



Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

12/22/20

Submitted online via EPA's Central Data Exchange, State Plan Electronic Collection System (SPeCS)

Mr. John Busterud, Regional Administrator
U.S. Environmental Protection Agency, Region 9
Mail Code ORA-1
75 Hawthorne Street
San Francisco, CA 94105

Re: Submittal of the State Implementation Plan Revision – *Marginal Ozone Plan for the Yuma Nonattainment Area*.

Dear Mr. Busterud:

The Arizona Department of Environmental Quality (ADEQ) hereby adopts and submits to the U.S. Environmental Protection Agency (EPA) the enclosed State Implementation Plan (SIP) revision, *Marginal Ozone Plan for the Yuma Nonattainment Area, December 17, 2020, Final*. ADEQ makes this submission pursuant to Arizona Revised Statutes (A.R.S.) §§ 49-104, 49-106, 49-112, 49-402, 49-404, 49-406, 49-425, 49-471.04, 49-479 and Code of Federal Regulations (CFR), Title 40, §§ 51.102 through 51.104.

On June 4, 2018, EPA designated an area in southwest Yuma County as a marginal nonattainment area for the 2015 8-hour Ozone National Ambient Air Quality Standards (NAAQS), in accordance with 107(d)(1)(B) of the Clean Air Act (CAA). The designation became effective August 3, 2018. As such, ADEQ must submit a SIP revision demonstrating compliance with applicable CAA requirement for the nonattainment area within two years of the effective date of the designation.

The demonstrations contained in this SIP revision are intended to meet marginal plan provisions for the Yuma area including a baseline emissions inventory as required under CAA Section 182(a)(1) and amendments to Arizona Administrative Code (A.C.C.) R18-2-327, Emissions Inventory Questionnaire and Emissions Statement, required under CAA Section 182(a)(3)(B). Additional requirements for implementation of a nonattainment new source review (NNSR) permit program under CAA Section 172(c)(5) are due August 3, 2021. ADEQ will address NNSR requirements applicable to the 2015 Ozone NAAQS in a separate submittal.

ADEQ requests that EPA approve the enclosed revision to the Arizona SIP, including the amended rule A.C.C. R18-2-327 submitted for approval in Appendix C.

Main Office

1110 W. Washington Street • Phoenix, AZ 85007
(602) 771-2300

Southern Regional Office

400 W. Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

www.azdeq.gov

printed on recycled paper

On July 29, 2020, ADEQ submitted *SIP Revision: Marginal Ozone Plan for the Yuma Nonattainment Area, July 28, 2020*. The plan, however, did not include final amendments to the emissions statement rule A.C.C. R18-2-327 and did not fully meet public notice requirements under 40 CFR 51.102. Therefore, at this time ADEQ withdraws the July 28, 2020 SIP revision from any further consideration by EPA.

If you have any questions regarding this SIP revision, please contact Joseph Martini, Air Quality Improvement Planning Section Manager, at (602) 771-1089.

Sincerely,

A handwritten signature in black ink, appearing to read 'D Czecholinski', with a stylized flourish at the end.

Daniel Czecholinski
Director, Air Quality Division

Enclosures (1)

Cc: Laura Lawrence, EPA Region 9
Nancy Levin, EPA Region 9
Ian McGaughey, Yuma County



SIP Revision: Marginal Ozone Plan for the Yuma Nonattainment Area

*Air Quality Division
December 17, 2020 Final*

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COMPLETENESS CRITERIA

(40 CFR PART 51, APPENDIX V, § 2.0)

Appendix V § 2.1 - Administrative Materials

(a) A formal signed, stamped, and dated letter of submittal from the Governor or his designee, requesting EPA approval of the plan or revision thereof (hereafter “the plan”). If electing to submit a paper submission with a copy in electronic version, the submittal letter must verify that the electronic copy provided is an exact duplicate of the paper submission.

See the cover letter for this State Implementation Plan (SIP) submission and enclosed delegation of authority (Appendix B, Exhibit B-I) from Misael Cabrera, Director of the Arizona Department of Environmental Quality (ADEQ), to Daniel Czecholinski, Director of the ADEQ Air Quality Division, authorizing Mr. Czecholinski to perform any act the ADEQ Director is authorized to perform under the state air quality statutes, including the submittal of SIPs to EPA.

This SIP submittal was conducted electronically using the online eSIP system in EPA’s Central Data Exchange.

(b) Evidence that the State has adopted the plan in the State code or body of regulations; or issued the permit, order, consent agreement (hereafter “document”) in final form. That evidence shall include the date of adoption or final issuance as well as the effective date of the plan, if different from the adoption/issuance date.

See the cover letter to this document wherein the state adopts and submits this SIP revision to EPA. This is the method of Arizona state adoption. ADEQ is also submitting for approval amendments to Arizona Administrative Code (A.A.C.) R18-2-327. A Notice of Final Rulemaking was published on December 4, 2020 (Appendix C, Exhibit C-II). The rule becomes effective January 19, 2021.

(c) Evidence that the State has the necessary legal authority under State law to adopt and implement the plan.

The Arizona Department of Environmental Quality has primary responsibility for air pollution control and abatement, and as such, is required to adopt and "maintain a state implementation plan that provides for implementation, maintenance and enforcement of national ambient air quality standards and protection of visibility as required by the clean air act." A.R.S. § 49-404(A). ADEQ also maintains authority to issue and administer rules, adopt county rules, and to submit such rules for approval into the SIP. Copies of Arizona Revised Statutes (A.R.S.), sections 49- 104, 49-106, 49-112, 49-402, 49-404, 49-406, 49-425, 49-471.04, and 49-479, are included in Appendix B, Exhibit B-II.

(d) A copy of the actual regulation, or document submitted for approval and incorporation by reference into the plan, including indication of the changes made (such as redline/strikethrough) to the existing approved plan, where applicable. The submission shall include a copy of the official State regulation/document, signed, stamped, and dated by the appropriate State official indicating that it is fully enforceable by the State. The effective date of any regulation/document contained in the submission shall, whenever possible, be indicated in the regulation/document itself; otherwise the State should include a letter signed, stamped, and dated by the appropriate State official indicating the effective date. If the regulation/document provided by the State for approval and incorporation by reference into the plan is a copy of an existing publication, the State submission should, whenever possible, include a copy of the publication cover page and table of contents.

See this SIP revision, the document submitted for approval. As noted in Section (b) above, ADEQ is also submitting a copy of the regulation, A.A.C. R18-2-327 Emissions Inventory Questionnaire and Emissions Statement, for approval into the Arizona SIP. Appendix C includes indication of changes made to the existing rule.

(e) Evidence that the State followed all of the procedural requirements of the State's laws and constitution in conducting and completing the adoption/issuance of the plan.

Evidence that ADEQ followed the procedural requirements of Arizona state laws and constitution in adopting this plan is included in Appendix B.

(f) Evidence that public notice was given of the proposed change consistent with procedures approved by EPA, including the date of publication of such notice.

Evidence that ADEQ gave notice of this SIP revision in accordance with A.R.S. § 49-444 and 40 CFR 51.102 is included in Appendix B.

(g) Certification that public hearing(s) were held in accordance with the information provided in the public notice and the State's laws and constitution, if applicable and consistent with the public hearing requirements in 40 CFR 51.102.

Certification and other documents related to the public hearing are included in Appendix B.

(h) Compilation of public comments and the State's response thereto.

The public comment responsiveness summary for this SIP revision is contained in Appendix B, Exhibit B-VII.

Appendix A § 2.1 - Technical Support

(a) Identification of all regulated pollutants affected by the plan.

This SIP applies to the 2015 Ozone National Ambient Air Quality Standards (NAAQS). All included provisions regard the regulation of such emissions.

(b) Identification of the locations of affected sources including the EPA attainment/nonattainment designation of the locations and the status of the attainment plan for the affected areas(s).

This SIP revision is applicable to sources found within the Yuma Ozone Nonattainment Area. See Chapter C and Appendix A for detailed source descriptions.

(c) Quantification of the changes in plan allowable emissions from the affected sources; estimates of changes in current actual emissions from affected sources or, where appropriate, quantification of changes in actual emissions from affected sources through calculations of the differences between certain baseline levels and allowable emissions anticipated as a result of the revision.

This SIP revision does not contain changes to allowable emissions. See Chapter C and Appendix A for detailed emission inventory descriptions in the Yuma area.

(d) The State's demonstration that the national ambient air quality standards, prevention of significant deterioration increments, reasonable further progress demonstration, and visibility, as applicable, are protected if the plan is approved and implemented. For all requests to redesignate an area to attainment for a national primary ambient air quality standard, under section 107 of the Act, a revision must be submitted to provide for the maintenance of the national primary ambient air quality standards for at least 10 years as required by section 175A of the Act.

This SIP revision contains demonstrations that all Clean Air Act requirements for the Yuma Ozone Marginal Nonattainment Area have been met.

(e) Modeling information required to support the proposed revision, including input data, output data, models used, justification of model selections, ambient monitoring data used, meteorological data used, justification for use of offsite data (where used), modes of models used, assumptions, and other information relevant to the determination of adequacy of the modeling analysis.

