR Part 50. For the purpose of this document, the design values listed are the highest calculated concentrations recorded in the Community.

The minimum monitoring requirements of 40 CFR 58 Appendix D for the ozone and PM10 monitors within the Community are presented in Tables 4-3 and 4-4, respectively. The GRIC Air Quality Management Plan (AQMP) does not require a minimum number of monitors for the Community.

Table 4-3. Minimum Monitoring Requirements[1] for GRIC Ozone Monitors, 2014-2016

MSA	Monitor Site: County	Population[2] (GRIC Census 2016)	8-hour Design Value for 2014-2016 (ppm)	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA[1]	St. Johns: Maricopa	12,633	0.067	St. Johns (TT-614-7003)	0[A]	2	0
	Sacaton: Pinal		0.065	Sacaton (TT-614-7001)			

Table Notes:

1. It is unclear in Appendix D 40 CFR 58 how MSAs apply to Tribal agencies. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA is not applicable to GRIC.
2. Number of members who reside within GRIC, 12/31/2016.

A. A 3-year design value greater than 0.0595 would require one monitor for a population between 50,000 and 350,000 (smallest population group in Table 4-2). Since the GRIC population is below the lowest population range in Table 4-2 and Tribal requirements are unclear, the minimum monitoring requirements was assumed to be zero. For comparison, the population of the Phoenix-Mesa-Scottsdale MSA in 2010 was 4,192,887 (according to the 2010 census), which would require a minimum of 3 monitors.

Table 4-4. Minimum Monitoring Requirements[1] for GRIC PM10 Monitors, 2014-2016

MSA	Monitor Site: County	Population[2] (GRIC Census 2016)	Max Concentration (µg/m^3)	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA[1]	St. Johns: Maricopa	12,633	325[A] 154[B]	St Johns (04-013-7003 and TT-614-7003 POC1)	0[C]	3	0
	Sacaton: Pinal			Sacaton (TT-614-7001 and TT-614-7001 POC1)			
	Casa Blanca: Pinal			Casa Blanca (TT-614-7004 and TT-614-7004 POC3)			

Table Notes:

1. It is unclear in Appendix D 40 CFR 58 how MSAs apply to Tribal agencies. Although the areas within the Community are *geographically* part of the Phoenix-Mesa-Scottsdale MSA, for purposes of the administration of Section 107 of the Clean Air Act (42 U.S.C. § 7407), the air quality control region for the Community is all land within the exterior boundaries of the Community. Therefore, for the purposes of this document, the MSA is not applicable to GRIC.
2. Number of members who reside within GRIC, 12/31/2016.

A. Max concentration <u>including</u> data flagged as exceptional events. CB site, 4/26/2014.

B. Max concentration <u>excluding</u> data flagged as exceptional events. Sac site, 7/3/2014.

C. A maximum concentration greater than 180 µg/m^3 would require 1-2 monitors for a population between 100,000 and 250,000 (smallest population group in Table 4-2). A maximum concentration between 120 and 180 µg/m^3 would require 0-1 monitors for a population between 100,000 and 250,000. Since the GRIC population is below the lowest population range in Table 4-2 and Tribal requirements are unclear, the minimum monitoring requirements was assumed to be zero. For comparison, the population of the Phoenix-Mesa-Scottsdale MSA in 2010 was 4,192,887 (according to the 2010 census), which would require a minimum of 6-10 monitors for maximum concentrations >180 µg/m^3 and 4-8 monitors for maximum concentrations between 120 and 180 µg/m^3.

Based on the information contained in Tables 4-3 and 4-4, the GRIC monitoring network meets

the minimum monitoring requirements for all criteria pollutants measured (i.e., ozone and PM10) as established in 40 CFR 58 Appendix D, Tables D-2 and D-4.

4.2 Data Submission Requirements

Federal regulations (Appendix A of 40 CFR 58 and 40 CFR 58.15) require air monitoring organizations to submit precision and accuracy data for the data reported to the federal database. The air monitoring precision and accuracy data for the GRIC monitors are submitted to the USEPA AIRS/AQS database on a quarterly basis and are up to date as of the publication of this report.

