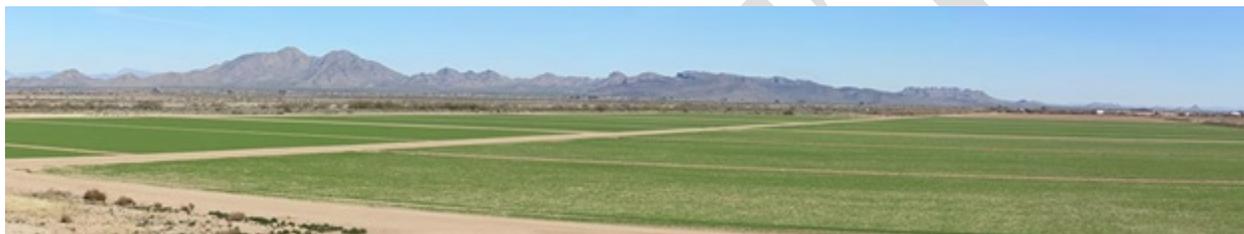

Gila River Indian Community 2018 AMBIENT AIR MONITORING NETWORK REVIEW AND 2019 PLAN



Gila River Indian Community, San Tan Mountains to the north in background



Gila River Indian Community, Estrella Mountains to the south in background



**Gila River Indian Community
Department of Environmental Quality
Air Quality Air Monitoring Program
April 2019**

Table of Contents

Definition of Terms 1

Abstract..... 4

1 Introduction..... 5

2 Air Monitoring Network Design..... 7

 2.1 Monitoring Objectives 7

 2.2 Spatial Scales 7

3 Gila River Indian Community Ambient Air Monitoring Network..... 9

 3.1 General..... 9

 3.2 Ozone Monitoring Network..... 11

 3.2.1 Background..... 11

 3.2.2 2018 Monitoring Results Summary 12

 3.3 PM10 Particulate Monitoring Network..... 13

 3.3.1 Background..... 13

 3.3.2 2018 Monitoring Results Summary 14

 3.4 Meteorological Network 15

 3.5 Changes to the Network in 2018..... 15

 3.6 Proposed Network Changes and Improvements 16

4 Compliance Discussion 17

 4.1 Minimum Monitoring Requirements 17

 4.2 Data Submission Requirements 19

 4.3 Air Quality Data..... 19

 4.4 Audits..... 19

5 Public Notice..... 21

 5.1 News Release 21

 5.2 Public Meeting..... 22

Figures

Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community9

Tables

Table 2-1. Relationship Among Monitoring Site Types And Scales Of Representativeness..... 8

Table 3-1. GRIC Ambient Air Monitoring Sites for 2018..... 10

Table 3-2. Ambient Air Quality Parameters Monitored at Each Station..... 10

Table 3-3. National Ambient Air Quality Standards Monitored for Pollutants by GRIC	11
Table 3-4. Site Types for Each Monitoring Station.....	11
Table 3-5. 2018 8-Hour Average Ozone Summary.....	13
Table 3-6. Three-Year Average of 4 th Highest 8-Hour Ozone	13
Table 3-7. 2018 24-Hour Average PM10 Summary.....	15
Table 4-1. Ozone Monitoring Requirements for SLAMS (Number of Stations per MSA)	17
Table 4-2. PM10 Monitoring Requirements for SLAMS (Number of Stations per MSA).....	17
Table 4-3. Minimum Monitoring Requirements ¹ for GRIC Ozone Monitors, 2016-2018.....	18
Table 4-4. Minimum Monitoring Requirements ¹ for GRIC PM10 Monitors, 2016-2018	18
Table 4-5. Sources of Ambient Air Quality Data	19
Table 4-6. Performance Audit Dates for GRIC Ozone Monitors	20
Table 4-7. Semi-Annual Flow Rate Audit Dates for GRIC Continuous TEOM PM10 Monitor	20
Table 4-8. National Performance Audit Program (NPAP) Date for GRIC Ozone Monitoring Network.....	20
Table 5-1. Summary of Comments and Questions Received from GRIC members and visitors at the public meetings in 2019	22

Appendices

- A. 2018 Air Monitoring Data by Site
- B. EPA-Required Site Metadata
- C. EPA Letter of Approval for GRIC’s 2017 Air Monitoring Network Review
- D. St Johns Site Relocation Details and Information
- E. EPA Letter of Approval for 2019 Season Ozone Waiver
- F. Public Notice and Comment Information

DEFINITION OF TERMS

AMNR:	Air Quality Monitoring Network Review.
AMNRP:	Air Quality Monitoring Network Review and Plan.
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 4 th 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. $\mu\text{g}/\text{m}^3$. 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
$\mu\text{g}/\text{m}^3$:	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 <i>geographically</i> 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.
- TAR:** Tribal Authority Rule.
- 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.

ABSTRACT

In 2018, Gila River Indian Community (GRIC) Department of Environmental Quality (DEQ) Air Quality Program (AQP) successfully continued to operate an air quality Surveillance system that monitored for regulated ambient air pollutants as per 40 CFR Parts 50 and 58. This Annual Monitoring Network Review and Plan (AMNRP) documents how the system performed during 2018. The air monitoring data produced are intended for regulatory compliance determinations regarding regulated ambient air pollutants.

In addition, this document describes the changes that are planned to occur within the next 18 months. The AQP informs personnel at the Environmental Protection Agency's Region 9 (EPA R9) office of any significant data collection interruptions immediately.

During 2018, some notable accomplishments were:

- GRIC successfully completed 2018 with 97% data completeness reporting to EPA's AQS data repository.
- The Sacaton site was successfully relocated on January 29, 2018 with minimal interruption to the data gathering process; this request and approval was documented in the GRIC's 2017 AMNR.
- The St Johns site was successfully temporarily relocated on July 2, 2018, with minimal interruption to the data gathering process. The AQP was informed on May 7, 2018, that the school property including GRIC DEQ's air monitoring site area will be completely renovated with a new school facility. The AQP was able to temporarily relocate the site 0.35 miles southeast within GRIC's Komatke Health Center complex.
- GRIC received approval for a seasonal ozone waiver from EPA for 2019. GRIC will monitor ozone from April 1st through October 31st in 2019.
- GRIC's Exceptional Event Dust Mitigation Plan was prepared and submitted to EPA R9 for review, and EPA R9 determined the document was complete.
- GRIC was designated Attainment/Unclassified for the 2015 Ozone NAAQS.
- The EPA performed a Technical Systems Audit on the GRIC's air monitoring network on April 19-20, 2018.

In 2019, the following changes are planned for the air monitoring network:

- The Gila Crossing School construction/renovation is planned to be completed by July 2019. The renovation project planning and design included a space for the St Johns air monitoring site. The temporary St Johns site at Komatke Health Center will relocate back into the school complex when construction is completed.
- GRIC will monitor ozone from April 1st through October 31, 2019.

The GRIC air monitoring network and tools operated in 2018 meets the necessary requirements as mandated by Federal regulations. This Annual Network Plan documents the details of the regulatory ambient air quality monitors.

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

This AMNRP meets the federal regulatory requirements set forth in 40 CFR 58.10 and Appendices A, C, D, and E.