Information regarding emissions modeling for the Yuma Nonattainment Area is included in the Technical Support Document in Appendix A.

(f) Evidence, where necessary, that emission limitations are based on continuous emission reduction technology.

This SIP revision does not contain changes to allowable emissions.

(g) Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements, where necessary, to ensure emission levels.

This SIP revision does not contain changes to allowable emissions. Emissions reporting requirements are described in Chapter D and Appendix C.

(h) Compliance/enforcement strategies, including how compliance will be determined in practice.

Emissions statement requirements are fulfilled by amendments to the rule language in A.A.C. R18-2-327. The frequency of emissions inventory questionnaire collection for certain permitted sources are also

revised in the rule. Compliance and enforcement strategies are described in the Notice of Final Rulemaking in Appendix C.

(i) Special economic and technological justifications required by any applicable EPA policies, or an explanation of why such justifications are not necessary.

This SIP revision contains no known deviations from EPA policy.

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Exhibit C-I: Notice of Proposed Rulemaking

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A. INTRODUCTION

A.1 Statement of Introduction and Purpose

Pursuant to Section 107(d)(1)(B) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) designated an area in southwest Yuma County as a “marginal” nonattainment area (NAA) for the 2015 8-hour Ozone National Ambient Air Quality Standards (NAAQS) in 2018.¹ EPA based its designation on recorded violations of the standard at an ambient monitoring site within the County.²

Under the authority granted by the Governor and the State of Arizona, the Arizona Department of Environmental Quality (ADEQ) is responsible for the preparation and submittal of this State Implementation Plan (SIP) revision.

This document demonstrates that the applicable CAA requirements for marginal ozone areas, due two years from the effective date of nonattainment designation, have been satisfied for the Yuma Nonattainment Area. This plan includes an emissions inventory as required by CAA section 182(a)(1) and new emissions statements regulations under CAA section 182(a)(3)(B). ADEQ will address nonattainment new source review (NNSR) permitting program requirements applicable to the 2015 Ozone NAAQS in a separate submittal. With this submittal, ADEQ requests that EPA approve the enclosed nonattainment plan.

A.2 Rules to Be Added to and Removed from the SIP

Table 1 documents the rule submitted for approval as a component of Arizona’s State Implementation Plan (SIP). A Notice of Proposed Rulemaking (NPRM) was published on April 10, 2020, opening a public comment period for the new rule. The comment period closed and a public hearing was held on May 11, 2020. One comment was received in support of the proposed rule. A Notice of Final Rulemaking (NFRM) was published on December 4, 2020, with an effective date of January 19, 2021. The final rule is submitted for EPA approval in Appendix C.

Table 1 Rules to Be Added to and Removed from the SIP

Rule or Statute Added	SIP Rule(s) Replaced	Amended by NFRM
Arizona Administrative Code (A.A.C.) R18-2-327. Emissions Inventory Questionnaire and Emissions Statement	Arizona Administrative Code (A.A.C.) R18-2-327. Annual Emission Inventory Questionnaire ³	26 Arizona Administrative Register (A.A.R.) 3092, December 4, 2020 ⁴

¹ 83 FR 25776, June 4, 2018, effective August 3, 2018.

² *Id.*

³ EPA approved A.A.C. R18-2-327 (State effective date December 7, 1995) into the SIP on November 5, 2012 (77 FR 66405).

⁴ See Appendix C for the April 10, 2020 NPRM and December 4, 2020 NFRM. Prior to the 2020 rulemaking, A.A.C. R18-2-327 was amended by final rulemaking at 18 A.A.R. 1542, effective August 7, 2012, to update references to AP-42 emission factors and again at 23 A.A.R. 333, effective March 21, 2017, to update cross reference to another rule.

A.3 National Ambient Air Quality Standards

Title I of the CAA requires EPA to set NAAQS for those pollutants that are considered harmful to both public health and the environment. EPA sets standards for six air pollutants: ground-level ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. There are two types of NAAQS: primary and secondary. Primary standards are set to protect human health and secondary standards are set to protect public welfare, such as decreased visibility and damage to animals, crops, vegetation, and buildings.⁵

The standard for each pollutant is set at a maximum concentration in either parts per million (ppm) by volume, parts per billion (ppb) by volume, or micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$). Each standard also has a distinct averaging time in order to provide the necessary level of protection. These standards are periodically reevaluated and are retained or revised based on review of scientific literature and analyses.⁶

A.4 Ozone Formation

Ozone is not a pollutant released directly by any source but is rather a secondary pollutant formed from a complicated process involving precursor pollutants and sunlight. Nitrogen oxides (NO_x) and volatile organic compounds (VOCs) are the main precursor pollutants to the formation of ozone, although other molecules are often involved in the formation process. Ozone forms naturally in the earth's troposphere⁷ as shown in simplified form in **Figure 1 Ozone Formation**. Nitrogen dioxide (NO₂) and oxygen (O₂) react (i.e. photolyze) under the sun's heat and ultra violet rays to form nitrogen monoxide (NO) and ozone (O₃), and vice versa.⁸ In a separate reaction, VOCs can oxidize and the resulting free radicals can convert nitrogen monoxide to nitrogen dioxide. This natural VOC reaction disrupts the equal balance of the photocatalytic reaction and allows for a slight accumulation of ozone.⁹

⁵ See <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (last visited August 4, 2017).

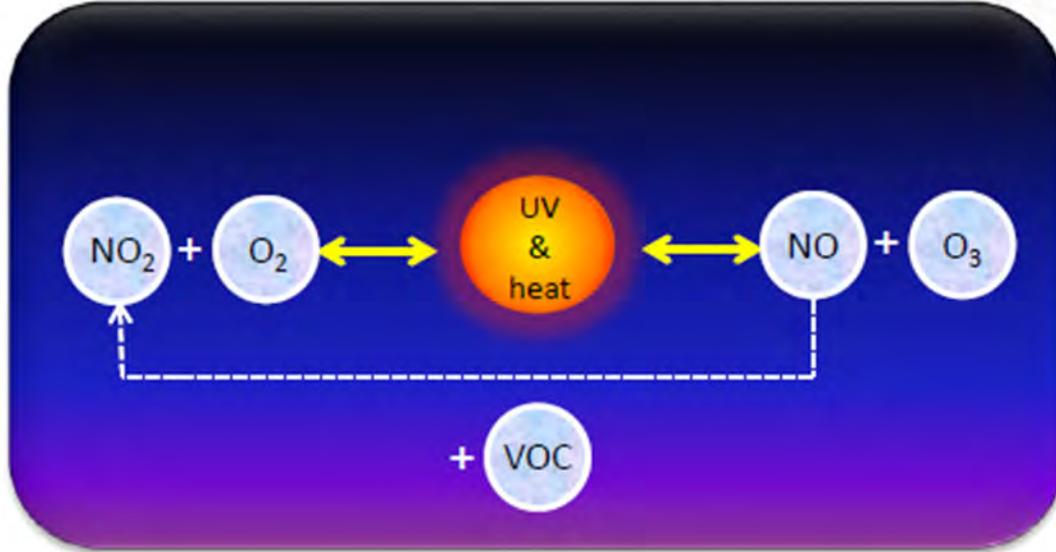
⁶ See CAA § 109 (42 U.S.C. 7409 [2015]).

⁷ The troposphere is the Earth's lowest atmospheric layer extending "from the earth's surface to about 8 km above polar regions and to about 16 km above tropical regions." EPA, *Air Quality Criteria for Ozone and Related Photochemical Oxidant: Volume II of III*, p. AX2-2 (2006) available at <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=149923&CFID=58102340&cftoken=94355181>.

⁸ See generally *id.* at AX2-3 – AX-2-5; NASA EARTH OBSERVATORY, *Chemistry in the Sunlight*, http://earthobservatory.nasa.gov/Features/ChemistrySunlight/chemistry_sunlight3.php (last visited May 27, 2016).

⁹ See generally *id.*

Figure 1 Ozone Formation



NO_x and VOCs are naturally emitted compounds (e.g. NO_x is emitted from soils, lightning, wildfires, and stratospheric intrusions¹⁰ and VOCs are emitted from live plants, such as pine trees, as byproducts of photosynthesis¹¹). However, human activity also produces NO_x and VOCs (anthropogenic). Anthropogenic emitted NO_x sources include fossil fuel combustion such as car engines and industrial boilers (e.g. electric generating stations). Anthropogenic VOCs originate from sources such as paints, coatings, and fossil fuels (e.g. gasoline).¹² As more NO_x and VOCs emit into the atmosphere coupled with increasing ambient air temperatures, ozone begins to accumulate and reach concentrations that are unhealthy to humans and the environment.

Accumulation of ozone generally occurs in urban areas where manmade NO_x and VOC emissions are high.¹³ People living in urban areas are more commonly exposed to the negative effects of ozone, such as reduction in lung function and respiratory inflammation and distress.¹⁴ Ozone can also cause disruptions in environmental ecosystems including, but not limited to, declines in plant growth such as reductions in crop yield.¹⁵

¹⁰ EPA, *Air Quality Criteria for Ozone and Related Photochemical Oxidant: Volume I of III*, p. 2-20 (2006) available at <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=149923&CFID=58102340&cftoken=94355181>.