Federal regulations (40 CFR 58.15) also require the air monitoring organization to annually submit a letter certifying that data has been submitted for that year to the EPA AQS database and that the data accurately represents the air quality in the Community. The AQP certified and submitted the 2016 air monitoring data for the Community to USEPA Region 9 Administrator on April 5, 2017 via Email.

4.3 Air Quality Data

All of the GRIC ambient air monitoring stations are registered with the EPA and regularly report NAAQS criteria pollutant data to the EPA's AQS database. The data generated at these stations are public information and are available in various formats from the respective agencies. Table 4-5 below lists some popular sources for air quality data.

Table 4-5. Sources of Ambient Air Quality Data

Agency	Address For Data Requests	Email / Internet address	Data Available
GRIC DEQ AQP	P.O. Box 97 Sacaton, AZ 85147 attn: GRIC DEQ Director	Dale.Ohnmeiss.DEQ@gric.nsn.us	GRIC Air Monitoring Data
United States Environmental Protection Agency	Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460	www.epa.gov www.epa.gov/ttn/airs/airsaqs/index	National Air Monitoring Data, including GRIC data

4.4 Audits

The AQP performed audits of the monitoring equipment in 2016. The performance audit dates for the ozone monitors are shown in Table 4-6 and the semi-annual audits dates for the continuous TEOM PM10 monitors are shown in Table 4-7. In addition, this information is included in Appendix B that provides detailed information of air monitoring specifications.

Table 4-6. Performance Audit Dates for GRIC Ozone Monitors

Site	AQS ID	Parameter	2016 Audit Dates
Sacaton	04-021-7001 and TT-614-7001 (Tribal Monitor)	Ozone	6/16, 7/27, and 9/26
St Johns	04-013-7003 and TT-614-7003 (Tribal Monitor)	Ozone	3/30, 4/15, 4/18, 9/27, and 11/15

Table 4-7. Semi-Annual Flow Rate Audit Dates for GRIC Continuous TEOM PM10 Monitor

Site	AQS ID	Parameter	2016 Audit Dates
Sacaton (TEOM)	04-021-7001 and TT-614-7001 (Tribal Monitor)	PM10	5/17, 6/16, 9/26, and 12/08
St. Johns (TEOM)	04-013-7003 and TT-614-7003 (Tribal Monitor)	PM10	9/27 and 11/15
Casa Blanca (TEOM)	04-021-7004 and TT-614-7004 POC3 (Tribal Monitor)	PM10	3/17 and 4/26

Table 4-8. National Performance Audit Program (NPAP) Date for GRIC Ozone Monitoring Network

Site	AQS ID	Parameter	2016 Audit Dates[1]
Sacaton	04-021-7001 and TT-614-7001 (Tribal Monitor)	Ozone	4/21/2016

5 PUBLIC NOTICE

In accordance with 40 CFR 58.10, the annual monitoring network plan must be made available for public inspection (website, hardcopy posting in libraries and public offices, and/or newspaper listing) for at least 30 days prior to submission to EPA. If an opportunity for public comment had been provided, comments received must be included in the annual network plan submission.

The Gila River Indian Community DEQ made a draft copy of this Network Review available to the public on June 16, 2017. In an effort to notify the public of the Network Review, the AQP published information through the following outlets:

- Public Notice posted in the Gila River Indian Newspaper, a newspaper of general circulation in Gila River Indian Community.
- Public Notice posted on the GRIC DEQ website (www.gricdeq.org/index.php/education--outreach/public-notices).
- Presentation at a scheduled Community public open house event.