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 (PM₁₀) and ozone (O₃). 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 (PM_{2.5}), 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 EPA. 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 2018 monitoring results, changes to the monitoring network in 2018, 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.

DRAFT

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 - Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
- Middle Scale – Defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer.

- **Neighborhood Scale** – Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range. The neighborhood and urban scales listed below have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
- **Urban Scale** – Defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
- **Regional Scale** – Defines usually a rural area of reasonably homogeneous geography without large sources, and extends 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 – Sacaton, Casa Blanca, and St. Johns (see Figure 3-1). All three monitoring stations are Tribal Monitors, but follow the requirements of SLAMS networks with appropriate flexibility as stated in the TAR.

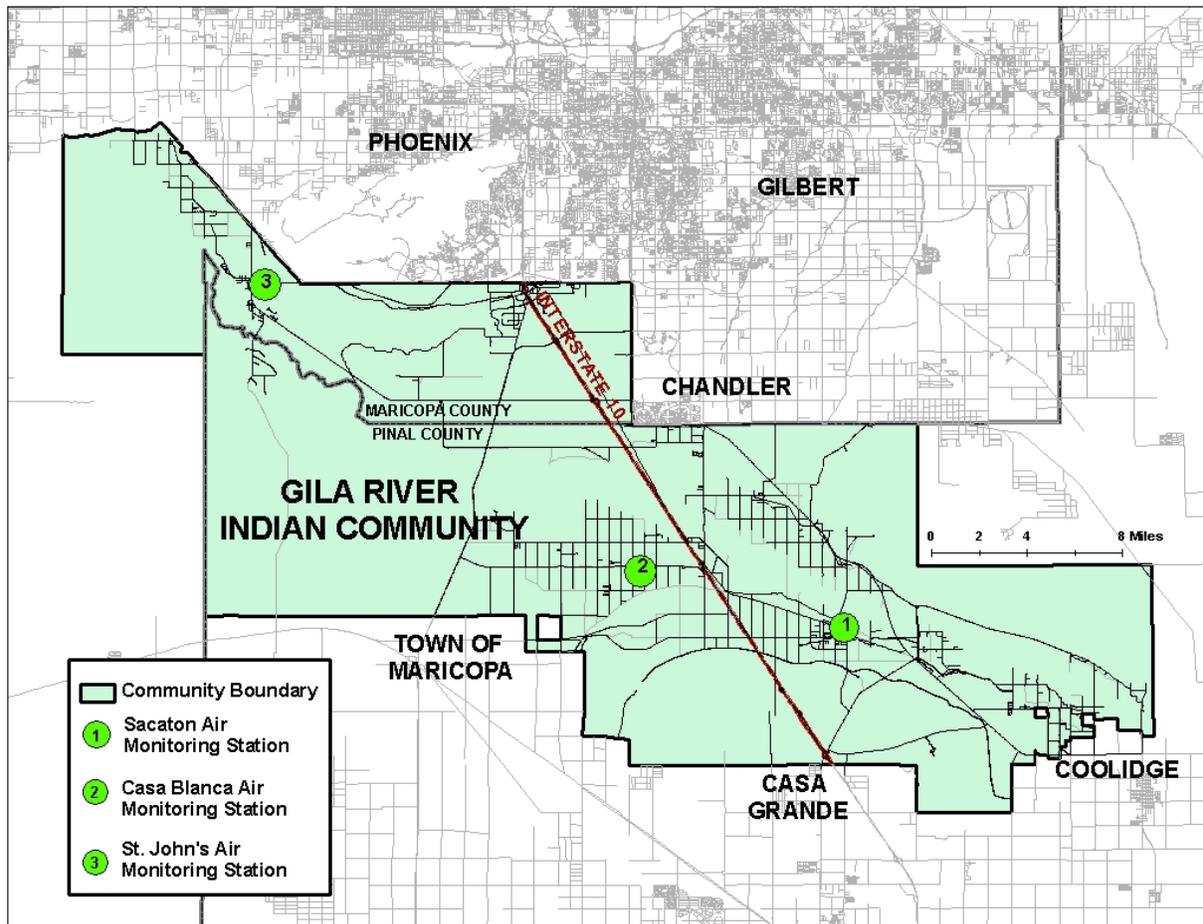


Figure 3-1: Map of Ambient Air Monitoring Stations on Gila River Indian Community

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 2018

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

Table 3-2 lists these stations, 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: PM ₁₀ - 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 PM₁₀. Additional pollutants for which EPA has established NAAQS and that are not currently monitored by GRIC include sulfur dioxide, nitrogen dioxide, carbon monoxide, PM_{2.5}, 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 GRIC 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 (PM ₁₀)		
	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 is 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); both monitors operated on seasonal schedule from April through October. The GRIC ozone monitoring network changed to a year round schedule starting January 1, 2016. Both ozone monitors were reported as operational in AQS from January 1st to December 31st.

GRIC requested to EPA on September 4, 2018 for a waiver to only monitor ozone during ozone season (April 1st thru October 31st). The waiver was granted on January 19, 2019 (EPA document attached in Appendix E).

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 an urban 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 Monitor ID 7002) in 2002 and then relocated 2 miles south to Gila Crossing Middle School (AQS ID TT-614-7003) 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 an urban scale. Ozone concentrations at this site exhibit strong diurnal fluctuations caused by oxides of nitrogen (NO_x) 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 2018 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 of the daily maximum eight-hour average over a three-year period. This three-year average must be less than or equal to 0.070 ppm.

In 2018, there were two days where the daily maximum 8-hour ozone average exceeded the NAAQS; however, the fourth highest values were below the NAAQS. Table 3-5 presents the four highest 8-hour average ozone readings for each monitor during the 2018 monitoring season (January – December).

Table 3-5. 2018 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	0.071 7/31/2018	0.070 8/11/2018	0.067 8/10/2018	0.066 5/5/2018	1
Sacaton	0.071 7/31/2018	0.069 8/11/2018	0.068 4/24/2018	0.068 8/2/2018	1

In 2018, 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	2016 4 th High (PPM)	2017 4 th High (PPM)	2018 4 th High (PPM)	3-Year Average of 4 th High (PPM)
St Johns	0.065	0.068	0.066	0.066
Sacaton	0.066	0.066	0.068	0.066

3.3 PM₁₀ Particulate Monitoring Network

Beginning in 2002, the Community started monitoring for PM₁₀ 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 PM₁₀ 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 PM₁₀ averages. In 2018, all three TEOM FEM monitors were reported as operational in AQS. There are no collocation requirements for EPA-approved PM₁₀ FEM monitors.

3.3.1 Background

The following subsections provide background information on the three PM₁₀ 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 PM₁₀ 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 PM₁₀ sources (e.g., agricultural areas and dairy operations) that are outside of the Community's boundaries and control, and may be influenced by PM₁₀ generated from those sources.