¹¹ See *id.* at 2-21; D. Ehhalt, M. Prather, et al., *Intergovernmental Panel on Climate Change (IPCC) Third Assessment Report: Climate Change 2001, Working Group I: The Scientific Basis, Chapter 4, Section 4.2.3.2* available at http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg1/127.htm (last visited May 27, 2016).

¹² Yuma Marginal Nonattainment SIP 2020 Revision: Appendix A, Yuma Ozone Emission Inventory Technical Support Document.

¹³ See EPA, *Criteria for Ozone*, *supra* note 10 at E-6 (“The daily maximum 1-h O_3 concentrations tend to be much higher in large urban areas or in areas downwind of large urban areas.”).

¹⁴ See generally EPA, *supra* note 10 at E-10 – E-23.

¹⁵ See generally EPA, *supra* note 10 at E-23 – E-30.

A.5 U.S. EPA’s 2015 8-Hour Ozone NAAQS

On October 1, 2015, EPA revised the air quality standards for ozone, lowering the level of the NAAQS from 75 ppb to 70 ppb.¹⁶

The 8-hour ozone standards are met at an ambient monitoring site when the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.070 ppm.¹⁷ Table 2 provides a summary of the ozone NAAQS for each of EPA’s review cycles from 1971 through 2015.¹⁸

Table 2 Ozone NAAQS History

Date	Final Rule Citation	Primary/Secondary	Averaging Time	Level	Form
1971	36 FR 8186 (Apr 30, 1971)	Primary and Secondary	1-hour	0.08 ppm	Not to be exceeded more than one hour per year
1979	44 FR 8202 (Feb 8, 1979)	Primary and Secondary	1 hour	0.12 ppm	Attainment is defined when the expected number of days per calendar year, with maximum hourly average concentration greater than 0.12 ppm, is equal to or less than 1
1993	58 FR 13008 (Mar 9, 1993)	EPA decided that revisions to the standards were not warranted at the time			
1997	62 FR 38856 (Jul 18, 1997)	Primary and Secondary	8 hours	0.08 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
2008	73 FR 16483 (Mar 27, 2008)	Primary and Secondary	8 hours	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
2015	80 FR 65292 (Oct 26, 2015)	Primary and Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years

¹⁶ See *National Ambient Air Quality Standards for Ozone, Final Rule*, 80 FR 65292, October 26, 2015.

¹⁷ 40 CFR 50.19.

¹⁸ See <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (last visited January 7, 2020).

A.6 Regulatory Background

Ozone Nonattainment Designation

As noted in Section A.5, EPA revised the NAAQS for ozone in 2015 by lowering the level of the standard to 70 ppb. Pursuant to CAA Section 107(d)(1) the Governor of Arizona submitted initial boundary recommendations for the Maricopa and Yuma ozone nonattainment areas to EPA for the purpose of establishing air quality designations for both. On June 4, 2018, EPA finalized the air quality designations for the Yuma area by concurring and adopting Arizona’s boundary recommendation.¹⁹

A.7 Nonattainment Area Description

The following sections describe the boundary of the nonattainment area and provide information on the geography, climate, population, and economy of Yuma County and the ozone nonattainment area.

A.7.1 Nonattainment Area Boundary

The Yuma Ozone Nonattainment Area (NAA) is located in the Sonoran Desert region of southwestern Arizona, approximately 157 miles southwest of Phoenix. The total land area of the Yuma Ozone NAA is 52 square miles, which comprises approximately 0.94% of the total land area within Yuma County, AZ (5,523 square miles). The boundary of the Yuma Nonattainment Area is defined by multiple criteria as codified at 40 CFR 81.303. **Table 3 Nonattainment Area Description** and **Figure 2 Yuma Nonattainment Area** below illustrate the location of the area.

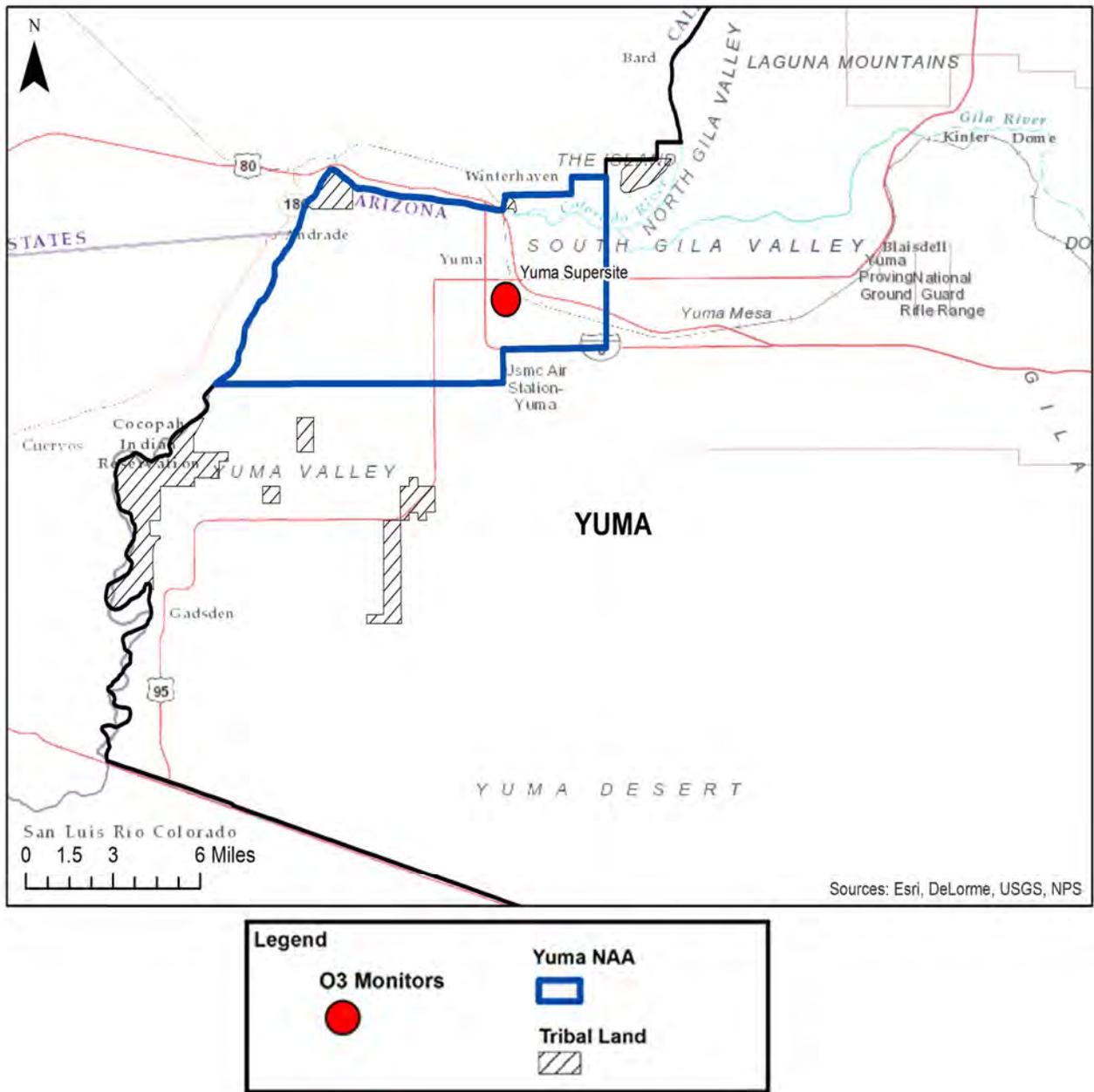
Table 3 Nonattainment Area Description
Yuma Marginal Ozone Nonattainment Area²⁰

<p>The area within Yuma County as described by the following:</p> <ol style="list-style-type: none">1. Bounded on the north and west by the Arizona state line.2. Bounded on the south by the line of latitude at 32° 39’ 20” N.3. Bounded on the east by the line of longitude 114° 33’ 50” W.4. And excluding the section 10, 11, and 12 of township T9S, R23W and any portion in Indian Country.
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¹⁹ *Supra note 1.*

²⁰ 40 CFR 81.303.