5.1 News Release

The following news release was advertised in the Gila River Indian Newspaper, VOL. 20, No. 11 Edition (dated June 2, 2017):

> **PUBLIC NOTICE OF AMBIENT AIR MONITORING NETWORK REVIEW**
>
> *Pursuant to 40 Code of Federal Regulations (CFR) §58.10 Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) Air Quality Program (AQP) will make its annual monitoring network plan available for public inspection prior to submission to the United States Environmental Protection Agency. The Annual Ambient Monitoring Network Review and Data Summary present changes to and data collected from the air quality monitoring network during calendar year 2016. This document will also be available for review at the GRIC DEQ office located at 35 Pima Street, Sacaton, AZ 85147, and on the AQP website at "http://www.gricdeq.org/index.php/air-quality-program/documents". Additionally, presentation will be provided at Governance Center Lobby, GRIC, Sacaton, AZ on June 21, 2017, 10AM-2PM.*
>
> *Public comments may be submitted in writing to GRIC DEQ Air Quality, P.O. Box 97, Sacaton, Arizona, 85147, or comments may be given orally at the scheduled community meeting. Additional information is available from GRIC DEQ Air Quality, 35 Pima Street, Sacaton, Arizona, the AQP website "http://www.gricdeq.org/index.php/air-quality-program", or by calling 520-562-2234.*

There were no requests made to review the document.

5.2 Public Meeting

The AQP also presented a summary of the content of this document during the public open house

event on June 21, 2017 at the GRIC Governance Center. A copy of the public announcement and handouts are included as Appendix C. The comments and questions received from the Community members at the meeting are included in Table 5-1 below.

Table 5-1. Summary of Comments and Questions Received at the Open House Meeting in 2017

From	Comments / Questions Received
Community member	Why isn't there a monitor in District 7? You must receive a lot of complaints because of agriculture.
Community member	The only main concern I have is the pesticide (drift) that might linger into our homes when they're done spraying the fields. These planes fly over head and dump whatever into the air.
Community member	Where can the community find air quality data for the day?
Community member	How do we monitor the air?
Community member	Where on the Community are the color flags of the AQI Flag Program located that forecast air quality?
Community member	How long have we been monitoring the air?
Community member	Have we done a network report for previous years?

Appendix A

2016 AIR MONITORING DATA BY SITE

(Site information includes: photographs, site type and spatial scale, and population represented.)

- St. Johns
- Casa Blanca
- Sacaton

St. Johns (SJ), 04-013-7003/TT-614-7003 (Tribal Monitor)

Location: 4208 W. Pecos Rd
Laveen, AZ 85339

Spatial Scale: Urban (O_3) and Neighborhood (PM_{10})

Monitoring Type: Population Exposure

Site Description: This site has been operational since 2003. The spatial scale for the St. Johns site is neighborhood for PM_{10} and Urban Scale for Ozone. It is located in a residential area and on a community elementary school property. This Tribal Monitoring location monitors for Ozone and PM_{10}. This site operates one gaseous ozone analyzer and one continuous PM_{10} monitor that are both FEM instruments. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation. This site also includes two digital cameras that take 15 minute still images.

Pollutant	Condition	2014	2015	2016
O_3	Max. 8-hr O_3 Average (PPM)	0.076	0.072	0.068
	O_3 # Daily Exceedances > 0.075 PPM	1	0	0
	O_3 # Daily Exceedances > 0.070 PPM	1	1	0
	O_3 3-year Average of 4th Highest (PPM)	0.069	0.068	0.067
PM_{10}	Max. 24-hr PM_{10} Average ($\mu g/m^3$)	160*	203*	218*
	Number of exceedances 24-hr PM_{10}	1†	2†	2†
	Annual PM_{10} Average ($\mu g/m^3$)	32.0ǂ	26.7ǂ	33.8ǂ

* Indicates an exceedance of the NAAQS
† Indicates exceptional events concurrence requested at this site and no Regional EPA assessment to date.
ǂ The annual average values include exceptional events data that has not been concurred by EPA.