3.3.1.2 Sacaton and St. Johns

The Sacaton and St. Johns sites started reporting PM₁₀ data to the AQS database beginning January 1, 2013. Both sites are currently set up to monitor PM₁₀ 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 2018 Monitoring Results Summary

The 24-hour Primary standard for PM₁₀ is 150 µg/m³ (155 µg/m³ with mathematical rounding). The interpretation of the standard, Appendix K to Part 50, includes rounding to the nearest 10 µg/m³ (*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 2018, there were 31 exceedances of the 24-hour primary standard (NAAQS) for PM₁₀ from a combination of the three (3) PM₁₀ monitors; seventeen (17) days of exceedances in 2018 (some exceedances at different monitors occurred on the same day). GRIC has flagged all 31 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 PM₁₀ readings for each monitor in 2018.

Exceedances of the 24-hour PM₁₀ NAAQS at the GRIC monitors also occurred in 2016 and 2017 which also included some flagged data due to Exceptional Events by GRIC. As of the date of this report, the EPA has not issued an official concurrence with GRIC's 2016 and 2017 data. Therefore, a determination of compliance with the 24-hour PM₁₀ NAAQS cannot be made at this time.

Table 3-7. 2018 24-Hour Average PM10 Summary

Site Name (Monitor Type)	24-hr Average Max ($\mu\text{g}/\text{m}^3$)	24-hr Average 2nd High ($\mu\text{g}/\text{m}^3$)	Number of 24-hr NAAQS Exceedances	Estimated Exceedances (Including Exceptional Events requested)	Annual Average ($\mu\text{g}/\text{m}^3$)	No. of Exceptional Events	No. of valid days / days possible
St Johns (TEOM)	318* 8/2/2018	249* 7/8/2018	9*	9.8	37.4†	9	357 / 365
Sacaton (TEOM)	278* 5/11/2018	260* 4/12/2018	9*	9	39.9†	9	365 / 365
Casa Blanca (TEOM-POC3)	471* 4/12/2018	295* 1/9/2018	13*	13.1	56.6†	13	362 / 365

* Data has been flagged by GRIC as an Exceptional Event; RJ flag for high winds.
 †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 2018

The following changes were made to the monitoring network in 2018:

- The Sacaton Site (TT-614-7001) relocation was requested to EPA Region 9 on October 20, 2017 for ozone (44201) and PM₁₀ (81102). The request and approval was documented in the 2017 Air Monitoring Network Review. The actual relocation was performed on January 29, 2018 through February 5, 2018.
- The St Johns Site (TT-614-7003) relocation was due to the redevelopment of the parent property with the new Gila Crossing Elementary School. The AQP had received notice of the redevelopment activities in May 2018 and only two months before the monitoring equipment had to be removed from the site in July 2018. The AQP updated EPA Region 9 via an Email on June 4, 2018 to Meredith Kurpius and others, see Appendix D. A brief summary was provided in the 2017 Air Monitoring Network Review document. A Memorandum of Agreement between DEQ and Gila River Health Care (GRHC) was established to temporarily setup the mobile monitoring trailer on the GRHC Komatke Health Center campus approximately 0.35 miles southeast of original site. The monitoring trailer setup occurred the week of June 25th and the temporary St Johns site was active on July 2, 2018. The temporary St. Johns monitoring site/trailer meets the Appendix E siting requirements.

3.6 Proposed Network Changes and Improvements

The GRIC Air Monitoring Network has made the following changes to the air monitoring network during the first six months of 2019:

- The GRIC ozone monitors will be on a seasonal schedule; ozone season starts on April 1, 2019 through October 31, 2019.
- The new Gila Crossing School is scheduled to be completed by July 2019. An area within the new school design has been assigned for the St Johns Site. The AQP actively participated in the design of the designated site area, and appropriate siting criteria requirements described in Appendix E to part 58 were followed closely. From July 2018 to July 2019, the AQP plans to use a mobile monitoring trailer as the temporary St. John monitoring site in the vicinity of the local health center (Komatke Health Center). The AQP will start preparing for relocation back to school grounds based on the progress of the construction activity with anticipated reinstallation activities occurring in May and June 2019.

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 PM₁₀, 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. MSA must contain an urbanized area of 50,000 or more population.

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 reference only.

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 Requirements¹ for GRIC Ozone Monitors, 2016-2018

MSA	Monitor Site: County	Population ² (GRIC Census 2017)	8-hour Design Value for 2016- 2018 (ppm)	Site (AQS ID)	Minimum Monitors Required	Number of Active Monitors	Monitors Needed
NA ¹	St. Johns: Maricopa	12,633	0.066	St. Johns (TT-614-7003)	0 ^A	2	0
	Sacaton: Pinal		0.066	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 2017 estimate was 4,737,270 residents (Census Bureau), which would require a minimum of 3 monitors.

Table 4-4. Minimum Monitoring Requirements¹ for GRIC PM10 Monitors, 2016-2018

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	471 ^A 179 ^B	St Johns (TT-614-7003 POC1)	0 ^C	3	0
	Sacaton: Pinal			Sacaton (TT-614-7001 POC1)			
	Casa Blanca: Pinal			Casa Blanca (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 includes data flagged as exceptional events. CB site, 4/12/2018.
- B. Max concentration excludes data flagged as exceptional events. CB site, 11/28/2017.
- C. A maximum concentration greater than 180 µg/m³ 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/m³ 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 estimated population of the Phoenix-Mesa-Scottsdale MSA in 2017 was 4,737,270 (Census Bureau), which would require a minimum of 6-10 monitors for maximum concentrations >180 µg/m³ and 4-8 monitors for maximum concentrations between 120 and 180 µg/m³.

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 EPA 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 2018 air monitoring data for the Community to EPA Region 9 Administrator on January 28, 2019 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/outdoor-air-quality-data ; https://aqsweb/document/s/data_mart_welcome.html	National Air Monitoring Data, including GRIC data

4.4 Audits

The AQP performed audits of the monitoring equipment in 2018. 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.

The GRIC network also participates in the National Performance Audit Program that is conducted by the EPA. Table 4-8 provides the date when the thru-the-probe ozone audit was

performed and the site audited during the 2018 ozone monitoring season.

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

Site	AQS ID	Parameter	2018 Audit Dates
Sacaton	TT-614-7001 (Tribal Monitor)	Ozone (44201)	3/26 and 8/14
St Johns	TT-614-7003 (Tribal Monitor)	Ozone (44201)	3/26, 8/16, and 10/17

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

Site	AQS ID	Parameter	2018 Audit Dates
Sacaton (TEOM)	TT-614-7001 (Tribal Monitor)	PM10 (81102)	3/26 and 8/14
St. Johns (TEOM)	TT-614-7003 (Tribal Monitor)	PM10 (81102)	3/26 and 10/17
Casa Blanca (TEOM)	TT-614-7004 POC3 (Tribal Monitor)	PM10 (81102)	3/26 and 8/14

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

Site	AQS ID	Parameter	2018 Audit Dates
Sacaton	TT-614-7001 (Tribal Monitor)	Ozone (44201)	5/2/2018

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 April 5, 2019. 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).
- Public Notice posted on www.mygilariver.com and the GRIC Government Intranet.
- Presentation to the GRIC Natural Resources Standing Committee (DEQ departmental oversight committee).
- Presentations will be provided at all GRIC district monthly meetings during months of April through June 2019.