Figure 2 Yuma Nonattainment Area



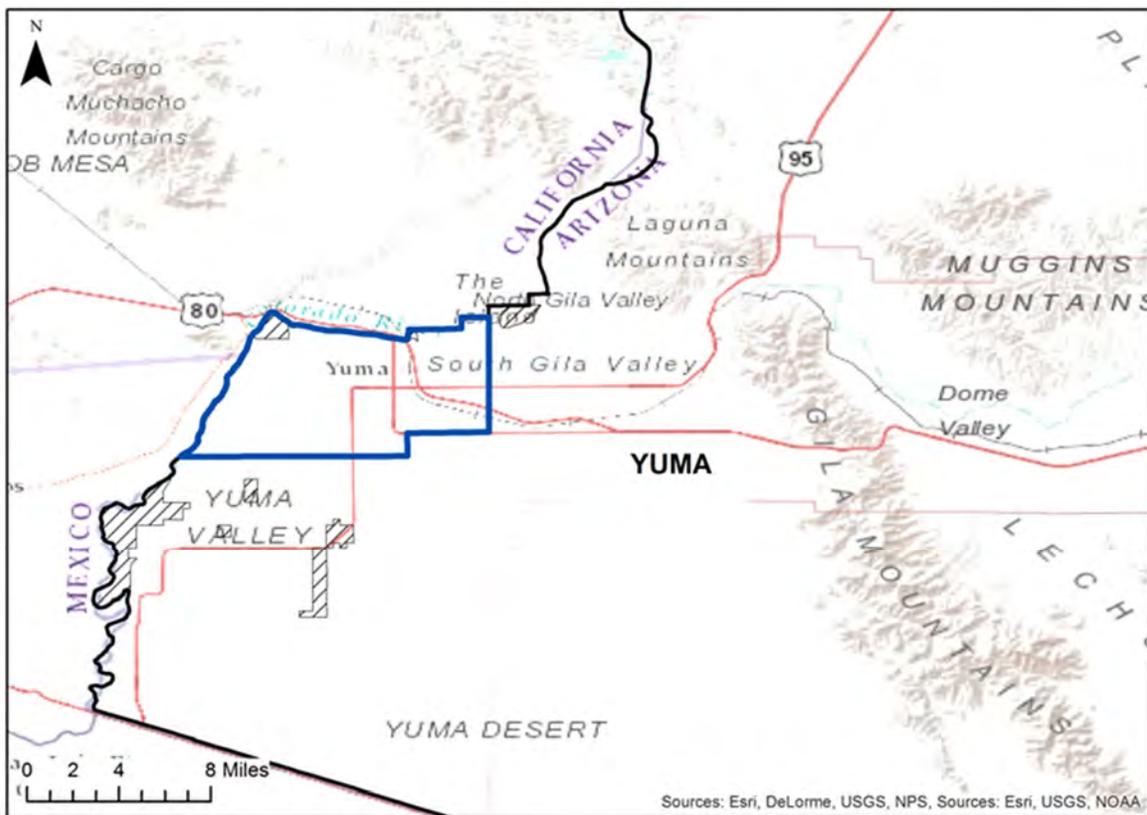
A.7.2 Geography and Climate

Yuma is located along Interstate 8 where the Gila River meets the Colorado River in the Yuma Desert, which is primarily a low elevation section of the Sonoran Desert in the southwestern most corner of Arizona. The Yuma Desert has several masses of sand dunes, south and southeast of the city and near the

border, which contain very little vegetation. However, much of the land in the City of Yuma area and I-8 corridor, extending into both Mexico and California, is used for agricultural purposes.

Yuma County's valley and mesa areas border California and the Colorado River to the west, Mexico to the south, the Gila Mountain Range to the east and the Laguna Mountains to the Northeast. The Gila Mountains are approximately 26 miles long, 5 miles wide, peaking at 3,156 feet, and run south from the Gila River to fade into the Tinajas Atlas Mountains, which follow the same vector south to the Mexican border. The Laguna Mountains are a circular mountain range north of the City of Yuma, north of the Gila River, ranging approximately 7 miles by 7 miles, peaking at approximately 1,080 feet, and bordered on the west by the Colorado River. An overall topographic view of the area is provided in **Figure 3 Yuma Area Topography** below.

Figure 3 Yuma Area Topography



A.7.3 Population

Yuma County is located in the southwestern corner of Arizona. It is bordered by Imperial County, California and Baja California, Mexico to the west and Sonora, Mexico to the south. The Yuma County population is concentrated in the southwestern portion of the county around the border cities of Yuma, Somerton, and San Luis, the Cocopah Indian Reservation, and several large military installations. This region is a gateway between southern California and Arizona by way of I-8 as well as a thoroughfare for international ground transportation, which occurs at the two San Luis ports of entry.

The City of Yuma is approximately 157 miles southwest of Phoenix and contains nearly half of the county’s population. Other communities in Yuma County include the cities of San Luis, Somerton, and the Town of Wellton. Population estimates for the Yuma Ozone NAA are presented in **Table 4 Yuma NAA Population**.

Table 4 Yuma NAA Population

Subject	2010 Population	2017 Projected Population
Yuma Ozone NAA Population	87,348	98,904

A.7.4 Economy

The economy in Yuma is largely supported by agriculture activity, which contributes about \$2.5 billion of the local GDP for the Yuma area.²¹ Yuma is home to the U.S. Army Yuma Proving Grounds as well as the Marine Corp Air Defense Station, which is used by both the U.S. Navy and Marine Corp to train combat pilots.²² As a result, the military also plays a crucial role and is the second largest provider of income into the Yuma economy. The local economy is also driven by health care services industries, some industrial manufacturing and small private businesses operating throughout the county.

The Yuma Ozone Nonattainment Area hosts a heavily trafficked section of interstate, the I-8, which connects Arizona to Southern California.²³ This busy arterial roadway exposes the nonattainment area to NOx and VOC emissions associated with engine combustion and vehicle operation. Because the diverse economy is located in such a hot, arid environment, the opportunity for ozone formation is high, and results in ozone being a consistent air quality issue during the warmer months of the year.²⁴

A.8 General SIP Approach

Yuma was designated nonattainment for the 2015 Ozone NAAQS effective August 2018. According to CAA Title I, Part D and EPA’s implementation rule, air agencies with a marginal area are required to adopt an emissions statement rule for stationary sources, submit a base year emissions inventory, follow general and transportation conformity requirements in CAA section 176(c), and implement a nonattainment area

²¹ Yuma Chamber of Commerce, Business & Economy, available at <https://www.yumachamber.org/business-and-economy.html> (last accessed May 22, 2020).

²² U.S. Marine Corp, Marine Corp Air Station Yuma, available at <https://www.mcas-yuma.marines.mil/> (last accessed May 22, 2020).

²³ See *I-8 Corridor Profile Study*, ADOT, March 2017 available at <https://azdot.gov/sites/default/files/2019/08/i8-final-report-031717.pdf> and <https://ympo.org/maps-more/traffic-counts/>.

²⁴ See *Chemistry in the Sunlight* available at https://earthobservatory.nasa.gov/features/ChemistrySunlight/chemistry_sunlight2.php and *Air Quality Year-to-Date Reports* at <https://azdeq.gov/aq/ytd?year=2017&pollutant=ozone&location=yuma&type=aqi#mtop>.

preconstruction permit program (NNSR).^{25, 26} The following section explains the approach taken by ADEQ to implement required planning provisions for the Yuma Nonattainment Area.

A.8.1 Clean Air Act Requirements for Nonattainment Areas

Provisions for ozone nonattainment area SIPs are contained in CAA Title I, Part D, Subparts 1 and 2. Requirements applicable to marginal nonattainment areas are listed and described below.

- **Baseline Emissions Inventory – CAA Section 182(a)(1)**

CAA section 182(a)(1) requires the state to submit a comprehensive, accurate, and current inventory of actual emissions from all sources of relevant pollutant(s) in the nonattainment area. A baseline inventory is included in **Appendix A, Yuma Ozone Emission Inventory Technical Support Document** and summarized in **Chapter C** of this document.

- **Corrections to the State Implementation Plan – CAA Section 182(a)(2)**

The provisions listed under Section 182(a)(2)(A) through (C) regarding reasonably available control technology (RACT) corrections, vehicle inspection and maintenance savings clause, and permit programs were applicable to the then existing 1-hour ozone NAAQS and were intended to “address SIP-related transition issues unique to the transition from provisions ‘as in effect immediately before November 15, 1990’ to provisions in the newly enacted 1990 CAA Amendments.”²⁷

The Yuma area was designated nonattainment for the 2015 8-hour ozone NAAQS in 2018 and had no prior nonattainment area obligations. As such, no submittals under CAA Section 182(a)(2) are required for the area.

- **Periodic Inventory – CAA Section 182(a)(3)(A)**

Section 182(a)(3)(A) requires the State to submit a revised emissions inventory every three years after submission of the initial base year inventory under section 182(a)(1) until the area is redesignated to attainment. The base year inventory for the Yuma 8-hour ozone Marginal Nonattainment Area is the 2017 emissions inventory for ozone precursors as described above and included in **Appendix A**.

The next three-year cycle inventory required will be for calendar year 2020, coinciding with the triennial National Emissions Inventory (NEI) submission cycle. ADEQ will complete a 2020 periodic emissions inventory of ozone precursors for the Yuma Nonattainment Area to satisfy the requirements of Section 182(a)(3)(A).

- **Emissions Statements – CAA Section 182(a)(3)(B)(i) and (ii)**

Under Section 182(a)(3)(B) the State is required to submit a revision to the Arizona State Implementation Plan requiring owners and operators of stationary sources of oxides of nitrogen

²⁵ See *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements*, 83 FR 62998, December 6, 2018.