Sacaton (Sac), 04-021-7001/TT-614-7001 (Tribal Monitor)

Location: 45 S. Church Street, Sacaton, AZ 85147

Spatial Scale: Urban (O_3) and Neighborhood (PM_{10})

Monitoring Type: Population Exposure

Site Description: This site has been operational since 2002. The spatial scale for the Sacaton site is neighborhood for PM_{10} and Urban Scale for Ozone. It is located in a community residential area. This Tribal Monitoring location monitors for Ozone and PM_{10}. This site operates one gaseous ozone analyzer and one continuous PM_{10} monitor that are both FEM instruments. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation. In addition, this site operates a video camera system.

Pollutant	Condition	2014	2015	2016
O_3	Max. 8-hr O_3 Average (PPM)	0.076	0.067	0.069
	O_3 # Daily Exceedances > 0.075 PPM	1	0	0
	O_3 # Daily Exceedances > 0.070 PPM	1	0	0
	O_3 3-year Average of 4th Highest (PPM)	0.067	0.065	.065
PM_{10}	Max. 24-hr PM_{10} Average ($\mu g/m^3$)	197*	145	201*
	Number of exceedances 24-hr PM_{10}	3†	0	5†
	Annual PM_{10} Average ($\mu g/m^3$)	42.6ǂ	30.6ǂ	40.2ǂ

* Indicates an exceedance of the NAAQS

† Indicates exceptional events concurrence requested at this site and no Regional EPA assessment to date.

ǂ The annual average values include exceptional events data that has not been concurred by EPA.

Casa Blanca (CB), 04-021-7004/TT-614-7004 (Tribal Monitor)

Location: 3455 W. Casa Blanca Road Bapchule, AZ 85121

Spatial Scale: Neighborhood

Monitoring Type: Population Exposure, Highest concentration (PM_{10})

Site Description: This site has been operational since 2002. The spatial scale for the Casa Blanca site is neighborhood. It is located in a residential area and within a community elementary school property. This Tribal Monitoring location monitors for PM_{10}. This site operates one continuous PM_{10} monitor that is a FEM instrument. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation. In addition, this site operates two digital cameras that take images every 15 minutes.

Pollutant	Condition	2014	2015	2016
PM_{10}	Max. 24-hr PM_{10} Average ($\mu g/m^3$)	325*	191*	228*
	Number of exceedances 24-hr PM_{10}	8†	3†	8†
	Annual PM_{10} Average ($\mu g/m^3$)	49.9ǂ	40.6ǂ	52.0ǂ

* Indicates an exceedance of the NAAQS

† Indicates exceptional events concurrence requested at this site and no Regional EPA assessment to date.

ǂ The annual average values include exceptional events data that has not been concurred by EPA.

Appendix B

EPA-REQUIRED SITE METADATA

Detailed information includes: compliance information regarding air monitoring technical specifications found in 40 CFR §58.10 and Appendices A, C, D, and E (QA, monitoring methods, network design, and monitor siting)

Site Schematic Descriptions

Analysis Method (filter samples only) refers to the method used to process and analyze PM and Pb filter samples.

Distance from Supporting Structure refers to those sample probes that are attached to a supporting structure, such as the side of a building. In most cases the sample probe is located above the supporting structure, in which case the entry will show as "N/A", aka not applicable.

Distance from Obstructions refers to those obstructions, both on the roof and off the roof, which are located higher than the probe. In the case of a nearby obstruction being higher than the probe, details of its location will be listed in the entry. If there are no obstructions higher than the probe, then the entry will be N/A.

Date of Annual Performance Evaluation refers to the last 2016 QA audit on the gaseous analyzers. These evaluations are performed by the GRIC's QA personnel. Twenty-five percent of the monitors operating within each gaseous pollutant's network are evaluated quarterly; thereby, each monitor is evaluated at least once per year as per 40 CFR Part 58, Appendix A, §3.2.2.

Date of Semi-Annual Flow Rate Audit refers to the last 2016 QA audit on PM monitors as per 40 CFR Part 58, Appendix A, §§ 3.2.4 and 3.3.4, respectively. These evaluations are performed by the GRIC's QA personnel at least once every six months.