5.1 News Release

The following news release was advertised in the Gila River Indian Newspaper, VOL. XX, No. Y Edition (dated April --, 2019):

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 2018. This document will also be available for review at the GRIC DEQ office located at 5350 N. 48th St., Chandler, AZ 85226, and on the AQP website at <http://www.gricdeq.org> under Public Notices. Additionally, presentations will be provided at all GRIC district monthly meetings during months of April - June 2019.

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 District meetings. Additional information is available from GRIC DEQ Air Quality, 1576A S. Nelson Dr., Chandler, AZ 85226, the AQP website (<http://www.gricdeq.org> under Air), or by calling 520-796-3782.

Appendix A

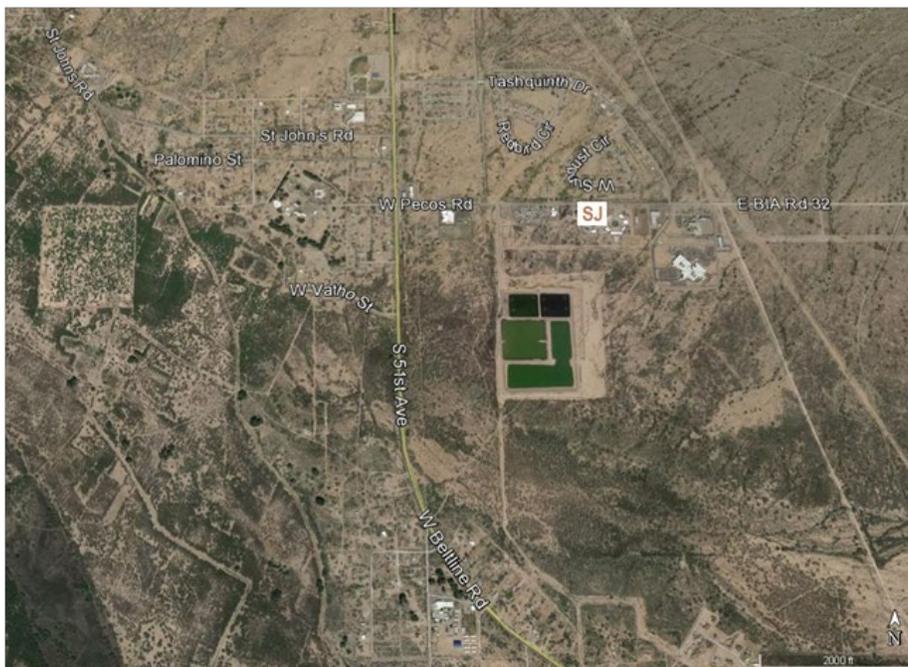
2018 AIR MONITORING DATA BY SITE

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

- St. Johns
- Casa Blanca
- Sacaton

DRAFT

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



Location: 4208 W. Pecos Rd
Laveen, AZ 85339

Spatial Scale: Urban (O₃) and
Neighborhood (PM₁₀)

Monitoring Type: Population
Exposure



Site Description: This site has been operational since 2003. This site has been suspended in July 2018 due to property renovation/construction. This site will be reinstalled by July 2019. The spatial scale for the St. Johns site is neighborhood for PM₁₀ 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 PM₁₀. This site operates one gaseous ozone analyzer and one continuous PM₁₀ 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	2016	2017	2018
O ₃	Max. 8-hr O ₃ Average (PPM)	0.068	0.072	0.071
	O ₃ # Daily Exceedances > 0.070 PPM	0	2	1
	O ₃ 3-year Average of 4 th Highest (PPM)	0.067	0.066	0.066
PM ₁₀	Max. 24-hr PM ₁₀ Average (µg/m ³)	218*	229*	318*
	Number of exceedances 24-hr PM ₁₀	2†	3†	9†
	Annual PM ₁₀ Average (µg/m ³)	33.8‡	39.1‡	37.4‡

* Indicates an exceedance of the NAAQS

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

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

(continued) **St. Johns (SJ), temporarily relocated to Komatke Health Care**



Location: 17487 S Health Care Dr., Laveen Village, AZ 85339

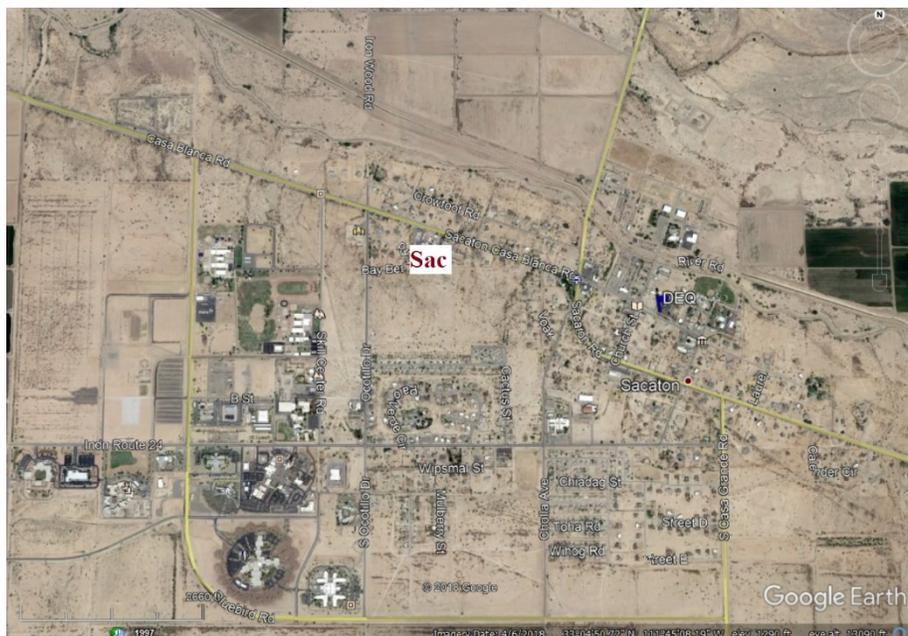
Spatial Scale: Urban (O₃) and Neighborhood (PM₁₀)

Monitoring Type: Population Exposure



Site Description: This temporary site has been operational since July 2018; the original site that was located on the school property has been suspended due to renovation of school grounds. The site description is the same as the original site, but is 0.35 mile southeast of the original site. It is located in a residential area and on a community health care property. This temporary location continues to monitor for ozone and PM₁₀. This site operates one gaseous ozone analyzer and one continuous PM₁₀ 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.