²⁶ See *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classifications and State Implementation Plan Requirements*, 81 FR 81283, November 17, 2016.

²⁷ 83 FR 63001, December 6, 2018.

(NO_x) and volatile organic compounds (VOCs) to submit annual emission statements detailing the actual emissions from that source.

The State does not currently have a SIP approved rule that meets these requirements. Therefore, ADEQ amended A.A.C. R18-2-327, Annual Emissions Inventory Questionnaire, to require stationary sources that emit ozone precursors in ozone nonattainment areas to submit annual emission statements to the Department. ADEQ is submitting this rule with the Yuma marginal area plan to meet applicable requirements of Section 182(a)(3)(B). The changes to A.A.C. R18-2-327 are detailed in the Notice of Final Rulemaking in **Appendix C, Exhibit C-II** and summarized in **Chapter D** of this document.

- **New Source Review – CAA Sections 172(c)(5) and 173**

CAA Section 172(c)(5) requires permits for construction and operation of new or modified major stationary sources located in the nonattainment area, in accordance with Section 173.

All new sources and modifications to existing sources in Arizona are subject to state requirements for preconstruction review and permitting pursuant to A.A.C. Title 18, Chapter 2, Articles 2, 3, and 4 or relevant county rules. All new major sources and major modifications to existing major sources in Arizona are also subject to the nonattainment new source review (NNSR) provisions of these rules or prevention of significant deterioration for attainment areas.

On November 2, 2015, the EPA Region 9 Administrator published a notice of final rulemaking issuing limited approval/limited disapproval (LA/LD) of an October 29, 2012 Arizona SIP revision designed to update the new source review (NSR) rules included in the SIP and to bring the state's NSR program into compliance with federal requirements.

On April 28, 2017, ADEQ submitted a SIP revision with rule amendments designed to address deficiencies related to major NSR with the exception of requirements pertaining to greenhouse gases (GHGs). ADEQ is currently administering the NSR requirements for GHGs under a delegation agreement with EPA. On May 4, 2018, EPA took final action to approve Arizona's major NSR regulatory revisions. The action included a conditional approval of ADEQ's NSR program with respect to CAA requirements related to ammonia as a precursor to fine particulate matter (PM_{2.5}) under the NNSR program requirements in CAA Section 189(e).²⁸

On January 14, 2020, ADEQ submitted a SIP revision addressing the regulation of ammonia as a precursor of PM_{2.5} in the major NSR program, as well as additional issues related to NSR. On July 22, 2020, ADEQ submitted a SIP revision to address the outstanding deficiencies in ADEQ's program relating to minor NSR.

At this time, ADEQ's NNSR program is fully approved with respect to ozone. EPA, however, has notified ADEQ that in order to be approvable in the future the state's NSR program must be amended to conform to the current interprecursor trading (IPT) provisions for offsets in 40 CFR 51.165(a)(11) and part 51 Appendix S.

Under 40 CFR 51.1314, ADEQ must submit a NNSR plan for the Yuma Nonattainment Area by August 3, 2021, three years from the effective date of the nonattainment designation. ADEQ is

²⁸ See 83 FR 19631, May 4, 2018 and 40 CFR 52.144(C), effective June 4, 2018.

working on a rule amendment addressing IPT and plans to submit that amendment together with the otherwise fully approved NNSR program to satisfy the NNSR requirements for Yuma.

The minor NSR program still has a limited disapproval for certain items, but the July 22, 2020 SIP submission included program changes intended to cure outstanding deficiencies.

- **General Offset Requirement – CAA Section 182(a)(4)**

CAA Section 182(a)(4) requires total emissions increases of an ozone precursor from a new major source or major modification to be offset by total decreases in emissions of the same precursor at a ratio of at least 1.1 to 1. A.A.C. R18-2-404(J) requires emission offsets within the nonattainment area at this ratio. Offset requirements are addressed as part of the NSR program under CAA Section 172(c)(5). A.A.C. R18-2-404 was submitted to EPA with other NSR rule revisions on April 28, 2017, and was approved into the SIP by final rule on May 4, 2018.²⁹ As noted above, the IPT provisions of ADEQ's offset regulations need to be amended to be fully approvable by EPA.

- **Conformity (Transportation and General) – CAA Section 176(c)**

Transportation Conformity

"Transportation conformity is required by ... Clean Air Act section 176(c) (42 U.S.C. 7506(c)) to ensure that federal funding and approval are given to highway and transit projects that are consistent with ("conform to") the air quality goals established by a state air quality implementation plan (SIP)."³⁰

CAA Section 176(c)(6) provides for a one year delay for transportation conformity to apply in newly designated nonattainment areas. Based on the Yuma Ozone Nonattainment Area's effective designation date of August 3, 2018, conformity applied in the area beginning August 3, 2019.

The Yuma Metropolitan Planning Organization (YMPO) is the designated transportation planning authority in the Yuma region. Since state planning obligations for a marginal area do not include requirements to demonstrate attainment of the NAAQS, ADEQ is not currently creating a conformity SIP for the area. In lieu of approved emission budgets, YMPO will need to rely on showing conformity with the ozone NAAQS through interim emission tests as described in 40 CFR 93, Subpart A.

A finding of conformity is required by the U.S. Department of Transportation for all subject transportation plans and programs in a nonattainment area. On November 14, 2019, the Federal Highway Administration and Federal Transit Administration determined that the Yuma, Arizona urbanized area has met the requirements of EPA's Transportation Conformity Rule (40 CFR Parts 51 and 93). The determination was based on an evaluation of documentation submitted by YMPO on November 12, 2019 and included both the Yuma particulate matter and ozone nonattainment areas.

²⁹ *Id.*

³⁰ Source: *General Information for Transportation Conformity*, <https://www.epa.gov/state-and-local-transportation/general-information-transportation-and-conformity> (July 19, 2017).

General Conformity

Similar to transportation conformity, which applies to highway and mass transit projects, general conformity is applicable to all other federally supported activities to ensure that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state's plans to meet national air quality standards.

General conformity applied in the Yuma Ozone Nonattainment Area on the effective designation date, August 3, 2018.

General conformity requirements for federally supported activities are described in 40 CFR Part 93, Subpart B. Criteria for making determinations and other provisions for general conformity are located in the SIP approved rule A.A.C. R18-2-1438.³¹ ADEQ commits to review and comment, as appropriate, on any federal agency draft general conformity determination it receives pursuant to 40 CFR 93.155 for activities planned in this air quality planning area. No other submission is required by the State under this section.

A.8.2 EPA Guidance

The guidance documents utilized in the preparation of this plan include:

- *Reasonable Further Progress, Attainment Demonstration, and Related Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standard.* Memorandum from John S. Seitz, U.S. Environmental Protection Agency. May 10, 1995.
- *State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990.* U.S. Environmental Protection Agency. 57 FR 13498, April 16, 1992.
- *State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental.* U.S. Environmental Protection Agency. 57 FR 18070, April 28, 1992.
- *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classifications and State Implementation Plan Requirements.* 81 FR 81283, November 17, 2016.
- *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements.* 83 FR 62998, Dec. 6, 2018.

A.9 Intergovernmental Participation and Consultation; Stakeholder Process

ADEQ works with its partners and the regulated community to develop and implement air quality plans in order to attain and maintain the NAAQS. Participation is encouraged and technical advice sought through meetings and discussion with governmental departments and agencies, municipalities, members of the regulated community, and other interested parties; and through the public comment process for SIP revisions and rulemakings.

³¹ 64 FR 19916, April 23, 1999.

ADEQ consulted and worked with the Yuma Metropolitan Planning Organization throughout the development of this SIP and associated rule revision. Working with local governments is not only a requirement of the CAA when developing a SIP document, it is also a useful way to understand the issues faced by the community in which the SIP will impact. Participation and consultation helps create a SIP that contains the most effective strategy for protecting local air quality, using strategies developed to meet the needs of the community.

Documentation regarding the public notice and comment process for this SIP revision and rulemaking are contained in Appendices B and C.

B. AMBIENT AIR QUALITY MONITORING

B.1 Description of Monitoring Network

ADEQ operates a network of seven ozone monitors throughout Arizona, in addition to one located in San Luis, Mexico. ADEQ currently operates one ambient ozone monitor in the Yuma area located at the Yuma Super Site. The surrounding area is primarily commercial and industrial, with a dirt lot adjacent to the south, and Interstate 8 just 1 km to the northeast (see Figure 2, Yuma Nonattainment Area).

The minimum monitoring requirements for ozone are based on the population of the area and design values (see Section B.2).³² The following table illustrates the minimum monitoring requirements for municipalities of varying population.