Probe Sample Line Material refers to the material makeup of the intake sample lines.

Pollutant Sample Residence Time refers to the amount of time that it takes a sample of air to travel between the probe inlet and the bulkhead of the analyzer. This residence time is calculated by a formula that is based on the sample line's diameter and length, and the flow rate of the air intake. It is important to keep residence time low to prevent gases in the air sample from reacting with the sample line material or with other gases in the sample; i.e., O3 could react with nitrogen oxides in the sample if the residence time exceeds 20 seconds.

St. Johns
GRIC ID: SJ
AQS ID: 04-013-7003 and TT-614-7003 (Tribal Monitor Code)
Address: 4208 W. Pecos Rd Laveen, AZ
Coordinates: N 33° 17’ 24.55”, W 112° 09’ 35.57”; (elevation 1059 ft)

- General Information		
Pollutant (parameter code)	O3 (44201)	PM10 (81102)
Parameter Occurrence Code (POC)	1	1
Sampling Schedule	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No
Is site suitable for comparison to PM2.5 NAAQS per Part 58.30?	N/A	N/A
-Appendix A Requirements		
# Precision Checks Performed Annually	30	14
# Accuracy Audits Performed Annually& Date of Last 2016 Check on Gaseous Analyzers & Last Two 2016 Checks for PM	5, 11/15/2016	2, 9/27/2016 & 11/15/2016
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	April 5, 2017	April 5, 2017
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Monthly
-Appendix C Requirements		
Sampler Make & Model (method code)	API T400 (087)	TEOM 1405 (079)
Date Established	03/24/2003	01/01/2013
Classification	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
-Appendix D Requirements		
Monitoring Type	Population Exposure	Populations Exposure
Monitoring Scale	Regional	Neighborhood
Sampling Season	Jan – Dec (begin 1/1/16)	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes
-Appendix E Requirements		
Distance between collocated samplers	N/A	N/A
Probe Inlet Height	5.3 meters	5.3 meters
Airflow Arc	360 degree	360 Degree
Probe Sample Line Material	Teflon	NA
Pollutant Sample Residence Time	4.8 seconds	NA
Distance from Supporting Structure	NA	NA
Distance from Obstructions	14 meters	14 meters
Distance to Furnace Flue	None	None
Spacing from Trees	32 meters	32 meters
Nearest Major Roadway	Pecos Road	Pecos Road
Distance and Direction to Road	32 meters, North	32 meters, North
Traffic Count (ADT)	374 (2003)	374 (2003)
Groundcover	Gravel, natural soil	Gravel, natural soil

Sacaton
GRIC ID: Sac
AQS ID: 04-021-7001 and TT-614-7001 (Tribal Monitor Code)
Address: 35 Pima Street, PO Box 97, Sacaton, AZ 85147
Coordinates: N 33° 04’ 47.88”, W 111° 44’ 26.27”; (elevation 1280 ft)

- General Information		
Pollutant (parameter code)	O3 (44201)	PM10 (81102)
Parameter Occurrence Code (POC)	1	1
Sampling Schedule	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A
Any Proposal to Remove or Move Monitor?	Yes	Yes
Is site suitable for comparison to PM2.5 NAAQS per Part 58.30?	N/A	N/A
-Appendix A Requirements		
# Precision Checks Performed Annually	27	18
# Accuracy Audits Performed Annually& Date of Last 2016 Check on Gaseous Analyzers & Last Two 2016 Checks for PM	3, 9/26/2016	4, 9/26/2016 & 12/8/2016
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	April 5, 2017	April 5, 2017
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Monthly
-Appendix C Requirements		
Sampler Make & Model (method code)	API T400 (087)	TEOM 1400AB (079)
Date Established	07/01/2002	01/01/2013
Classification	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
-Appendix D Requirements		
Monitoring Type	Population Exposure	Population Exposure
Monitoring Scale	Regional	Neighborhood
Sampling Season	January – December	January – December
Network Meets Minimum Number of Monitors Required?	Yes	Yes
-Appendix E Requirements		
Distance between collocated samplers	N/A	N/A
Probe Inlet Height	5 meters	5 meters
Airflow Arc	360 degree	360 Degree
Probe Sample Line Material	Teflon	NA
Pollutant Sample Residence Time	4.8 seconds	NA
Distance from Supporting Structure	NA	NA
Distance from Obstructions	25 meters, nearest tree	25 meters, nearest tree
Distance to Furnace Flue	None	None
Spacing from Trees	25 meters	25 meters
Nearest Major Roadway	W Pima Street	W Pima Street
Distance and Direction to Road	60 meters, South	60 meters, South
Traffic Count (ADT)	253 (daily average 2008)	253 (daily average 2008)
Groundcover	Pavement and natural soil	Pavement and natural soil