Sacaton (Sac), TT-614-7001 (Tribal Monitor)



Location: 291 W. Casa Blanca Rd., Sacaton, AZ 85147

Spatial Scale: Urban (O₃) and Neighborhood (PM₁₀)

Monitoring Type: Population Exposure



Site Description: This site has been operational since 2002. The spatial scale for the Sacaton site is neighborhood for PM₁₀ and Urban Scale for Ozone. It is located in a community residential area. This Tribal Monitoring location monitors for Ozone and PM₁₀. This site operates one gaseous ozone analyzer and one continuous PM₁₀ 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	2016	2017	2018
O ₃	Max. 8-hr O ₃ Average (PPM)	0.069	0.075	0.071
	O ₃ # Daily Exceedances > 0.070 PPM	0	1	1
	O ₃ 3-year Average of 4 th Highest (PPM)	0.065	0.065	0.066
PM ₁₀	Max. 24-hr PM ₁₀ Average (µg/m ³)	201*	229*	278*
	Number of exceedances 24-hr PM ₁₀	5†	4†	9†
	Annual PM ₁₀ Average (µg/m ³)	40.3‡	46.9‡	39.9‡

* Indicates an exceedance of the NAAQS

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

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

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



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

Spatial Scale: Neighborhood

Monitoring Type: Population Exposure, Highest concentration (PM₁₀)



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 PM₁₀. This site operates one continuous PM₁₀ 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	2016	2017	2018
PM ₁₀	Max. 24-hr PM ₁₀ Average (µg/m ³)	228*	275*	471*
	Number of exceedances 24-hr PM ₁₀	8†	9†	13†
	Annual PM ₁₀ Average (µg/m ³)	52.1‡	55.2‡	56.6‡

* Indicates an exceedance of the NAAQS

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

‡ 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 2018 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 2018 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: TT-614-7003 (Tribal Monitor Code)
 Address: 17487 S Health Care Dr., Laveen Village, AZ 85339
 Coordinates: N 33° 17' 15.13", W 112° 09' 17.12"; (elevation 1061 ft)

- General Information		
Pollutant (parameter code)	O ₃ (44201)	PM ₁₀ (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 PM _{2.5} NAAQS per Part 58.30?	N/A	N/A
-Appendix A Requirements		
# Precision Checks Performed Annually	28	31
# Accuracy Audits Performed Annually & Date of Last 2018 Check on Gaseous Analyzers & Last Two 2018 Checks for PM	3, 10/17/2018	2, 3/26 & 10/17/2018
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	January 28, 2019	January 28, 2019
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Bi-Weekly
-Appendix C Requirements		
Sampler Make & Model (method code)	TAPI T400 (087)	TEOM 1405 (079)
Date Established	03/24/2003	01/01/2013
Monitor Type	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
-Appendix D Requirements		
Site Type	Population Exposure	Populations Exposure
Basic Monitoring Objective	NAAQS Comparison	NAAQS Comparison
Monitoring Scale	Urban	Neighborhood
Sampling Season	April 1 – Oct. 31	Jan-Dec
Network Meets Minimum Number of Monitors	Yes	Yes
-Appendix E Requirements		
Distance between collocated samplers	N/A	N/A
Probe Inlet Height	4.9 meters	4.7 meters
Airflow Arc	360 degree	360 Degree
Probe Sample Line Material	Teflon	NA
Pollutant Sample Residence Time	4.0 seconds	NA
Distance from Supporting Structure	NA	NA
Distance from Obstructions	14 meters	14 meters
Distance to Furnace Flue	None	None
Spacing from Trees	None	None
Nearest Major Roadway	Pecos Road	Pecos Road
Distance and Direction to Road	333 meters, North	333 meters, North
Traffic Count (ADT)	374 (2003)	374 (2003)
Groundcover	Gravel, natural soil	Gravel, natural soil

Sacaton
 GRIC ID: Sac
 AQS ID: TT-614-7001 (Tribal Monitor Code)
 Address: 291 W. Casa Blanca Rd., Sacaton, AZ 85147
 Coordinates: N 33° 04' 53.82", W 111° 45' 08.02"; (elevation 1289 ft)

- General Information		
Pollutant (parameter code)	O ₃ (44201)	PM ₁₀ (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 PM _{2.5} NAAQS?	N/A	N/A
-Appendix A Requirements		
# Precision Checks Performed Annually	31	29
# Accuracy Audits Performed Annually& Date of Last 2018 Check on Gaseous Analyzers & Last Two 2018 Checks for PM	2, 8/14/2018	2, 3/26/2018 & 8/14/2018
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	January 28, 2019	January 28, 2019
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Bi-Weekly
-Appendix C Requirements		
Sampler Make & Model (method code)	TAPI T400 (087)	TEOM 1405 (079)
Date Established	07/01/2002	01/01/2013
Monitor Type	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
-Appendix D Requirements		
Site Type	Population Exposure	Population Exposure
Basic Monitoring Objective	NAAQS Comparison	NAAQS Comparison
Monitoring Scale	Urban	Neighborhood
Sampling Season	April 1 – Oct. 31	January – December
Network Meets Minimum Number of Monitors	Yes	Yes
-Appendix E Requirements		
Distance between collocated samplers	N/A	N/A
Probe Inlet Height	4.6 meters	4.7 meters
Airflow Arc	360 degree	360 Degree
Probe Sample Line Material	Teflon	NA
Pollutant Sample Residence Time	5.4 seconds	NA
Distance from Supporting Structure	NA	NA
Distance from Obstructions	20 meters, tree to NW	20 meters, tree to NW
Distance to Furnace Flue	None	None
Spacing from Trees	25 meters	25 meters
Nearest Major Roadway	Casa Blanca Rd	Casa Blanca Rd
Distance and Direction to Road	160 meters, North	160 meters, North
Traffic Count (ADT)	253 (daily average 2008)	253 (daily average 2008)
Groundcover	Gravel and natural soil	Gravel and natural soil

Casa Blanca

GRIC ID: CB

AQS ID: 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 1209 ft)

- General Information	
Pollutant (parameter code)	PM ₁₀ (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 PM _{2.5} NAAQS per Part	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	27
# Accuracy Audits Performed Annually& Date of Last 2018 Check on Gaseous Analyzers & Last Two 2018 Checks for	2, 3/26 & 8/14/2018
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	January 28, 2019
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model (method code)	TEOM 1405 (079)
Date Established	July 1, 2002
Monitor Type	Tribal
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Site Type	Population Exposure
Basic Monitoring Objective	NAAQS Comparison
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	20 meters, canopy/ shade to southeast
Distance to Furnace Flue	NA
Spacing from Trees	11 meters, tree to East
Nearest Major Roadway	Casa Blanca Road
Distance and Direction to Road	20 meters, to north
Traffic Count (ADT)	2400 (daily average 2008)
Groundcover	gravel

Appendix C

EPA Letter of Approval for GRIC's 2017 Air Monitoring Network Review

DRAFT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OCT 29 2018

Mr. Ryan Eberle
Air Quality Program Manager
Department of Environmental Quality/Air Quality Program
Gila River Indian Community
Post Office Box 97
Sacaton, Arizona 85147

Dear Mr. Eberle:

Thank you for your submission of the Gila River Indian Community (GRIC) 2017 *Ambient Air Monitoring Network Review* on July 2, 2018. We have reviewed the submitted document based on the requirements set forth in 40 CFR Part 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.

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 provided 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. Enclosure A (*Annual Monitoring Network Plan Checklist*) is the checklist EPA used to review your plan for 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. Items highlighted in yellow are those EPA Region 9 is not acting on, as we either lack the authority to approve the specific item, or we have determined that a requirement is either not met or information in the plan is insufficient to judge whether the requirement has been met. Please note that we are not acting on the following system modification planned for 2018: St. Johns relocation. Please work with EPA to address the St. Johns relocation. For EPA to approve this relocation, GRIC must submit a formal request (along with additional information) that includes information as to whether the relocation meets the criteria in 40 CFR 58.14. Items highlighted in green in enclosure A require attention in order to improve next year's plan.

All comments conveyed via this letter and enclosure should be addressed prior to submittal of next year's annual monitoring network plan to EPA.