Table 5 Ozone Monitoring Requirements

Population	Most Recent 3 Year 8-Hour Design Value \geq 85% of NAAQS (0.0595 ppm)	Most Recent 3 Year 8-Hour Design Value <85% NAAQS (0.0595 ppm) or no Design Value Available
>10 Million	4 monitors	2 monitors
4 - <10 Million	3 monitors	1 monitor
350,000 - <4 Million	2 monitors	1 monitor
50,000 - <350,000	1 monitor	0 monitors

B.2 Historical Data Summary and Current NAAQS Compliance

The Yuma Nonattainment Area has demonstrated historically high ozone concentrations, but as of the last several years concentrations have been trending downward. Intense seasonal temperatures, at times exceeding 110° F,³³ accompanied with the large volume of vehicle traffic and contributions of precursor emissions from stationary sources contribute to ideal ozone production conditions.³⁴

The 2015 ozone standard is attained when the three-year average of the annual fourth-highest daily maximum eight-hour average concentration measured at a monitor is less than or equal to

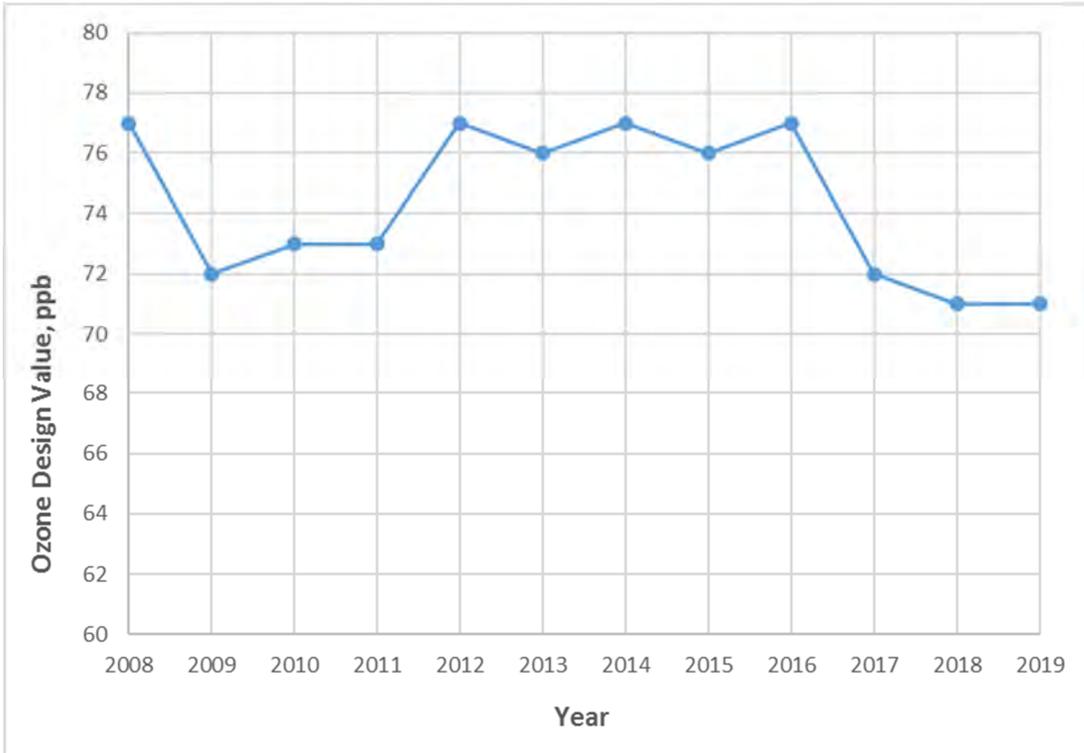
³² 40 CFR Part 58, Appendix D.

³³ See <https://www.weather.gov/psr/FirstandLastTemperatures> and <https://w2.weather.gov/climate/xmacis.php?wfo=psr>.

³⁴ See <https://ein.az.gov/emergency-information/emergency-bulletin/high-pollution-advisory-issued-ozone-effective-june-12-yuma>.

0.070 ppm (70 ppb). This is also known as the design value. Figure 4 presents the design values for the three-year averaging periods ending 2008 through 2019.

Figure 4 Yuma Super Site Design Value³⁵



³⁵ See Appendix A, Yuma Ozone Emission Inventory Technical Support Document.

C. EMISSIONS INVENTORY

Clean Air Act Section 182(a)(1) requires the state to submit a current inventory of actual emissions from all sources of relevant pollutants. This “base year” inventory for the Yuma 8-hour Ozone Nonattainment Area is included in *Appendix A, Yuma Ozone Emission Inventory Technical Support Document*, and summarized below.

C.1 Overview of Emissions Inventory

EPA defines the base year inventory as a comprehensive, accurate, current inventory of actual emissions from sources of volatile organic compounds (VOC) and nitrogen oxides (NO_x) emitted within the boundaries of the nonattainment area.³⁶

ADEQ selected 2017 as the base year for emissions inventory (EI) development because it is the most current and comprehensive emission inventory for Yuma County, AZ at this time. In general, ADEQ relied on annual emission reports, modeling, local activity data, and EPA’s 2017 National Emissions Inventory (NEI)³⁷ to provide emissions estimates for point, nonpoint and mobile sources within the Yuma Nonattainment Area. The 2017 inventory includes both annual and ozone season day (OSD) emissions.

C.2 Point Sources

Point sources account for stationary sources of emissions, such as industrial processes, electrical generating units, petroleum product storage and transfer facilities.

ADEQ compiled actual emissions for all permitted point sources within the Yuma Nonattainment Area in 2017. There are four predominant point sources located in the NAA, including the YUCCA Power Plant (owned and operated by Arizona Public Service), International Paper facility, Yuma Regional Medical Center, and Yuma Cogeneration Power. These facilities contribute approximately 200 tons of ozone precursor pollutants per year as demonstrated below in **Table 6 Point Source Emissions in the Yuma NAA**.

Table 6 Point Source Emissions in the Yuma NAA

Source	Annual Emissions (ton/yr)		Ozone Season Day (OSD) Emissions	
	NO _x	VOC	NO _x	VOC
APS – YUCCA Power Plant	176.15	8.51	965.21	46.61
International Paper	4.44	11.3	24.31	60.42
Yuma Cogeneration Associates	8.12	0.31	44.51	1.71

³⁶ 40 CFR 51.1300.

³⁷ “The National Emissions Inventory (NEI) is a comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants from air emissions sources. The NEI is released every three years based primarily upon data provided by State, Local, and Tribal air agencies for sources in their jurisdictions and supplemented by data developed by the US EPA.” <https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei>.

Source	Annual Emissions (ton/yr)		Ozone Season Day (OSD) Emissions	
	NOx	VOC	NOx	VOC
Yuma Regional Medical Center	12.62	0.57	69.14	3.13
Total	201.33	20.42	1103.17	111.88

C.3 Nonpoint Sources

Nonpoint emission sources in the Yuma Ozone NAA are numerous and widespread and include fuel combustion, industrial processes, solvent use, dry cleaning, and other miscellaneous area sources. Nonpoint sources are the largest contributor of VOC emissions in the area.

ADEQ used both “top-down” and “bottom-up” approaches to estimate emissions from these sources. In the bottom-up approach, ADEQ relied on permits, annual emission reports, and other local activity data. In the top-down approach, ADEQ used 2017 NEI county-level emissions and allocated emissions to the ozone NAA by population, area, employment, or other scaling methods.

Nonpoint source emissions are summarized in Table 7 below.

C.4 Mobile Sources

On-road and non-road mobile sources in the Yuma NAA are numerous and contribute a significant volume of precursor emissions into the ambient environment. On-road mobile sources are the largest contributor of NOx emissions in the nonattainment area. A major source of emissions are freight haulers and tractor trailers, which is likely the result of the nonattainment area being located adjacent to a major trucking and travel corridor. As noted in Chapter A, Interstate 8 connects Arizona to Southern California and goes through the city of Yuma as well as the ozone NAA. Where the I-8 crosses the Colorado River and connects the two states, the average daily traffic count varies between 17,000 vehicles per day to 27,000 vehicles per day traveling in either direction.³⁸

On-road motor vehicle emission estimates were developed using MOVES2014b, EPA's Motor Vehicle Emission Simulator emission modeling system. Due to the lack of localized data, ADEQ estimated non-road emissions using EPA's 2017 NEI data. Annual county emissions were allocated to the ozone NAA by using appropriate factors such as population, cropland area, railroad length, etc.

On-road and non-road mobile source emissions are summarized in Table 7 below.

³⁸ <https://ympo.org/maps-more/traffic-counts/>

C.5 Emissions Summary

An overall summary of the emissions inventory for the ozone NAA is presented by source type in Table 7.

Table 7 Summary of VOC and NOx Emissions in the Yuma Ozone NAA

Source Type	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
	VOC	NOx	VOC	NOx
Point	20.42	201.33	111.88	1103.17
Area (Nonpoint)	1706.53	65.90	15007.04	1275.17
Mobile On-road	814.71	1694.72	4817.10	9673.58
Non-road Mobile	282.81	380.73	1549.66	2086.19
Biogenics	366.74	5.91	2009.54	40.55
Total	3191.21	2348.59	23495.22	14178.66

D. EMISSIONS STATEMENTS

Under CAA Section 182 (a)(3)(B)(i), a marginal SIP submittal must include provisions for Emissions Statements as follows:

“... the State shall submit a revision to the State implementation plan to require that the owner or operator of each stationary source of oxides of nitrogen or volatile organic compounds provide the State with a statement, in such form as the Administrator may prescribe (or accept an equivalent alternative developed by the State), for classes or categories of sources, showing the actual emissions of oxides of nitrogen and volatile organic compounds from that source.”