Casa Blanca
GRIC ID: CB
AQS ID: 04-021-7004 and TT-614-7004 (Tribal Monitor Code)
Address: Casa Blanca/ Preschool Road, Bapchule, AZ 85221
Coordinates: N 33° 07’ 03.14”, W 111° 53’ 08.93”; (elevation 1203 ft)

- General Information	
Pollutant (parameter code)	PM10 (81102)
Parameter Occurrence Code (POC)	3
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to PM2.5 NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	15
# Accuracy Audits Performed Annually& Date of Last 2016 Check on Gaseous Analyzers & Last Two 2016 Checks for PM	2, 3/17/2016 & 4/26/2016
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	April 5, 2017
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Monthly
-Appendix C Requirements	
Sampler Make & Model (method code)	TEOM 1400AB (079)
Date Established	July 1, 2002
Classification	Tribal
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	Population Exposure
Monitoring Scale	Neighborhood
Sampling Season	January - December
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	4.67 meters
Airflow Arc	360 Degree
Probe Sample Line Material	NA
Pollutant Sample Residence Time	NA
Distance from Supporting Structure	NA
Distance from Obstructions	8.9 meters, building to S
Distance to Furnace Flue	NA
Spacing from Trees	9.6 meters, tree to East
Nearest Major Roadway	Casa Blanca Road
Distance and Direction to Road	19 meters, to north
Traffic Count (ADT)	2400 (daily average 2008)
Groundcover	gravel

Appendix C

Public Notice and Comment Information

1. Figure C-1. 2016 public notice and news release information.
2. Figure C-2. Public Meeting Attendance.
3. Figure C-3. Public Meeting Handout (*3 page FAQ Sheet*).

Figure C-1. 2016 public notice and news release information.

AQI

AIR QUALITY INDEX

Air Quality Index (AQI) Values	Levels of Health Concern
0 to 50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301 to 500	Hazardous

Note: Hazardous is extremely rare and not included in the Flag Program

GRIC•AMBIENT•AIR•MONITORING

GILA RIVER INDIAN COMMUNITY
DEPARTMENT OF ENVIRONMENTAL QUALITY

June 21st, 2017 10am-2pm
Governance Center Lobby
Gila River Indian Community
Sacaton, AZ

PLEASE STOP BY TO LEARN MORE ABOUT 2016 AIR QUALITY IN THE COMMUNITY AND THE STATUS OF OUR AIR MONITORING NETWORK

FOR MORE INFO, PLEASE CALL 520-562-2234 WWW.GRICDEQ.ORG

Figure C-2. Public Meeting Attendance:

Gila River Indian Community
Air Quality Program
2016 Ambient Air Quality Monitoring Network Review

Open House
Governance Center Lobby
Sacaton, AZ
June 21st, 2017

Name	District	Contact Information (Optional)
Darius Enos	6	
Monica Governor [illegible]	4	
Lori Rios	2	
Adam [illegible]	3	
Anli Munoz	3	562-4782 work
Steve Mendoza	DCM	562.3624
Thomas Throssell	T.O.	562.9352
Molly Cole Bakale	6	(520) 993-1724
Johanna M. Marie	5	—
Percival Schaney	5	—
Manuel Hernandez	5	
Paulette Gomez	1	520-560-2665
[illegible]	3	562-3684
Leroy Williams	GRIC DEQ AQ	520-562-2234

Figure C-3. Public Meeting Handout (*3 page FAQ Sheet*):

2016 Gila River Indian Community Ambient Air Quality Monitoring Network Review

FAQ Sheet

What is an Ambient Air Quality Monitoring Network Review?