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If you have any questions regarding this letter or the enclosed checklist, please feel free to contact me at (415) 947-4134 or Randall Chang at (415) 947-4180.

Sincerely,

Gwen Yoshimura, Manager
Air Quality Analysis Office

Enclosure:

A. Annual Monitoring Network Plan Checklist for Tribes Performing Regulatory Monitoring

cc (via email): Leroy Williams, GRIC

Appendix D

St Johns Site Relocation Details and Information

1. St Johns Site Relocation Correspondence with EPA Region 9 in 2018.
2. St Johns Site Detail Information Attachment

DRAFT

From: [YOSHIMURA, GWEN](#)
To: [Ryan Eberle](#); [Kurpius, Meredith](#); [Dale Ohnmeiss](#); [Willard Antone III](#); [Graham, AshleyR](#); [LAWRENCE, LAURA](#); [CHANG, RANDALL](#)
Cc: [Tax, Wienke](#); [Leroy Williams Jr](#); [Williams, Jennifer](#)
Subject: RE: Relocation of GRIC St. Johns Monitoring Station
Date: Tuesday, June 5, 2018 8:50:51 AM

Hi Ryan,

Thank you for the notification. We understand that monitor relocations are sometimes unavoidable, and appreciate your efforts to find a suitable temporary location. As you narrow down on options, we'd be happy to have a quick phone call to discuss how things look and talk through any concerns.

Thanks, and we'll hope to hear from you soon!

-Gwen

Gwen M. Yoshimura
Manager, Air Quality Analysis Office
Environmental Protection Agency, Region 9
Phone: 415.947.4134
Email: yoshimura.gwen@epa.gov

mailing address:
U.S. Environmental Protection Agency
Air Quality Analysis Office (AIR-7)
75 Hawthorne Street
San Francisco, CA 94105

From: Ryan Eberle [mailto:Ryan.Eberle@gric.nsn.us]
Sent: Monday, June 04, 2018 12:43 PM
To: Kurpius, Meredith <Kurpius.Meredith@epa.gov>; Dale.Ohnmeiss.DEQ@gric.nsn.us; willard.antoneiii@gric.nsn.us; Graham, AshleyR <Graham.AshleyR@epa.gov>; LAWRENCE, LAURA <Lawrence.Laura@epa.gov>; CHANG, RANDALL <Chang.Randall@epa.gov>
Cc: Tax, Wienke <Tax.Wienke@epa.gov>; Leroy.WilliamsJR@gric.nsn.us; YOSHIMURA, GWEN <Yoshimura.Gwen@epa.gov>
Subject: Relocation of GRIC St. Johns Monitoring Station

Meredith/Randy/Gwen-

One thing I forgot to mention on the call today is that about two weeks ago we were informed that our St. Johns monitor will need to be relocated b/c the school property where it is located is undergoing a major renovation. This obviously doesn't impact the past data and I don't think it will have a major impact on the decision we move forward with, but I just wanted to keep you and Randy informed.

Here are the details of the project as we know of at this point:

1. The school property (where the SJ monitor is located) currently serves as administration offices for the Gila Crossing School
2. The property is being redeveloped with the new Gila Crossing School
3. This is a fast-track project – demolition of the existing structures is set to begin June/July of 2018 and completion of the new school is scheduled for July 2019.
4. Since our monitor is tied into the power at the school admin offices, we are scheduled to lose power to the monitor sometime between 7/1 and 7/15/18
5. We are in the process of identifying a location to place our portable monitoring trailer to collect some concurrent data with the existing monitor before we lose power (the portable monitoring trailer is the same one we used to collect concurrent monitoring data for the Sacaton monitor move we just completed in January 2018)
6. The temporary location would become our sole source of monitoring data for the SJ location from July 2018 until we can find a new permanent location (4-12 months) – the permanent new location for the monitor may be at a different location on redeveloped school property
7. We are just beginning the site evaluation phase, but it looks like all potential sites are located within 0.75 mile of the existing location (mainly due east or west and still within Maricopa County)

Once we have determined a more concrete plan, we'll submit a formal request for approval to move the monitor; however, we probably won't be able to submit the request before we setup a temporary location and lose power at the current location. Please let me know if you have any questions.

Thanks.

Ryan Eberle, P.E.
Air Quality Program Manager
Gila River Indian Community
Department of Environmental Quality

Main Office: P.O. Box 97 / 45 S. Church St.
Sacaton, AZ 85147

AQ Office: 1576A South Nelson Dr.
Chandler, AZ 85226

c | 480.622.3326
d | 520.796.3781
f | 520.796.3973

Website: <http://www.gricdeq.org/>

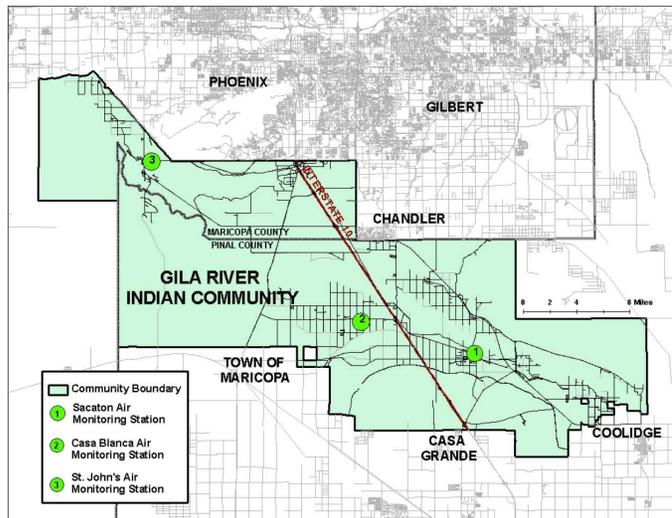
ATTACHMENT 1 – GRIC ST JOHNS TRIBAL AIR MONITORING STATION RELOCATION SUMMARY

This document summarizes the Gila River Indian Community's Air Monitoring network and describes the details of the relocation of the St Johns monitoring station.

GRIC Monitoring Network

The GRIC Air Monitoring Network has been established within the Community since 2002. GRIC operates three air monitoring sites (Sacaton, Casa Blanca, and St. John's) where PM10 (particulate matter smaller than 10 microns) and ozone are monitored. GRIC's network was designed and sited at suitable locations within specific geographical areas where utilities and security were key rationale. Figure 1 below displays a map of the GRIC Air Monitoring Network.

Figure 1. Map of the Gila River Indian Community



St Johns Site Background and Reason for Relocation

The St Johns Site (AQS TT-614-7003) has been monitoring for ozone and meteorological parameters since March 2003. The continuous PM10 pollutant monitoring at St Johns Site started January 1, 2013. Air pollution sources for these two criteria pollutants (PM10 and ozone) are from area sources that are beyond the St Johns Site community. In addition to the approximately 2,000, St Johns Site is within the GRIC District 6 village known as Komatke. It is located between the Sierra Estrella mountain range and South Mountain to the north. The St Johns Site was located within the Gila Crossing Community School complex. Including this site area will be redeveloped to a new school complex of the Community. The construction is planned from July 2018 to

completion by July 2019. Therefore, the GRIC DEQ started site assessments within neighboring areas in June 2018 to relocate the St Johns Site.