D.1 Emissions Statement

To meet the requirements of Section 182(a)(3)(B)(i), ADEQ amended Arizona Administrative Code (A.A.C.) R18-2-327, Annual Emissions Inventory Questionnaire, to include requirements for stationary sources who emit ozone precursors in ozone nonattainment areas to submit annual emission statements to the Department. The Notice of Final Rulemaking is included in this SIP revision and submitted to EPA for approval in Appendix C.

Under CAA Section 182(a)(3)(B)(ii), the State may waive the submittal requirement for any class or category of stationary sources which emit less than 25 tons per year of VOCs or NO_x, if the State in its submissions of the base year (CAA Section 182(a)(1)) and periodic (CAA Section 182(a)(3)(A)) emissions inventories, provides an inventory of emissions from such class or category of sources, based on the use of the emission factors established by the EPA Administrator or other methods acceptable to the Administrator.

The emissions statement requirement in the amended A.A.C. R18-2-237, Emissions Inventory Questionnaire and Emissions Statement, does not apply to sources of VOCs or NO_x less than 25 tons per year. Pursuant to CAA Section 182(a)(3)(B)(ii), ADEQ has included in the base year inventory submission, and will include in future periodic inventory submissions for the Yuma 2015 Ozone Standard Nonattainment Area, VOC and NO_x emissions from such classes and categories of sources based on the use of the emission factors established by EPA or other methods acceptable to EPA.

D.2 Emissions Inventory Questionnaire

In addition to the new emissions statement requirements for ozone nonattainment areas, A.A.C. R18-2-327 prescribes the procedures all sources permitted under A.A.C. Title 18, Chapter 2 must follow to complete and submit emission inventory questionnaires to ADEQ.

ADEQ has identified amendments to A.A.C. R18-2-327 that would alleviate a burdensome regulatory reporting requirement for some Class II air quality permitted sources (non-major sources).³⁹ Amendments to the rule change the frequency of reporting from annual to a minimum of once every three years. However, ADEQ retains the ability to require Class II sources to submit reports more frequently (in addition to the triennial questionnaire). ADEQ estimates these amendments will alleviate the reporting

³⁹ See A.A.C. R18-2-302, Applicability; Registration; Classes of Permits.

requirements for an average of 275 sources each year and will free up at least 100 hours of ADEQ staff time per year.

According to CAA Section 110(l), revisions to a state implementation plan must not interfere with attainment and maintenance of the air quality standards or any other applicable requirement of the CAA. The changes to A.A.C. R18-2-327 do not modify any emissions limitations or other control strategies for attainment of the NAAQS. Additionally, the amended rule will continue to meet the annual and triennial air emission reporting requirements under 40 CFR 51.30.

E. CONCLUSION

This SIP revision demonstrates that the applicable CAA requirements for marginal ozone areas have been satisfied for the Yuma Ozone Nonattainment Area. This includes revisions addressing emissions inventories and emissions statement regulations as described in the preceding chapters.

On June 4, 2018, EPA designated a portion of Yuma County “nonattainment” for the 2015 Ozone NAAQS, classifying the area as “marginal” (effective August 3, 2018). According to CAA Section 182, states with areas designated nonattainment have two years from the effective date of the designation to submit emission inventory reporting regulations under CAA Section 182(a)(3)(B). To fulfill these requirements, ADEQ submits this SIP revision, including an amended A.A.C. R18-2-327 to require annual emissions statements for stationary sources located in ozone nonattainment areas that emit ozone precursors. This plan also includes the base year emissions inventory as required in CAA Section 182(a)(1). ADEQ will address new source review permit program requirements applicable to the 2015 Ozone NAAQS in a future submittal to EPA.

ADEQ requests that EPA approve this revision to the Arizona SIP, including the regulation A.A.C. R18-2-327 submitted for approval in Appendix C.

Appendix A: Yuma Ozone Emission Inventory Technical Support Document



Appendix A

Yuma Ozone Emission Inventory Technical Support Document

*Air Quality Division
December 4, 2020 Final*

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Glossary of Terms

AADT	Annual Average Daily Traffic
ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADOA	Arizona Department of Administration
ADOT	Arizona Department of Transportation
CFR	Code of Federal Register
EI	Emission Inventory
EIIP	Emission Inventory Improvement Program
EPA	U.S. Environmental Protection Agency
MOVES	Motor Vehicle Emission Simulator
NAA	Non-attainment Area
NAAQS	National Ambient Air Quality Standard
NEI	National Emission Inventory
NAICS	North American Industry Classification System
OSD	Ozone Season Day
QA	Quality Assurance
QAP	Quality Assurance Plan
QC	Quality Control
RAM	Responsibility Assignment Matrix
SCC	Source Classification Code
SIP	State Implementation Plan
TAU	Technical Analysis Unit
TSD	Technical Support Document

A1 Introduction

A1.1 Purpose

The Arizona Department of Environmental Quality (ADEQ) is preparing this Technical Support Document (TSD) to support a State Implementation Plan (SIP) revision for the Yuma ozone Nonattainment Area (NAA).

Yuma was designated as a marginal nonattainment area for 2015 ozone National Ambient Air Quality Standards (NAAQS) by the United States Environmental Protection Agency (EPA) effective August 3, 2018¹. According to the Clean Air Act (CAA) §182(a) and the *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements* rule, a baseline emission inventory (EI) followed by periodic EI updates is required². This Technical Support Document (TSD) provides EI estimates for various emission sources within the Yuma ozone NAA³.

ADEQ selected 2017 as the base year for EI development, because it is the most current and comprehensive emission inventory for Yuma County, AZ at this time. Emission inventories are developed as outlined in Table A-1.

Table A-1: Emission Inventory Outline

Inventory Year	Inventory Purpose	Data Source
2017	Base Year	2017 NEI & ADEQ Internal Point Source Database, and other data sources

¹ Federal Register, Vol. 83, No. 107, June 4, 2018

² Federal Register, Vol. 83, No. 234, December 6, 2018

³ https://www.epa.gov/sites/production/files/2017-07/documents/ei_guidance_may_2017_final_rev.pdf

A1.2 Ozone Sources

Source categories included in the inventory are:

- Point Source Emissions
- Nonpoint Source Emissions
- On Road Mobile Emissions
- Nonroad Mobile Emissions
- Biogenic Emissions

ADEQ compiled a 2017 base year emission inventory from the above listed source categories. A more detailed description of these sectors is provided in section A6. Point source emissions were gathered from the ADEQ point source databases while other categories (nonpoint, onroad, nonroad, and biogenics) were based on developed emission calculations (as described in section A6) or NEI data.

A1.3 Population

The Yuma ozone NAA is located in the Sonoran Desert region of southwestern Arizona, approximately 157 miles southwest of Phoenix. The total land area of the Yuma ozone NAA is 52 square miles, which comprises approximately 0.94% of the total land area within Yuma County, AZ (5,523 square miles).

A description of the Yuma ozone NAA is outlined in Table A-2, as codified at 40 CFR 81.303. Figure A-1 is a detailed map of the Yuma ozone NAA. Population estimates for the Yuma ozone NAA is also presented in Table A-2⁴.

Yuma County is located in the southwestern corner of Arizona, bordered by Imperial County, California and Baja California, Mexico to the west and Sonora, Mexico to the south. The Yuma County population is concentrated in the southwestern portion of the county, around the border cities of Yuma, Somerton, and San Luis, the Cocopah Indian Reservation, and several large military installations. This region is a gateway between southern California and Arizona, via I-8, and a thoroughfare of international ground transportation, via the two San Luis ports of entry. The County seat is Yuma, which lies approximately 157 miles south west of Phoenix and contains nearly half of the county's population. Other communities in Yuma County include cities of San Luis and Somerton and town of Wellton.