It is a document that describes the air monitoring network for the Community including monitor types, background information, summary of annual monitoring results, and changes and future recommendations to the monitoring network. This annual document identifies the purpose of each monitor and provides evidence that the operation of each monitor meet the requirements in the Federal Regulations. In other words, it fulfills requirements needed for a regulatory air monitoring program.

What are the pollutants monitored in our network?

GRIC Department of Environmental Quality (DEQ) Air Quality Program(AQP) operates air quality monitors that record ambient concentrations of two criteria air pollutants- particulate matter less than or equal to 10 microns (PM_{10}) and ozone (O_3).

What are Criteria Air Pollutants?

Criteria Air Pollutants are those that the United States Environmental Protection Agency (EPA) has defined as a potential risk to human health and the environment. These six common air pollutants include particulate matter, ground-level ozone, carbon monoxide, lead, sulfur dioxide, and nitrogen dioxide. Due to the health risks of these pollutants, EPA has set National Ambient Air Quality Standards (NAAQS) for them.

Why do we only monitor two of the six criteria air pollutants?

The Clean Air Act (CAA) requirements are designed for high population areas and emission sources. Consequently, GRIC and other tribes do not fit all of the CAA monitoring requirements. Furthermore, tribes are not required to conduct ambient air monitoring. GRIC does not monitor for these pollutants because they have been found, through discrete sampling and emission inventories, to be at background ambient (outdoor) air quality concentrations. Additionally, GRIC does not have major stationary pollution sources that emit these particular criteria pollutants that may significantly affect the NAAQS within GRIC jurisdiction.

What is the NAAQS?

The National Ambient Air Quality Standards (NAAQS) are intended to protect public health and welfare by setting limits on the allowable level of each criteria pollutant in the ambient air. These standards, also known as public health standards, were developed through scientific-based studies that indicate the level or amount of air in which the public can safely breathe. The NAAQS for Ozone (O_3) is 0.070 parts per million (ppm) based on the annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years. The NAAQS for PM_{10} is to not exceed 150 micrograms per cubic meter (μg/m3) more than once per year on average over 3 years.

What is Particulate Matter?

It is particle pollution that comes from many different types of sources. Coarse particles (between 2.5 and 10 micrometers) that GRIC monitors come from crushing and grinding operations, road dust, and

www.gricdeq.org

agricultural operations. Particulate matter can be a problem at any time of the year and can cause serious health problems (asthma attacks, heart attacks, and strokes).

What is Ozone?

Ozone is a colorless gas found in the air we breathe. Ozone can be good or bad, depending where it occurs. Good ozone is present in the Earth's upper atmosphere shielding us from the sun's harmful ultraviolet rays. Bad ozone is present at ground level, where we breathe, because it can harm human health. Ozone forms when two types of pollutants (VOCs and NO_x) react in sunlight, usually on hot summer days. These pollutants come from sources such as vehicles, industries, power plants, and products like solvents and paints.

Where are the GRIC ambient air monitors located?

There are currently three permanent ambient air monitoring stations within the Community.

1. St. Johns (SJ) (District 6) - located in a residential area by Gila Crossing North Campus school property. This site location monitors for Ozone and PM_{10}.
2. Casa Blanca (CB) (District 5) - located in a residential area within Casa Blanca elementary school property. This site location monitors for PM_{10}.
3. Sacaton (Sac) (District 3) - located near the Ira Hayes Memorial Library at the DEQ headquarters. This site location monitors for Ozone and PM_{10}.