St Johns Site PM10 Data

The annual averages for 2016 to 2018 are 33.8, 38.7, and 37.4 µg/m³, respectively. The St Johns Site violated the PM10 NAAQS on 2 days in 2016, 3 days in 2017, and 9 days in 2018. GRIC has requested claims of exceptional events* on all 14 violations described above. Table 1 below provides the top four maximum PM10 concentrations collected from 2016 to 2018. Figure 1 through Figure 3 below displays PM10 concentrations between 2016 and 2018, respectively. The graphical displays of the PM10 concentrations are charted against the PM10 Air Quality Index (AQI) values. Based on these charts and the annual average concentration values, the air quality of the PM10 concentrations at the St Johns Site is of "Good Air Quality". The daily violations described above are primarily due to high winds during monsoon seasons and aggressive weather conditions. The primary wind pattern at the St Johns site area is from the east-southeast in the morning hours and from the west in the afternoon hours.

Table 1. Maximum 24-hour Average PM10 Concentrations in 2016 to 2018 for St Johns Site.

Year	24-Hour Average (µg/m³)				Number of Exceedances	Annual Avg. (µg/m³)	Number of Samples	Notes
	Max	2 nd High	3 rd High	4 th High				
2016	218* 4/15/2016	211* 4/25/2016	136 8/13/2016	115 8/31/2016	2*	33.8	363/366	Jan-Dec
2017	229* 7/16/2017	158* 3/30/2017	156* 7/15/2017	146 #####	3*	38.7	345/365	Jan-Dec
2018	318* 8/2/2018	249* 7/8/2018	219* 8/24/2018	214* 8/7/2018	9*	37.4	357/365	Jan-Dec

Table Notes:
 SI – St Johns Site, AQS ID: TT-614-7003, POC1
 * Reported as natural event episode, AQS RI flagged.

St Johns Ozone Data

The St Johns Site ozone data Design Value Report for 2018 is displayed in Table 2, below. The St Johns Site is within a rural geographical area. There are no major stationary sources that impact the St Johns ozone monitor.

Table 2. USEPA AQS Preliminary Design Value Report.

Pollutant: Ozone (44201) Design Value Year: 2018
 Standard Units: Parts per million (007)
 REPORT EXCLUDES MEASUREMENTS WITH REGIONALLY CONCURRED EVENT FLAGS.
 NAAQS Standard: Ozone 8-Hour 2008
 Statistic: Annual 4th Maximum Level: .07 Tribe: Gila River Indian Community

2018			2017			2016			3-Year		
Valid Days	Percent Complete	4th Max	Valid Days	Percent Complete	4th Max	Valid Days	Percent Complete	4th Max	% Complete	Design Value	D.V. Validity
336	92	0.066	347	95	0.068	337	92	0.065	93	0.066	Y

Chart Legend: Chart parameters for Figures 1 through 3



Figure 1. St Johns Site PM10 Data Monitored in 2016.

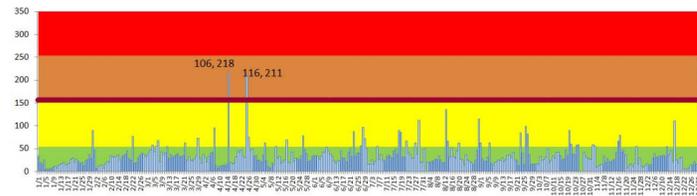


Figure 2. St Johns Site PM10 Data Monitored in 2017.

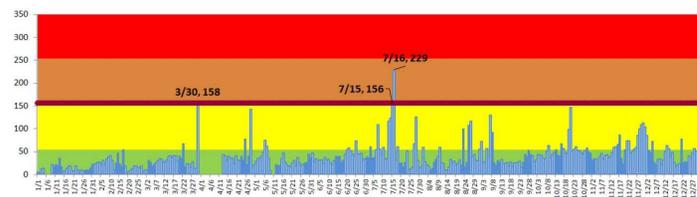
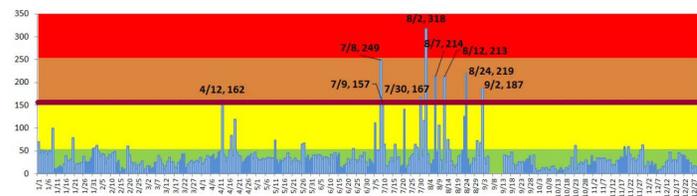


Figure 3. St Johns Site PM10 Data Monitored in 2018.



Description and Impacts of the St Johns Site Relocation

The GRIC Air Monitoring Network's St Johns site that is located on the Gila Crossing School campus at 4208 W. Pecos Road, Laveen, AZ was relocated to the Komatke Health Care located at 17487 South Health Care Drive, Laveen Village, AZ. Figure 3 below displays an image of where the SJ was before (SJ 2018) and the current location (SJ 2019).

Figure 3. Aerial visual map of the GRIC St Johns Site (AQ5 ID TT-614-7003).



Figure 4. St Johns Air Monitoring Station, July 7, 2018 to present.



Figure 5. Images of St Johns Air Monitoring Relocation Site, next to Komatke Health Center.

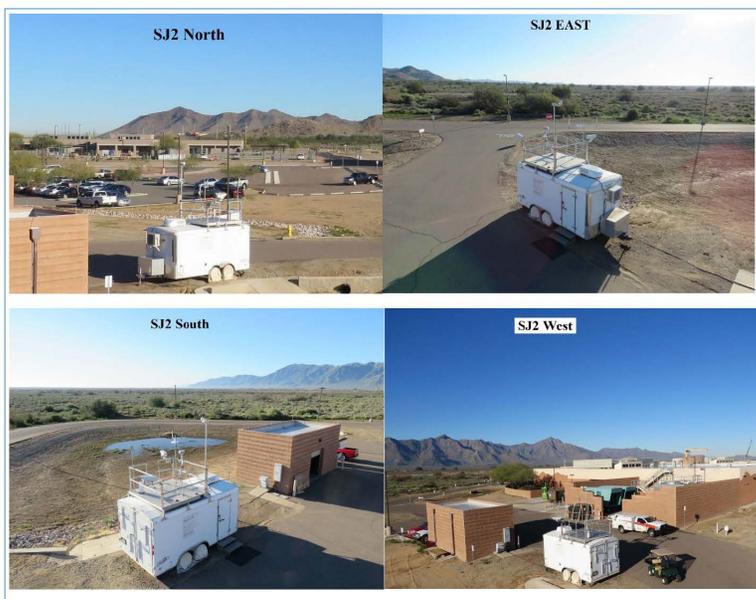


Table 3. St Johns Air Monitoring Site Detailed Information

GRIC ID: SJ
 AQS ID: TT-614-7003 (Tribal Monitor Code)
 Address: 17487 S Health Care Dr., Laveen Village, AZ 85339
 Coordinates: N 33° 17' 15.13", W 112° 09' 17.12"; (elevation 1061 ft)

- General Information		
Pollutant (parameter code)	O ₃ (44201)	PM ₁₀ (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	28	31
# Accuracy Audits Performed Annually & Date of Last 2018 Check on Gaseous Analyzers & Last Two 2018 Checks for PM	3, 10/17/2018	2, 3/26 & 10/17/2018
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	January 28, 2019	January 28, 2019
Frequency of One-Point QC Check	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	Bi-Weekly
-Appendix C Requirements		
Sampler Make & Model (method code)	TAPI T400 (087)	TEOM 1405 (079)
Date Established	03/24/2003	01/01/2013
Monitor Type	Tribal	Tribal
Method (FRM, FEM, ARM)	FEM	FEM
-Appendix D Requirements		
Site Type	Population Exposure	Populations Exposure
Basic Monitoring Objective	NAAQS Comparison	NAAQS Comparison
Monitoring Scale	Urban	Neighborhood
Sampling Season	April 1 – Oct. 31	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	4.9 meters	4.7 meters
Airflow Arc	360 degree	360 Degree
Probe Sample Line Material	Teflon	NA
Pollutant Sample Residence Time	4.0 seconds	NA
Distance from Supporting Structure	NA	NA
Distance from Obstructions	14 meters	14 meters
Distance to Furnace Flue	None	None
Spacing from Trees	None	None
Nearest Major Roadway	Pecos Road	Pecos Road
Distance and Direction to Road	333 meters, North	333 meters, North
Traffic Count (ADT)	374 (2003)	374 (2003)
Groundcover	Gravel, natural soil	Gravel, natural soil

Appendix E

EPA Letter of Approval for 2019 Seasonal Ozone Monitoring Waiver

DRAFT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JAN 29 2019

Mr. Ryan Eberle
Air Quality Program Manager,
Department of Environmental Quality/Air Quality Program
Gila River Indian Community
Post Office Box 97
Sacaton, Arizona 85147

Dear Mr. Eberle:

This serves as an approval for your request dated September 4, 2018 for a waiver to suspend operation of two Gila River Indian Community (GRIC) state or local air monitoring stations (SLAMS) ozone sites (St Johns - Air Quality System (AQS) ID: 04-013-7003 and Sacaton - AQS ID: 04-021-7001) from January 1, 2019 through March 31, 2019, and from November 1, 2019 through December 31, 2019. Per 40 CFR Part 58, Appendix D, §4.1(i), monitoring agencies must have ozone season deviations approved by the U.S. Environmental Protection Agency (EPA), documented in the annual network plan (ANP), and updated in EPA's AQS database.

The continuing record of data from GRIC sites shows a low probability that these sites would measure an exceedance of the 2015 8-hour Ozone National Ambient Air Quality Standard (NAAQS) during these winter months. The past five years of data show no exceedances of the 2015 8-hour Ozone NAAQS at the GRIC sites during the months of January through March and November through December. Comparison of data from the GRIC sites was made with data from nearby sites in Maricopa and Pinal County that operate year-round, confirming low probability of exceedances to be expected from the GRIC sites during these winter months. Please attach this approval letter and update the relevant monitor and site information in your next ANP.

Please note that an updated request including the previous year's data will be required for future ozone season waiver approvals. If you have any questions, please contact me at (415) 947-4134 or Randall Chang of my staff at (415) 947-4180.

Sincerely,

A handwritten signature in black ink that reads "Gwen m. J." with a stylized flourish at the end.

Gwen Yoshimura
Manager, Air Quality Analysis Office

cc (via email):

Dale Ohnmeiss, GRIC DEQ Director
Leroy Williams, GRIC DEQ

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Appendix F

Public Notice and Comment Information

1. Figure F-1. 2018 public notice and news release information.
2. Figure F-2. Public Meeting Attendance.
3. Figure F-3. Public Meeting Handout (*3 page FAQ Sheet*).

DRAFT

Figure F-1. 2019 public notice and news release information.

Page XX, Gila River Indian News,
VOL. YY, NO. Z, April --, 2019,

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 2018. This document will also be available for review at the GRIC DEQ office located at 5350 N. 48th St., Chandler, AZ 85226, and on the AQP website at <http://www.gricdeq.org> under Public Notices. Additionally, presentations will be provided at all GRIC district monthly meetings during months of April - June 2019.

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 District meetings. Additional information is available from GRIC DEQ Air Quality, 1576A S. Nelson Dr., Chandler, AZ 85226, the AQP website (<http://www.gricdeq.org> under Air), or by calling 520-796-3782.

Figure F-2. Public Meeting Attendance:

DRAFT

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

DRAFT



2018 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 (PM₁₀) and ozone (O₃).

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 (O₃) 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 PM₁₀ 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 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).

www.gricdeq.org



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 within Komatke Health Center property. This site location monitors for Ozone and PM₁₀.
2. Casa Blanca (CB) (District 5) - located in a residential area within Casa Blanca elementary school property. This site location monitors for PM₁₀.
3. Sacaton (Sac) (District 3) - located within the office of Land Use Planning and Zoning. This site location monitors for Ozone and PM₁₀.

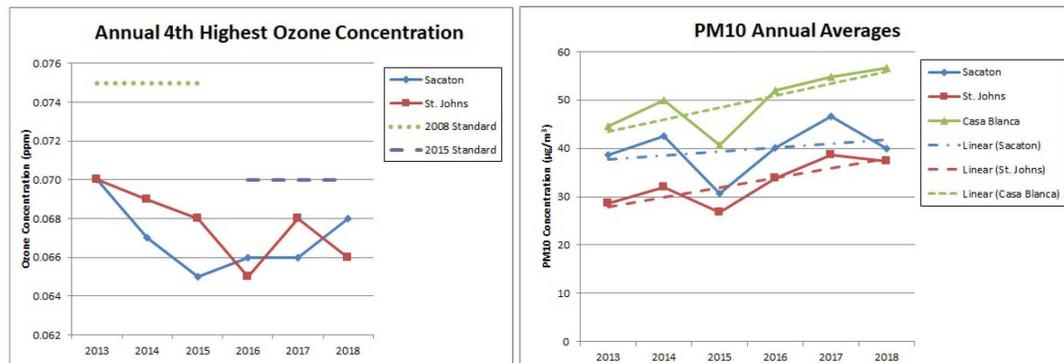
Meteorological data is collected at all three air monitoring sites which include measurements of ambient temperature, barometric pressure, wind speed/direction, relative humidity, and precipitation.

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 PM₁₀ 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 2018 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.



Looking at the PM₁₀ graph above, one can see the PM₁₀ annual average concentrations are below the NAAQS standards of 150 µg/m³ with annual averages measuring around 55 µg/m³ 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 concurs that 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 five years (13 in 2013, 12 in 2014, 5 in 2015, 15 in 2016, 16 in 2017, and 31 in 2018) from a combination of the three monitors with some that occurred on the same day at different monitors. However, GRIC has flagged 88 of the 92 exceedances 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 stable or 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, PM₁₀ 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., PM₁₀) more susceptible to entrainment at lower wind speeds. Based on the PM₁₀ graph above, the PM₁₀ concentrations appear to be on an upward trend; however, this data also includes the exceptional events.

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 has been busy with relocating monitoring sites at Sacaton and St Johns sites due to property development where they are located. In 2020, pending the availability of resources, the AQP may be able to conduct short-term informational monitoring in other Districts in the Community.