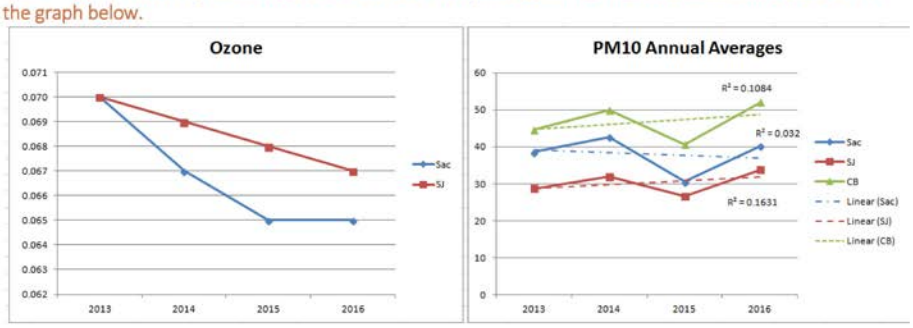
Meteorological data is collected at all three air monitoring sites which include measurements of ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation.

Why are they located there?

Air monitoring sites are strategically based throughout the Community to provide data that meets monitoring objectives: Highest Concentrations, Population Exposure, Source Impacts, Background Concentrations, Regional Transport, and Welfare Impacts. For example, the Casa Blanca site analyzes for PM_{10} in the agricultural center of the Community and all three monitors are placed in locations within the highest population centers on the Community.

How does the 2016 monitoring data compare with previous years' data?

Prior to 2016, ozone levels were below the 2008 NAAQS of 0.075 ppm. Then on October 1st, 2015, the EPA lowered the 8-hour ozone NAAQS from 0.075 to 0.070 ppm, which was applicable starting with the 2016 data. The air monitoring network continues to show compliance with the new ozone standard as shown in the graph below.



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Looking at the PM_{10} graph above, one can see the PM10 annual average concentrations are below the NAAQS standards of 150 $\mu g/m^3$ with annual averages measuring around 50 $\mu g/m^3$ or less. However, this graph includes flagged data for exceptional events in the calculation. An exceptional event is uncontrollable and caused by natural sources of pollution or an event that is not expected to recur at a given location. The AQP assesses any exceedances and makes an initial determination whether or not they were caused by an exceptional event. Those events that are determined to be exceptional are then flagged by the AQP in the AQS database. If EPA concursthat the events are exceptional, then the exceedances are removed from the calculation to determine compliance with the NAAQS. GRIC experienced multiple exceedances in the past four years (13 in 2013, 12 in 2014, 5 in 2015, and 15 in 2016) from a combination of the three monitors with some that occurred on the same day at different monitors. However, GRIC has flagged all 45 of the exceedences as exceptional events. Once approved, these data are not used in determining compliance with the NAAQS.

Is the air getting cleaner?

This is a difficult question to answer because there are so many variables to factor in from year-to-year. Based on the ozone graph above, ozone concentrations appear to be on a downward trend. However, ozone on the Community is largely influenced by the Phoenix metropolitan area, day of the week, and weather conditions. A period of hot, stagnant air can easily cause ozone concentrations to become elevated. Similarly, PM_{10} measurements are influenced by weather and local and upwind activities within the area (such as agriculture and construction). A warmer, drier season means less moisture in the soil, which may make smaller soil particles (e.g., PM_{10}) more susceptible to entrainment at lower wind speeds. Based on the PM_{10} graph above, the variations in the annual average from year-to-year make trends difficult to determine with any degree of accuracy.

Can we get a monitor in our district?

Regulatory air quality monitors are expensive to operate and maintain. Additionally, the existing air monitoring stations already exceeds the minimum monitoring objectives outlined in Federal regulations. Therefore, there are currently no plans to expand the monitoring network. The Air Quality Program is preparing a mobile monitoring trailer to conduct simultaneous air monitoring at the Sacaton site through the end of 2017. In 2018, pending the availability of resources, the AQP may be able to conduct short-term informational monitoring in other Districts in the Community.

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