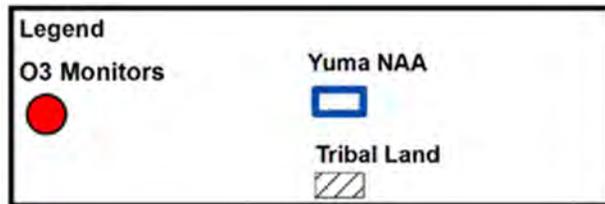
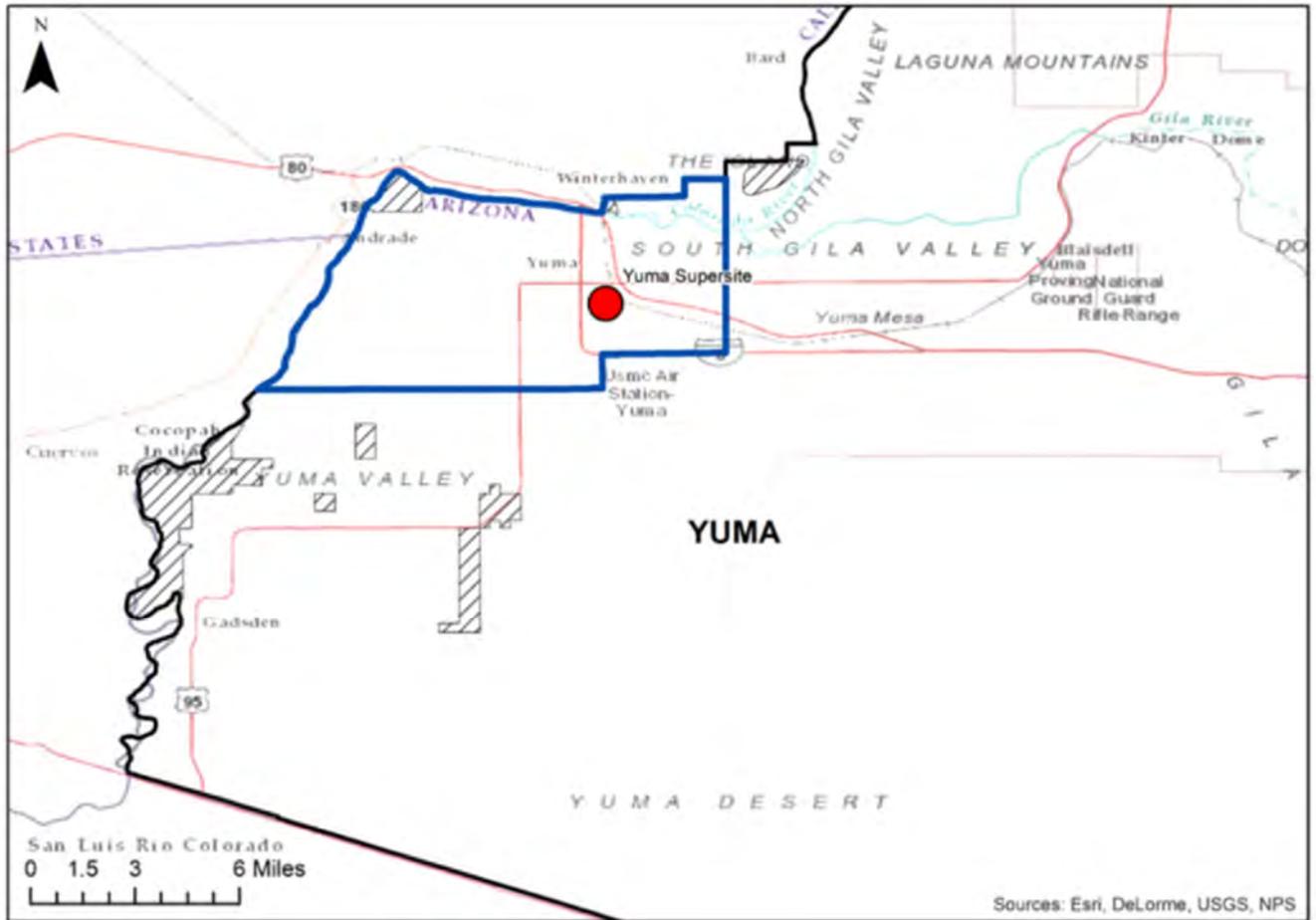
⁴ <https://population.az.gov/population-estimates>

Table A-2: Geographic Location and Population

Yuma Ozone NAA⁵	
Land Area	52 mi ²
2010 Population	87,348
2017 Projected Population	98,904
Nonattainment Designated Area (40 CFR 81.303)	
<p>That Portion within Yuma County of the area described by the following:</p> <ol style="list-style-type: none"> 1. Bounded on the north and west by the Arizona state line 2. Bounded on the south by the line of latitude at 32° 39' 20" N 3. Bounded on the east by the line of longitude 114° 33' 50" W 4. And excluding the section 10, 11, and 12 of township T9S, R23W and any portion in Indian Country. 	

⁵ ADOA provided the population projects for Yuma County.

Figure A-1: Yuma Ozone NAA



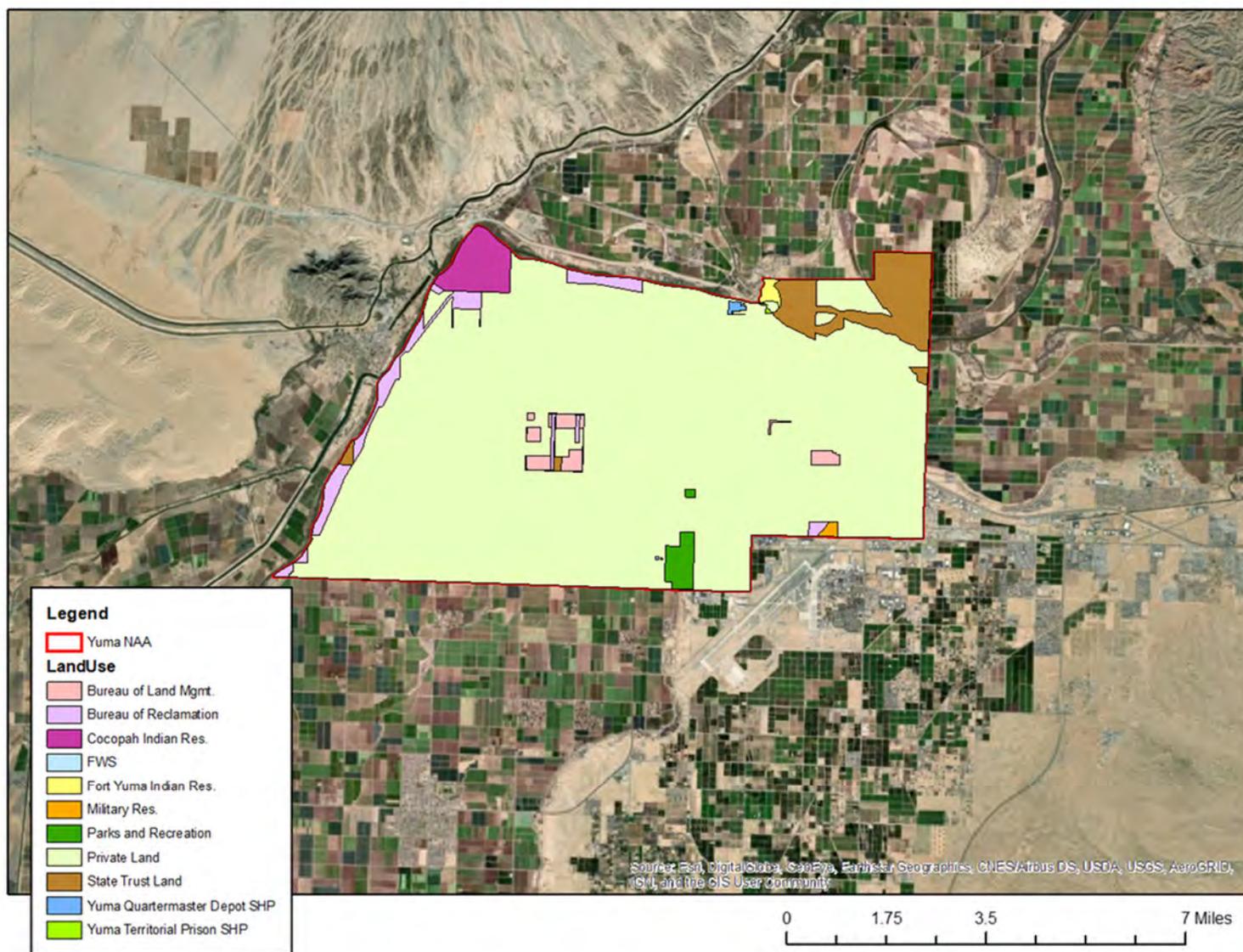
A1.4 Land Use

The major land owners in the Yuma ozone NAA are private owners, state trust land, Bureau of Reclamation, and Indian Reservations. A breakdown of the land owners in the Yuma ozone NAA is presented in Table A-3 and Figure A-2.

Table A-3: Yuma Ozone NAA Land Owners

Yuma Ozone NAA		
Land Owner	Area (square miles)	Percentage
Bureau of Land Management	0.56	1.08
Bureau of Reclamation	1.33	2.56
Cocopah Indian Reservation	1.05	2.02
Fort Yuma Indian Reservation	0.12	0.23
Parks and Recreation	0.45	0.86
Yuma Quartermaster Depot SHP	0.05	0.09
Yuma Territorial Prison SHP	0.01	0.02
Military Res.	0.06	0.12
Private Land	45.77	88.13
State Trust Land	2.54	4.89
Total NAA Land Area	51.94	

Figure A-2: Land Owners in Yuma Ozone NAA



A2 Monitoring Network

There is currently one ozone monitor in the Yuma area, Yuma Supersite, which is operated by ADEQ. The site is located on the southeast corner of the Rural Metro Administration Facility property. The surrounding area is commercial and industrial, with a dirt lot adjacent to the south and I-8 1 km to the northeast. In addition to NAAQS compliance, the site is also used to help understand transport of PM and ozone. The parameters monitored are part of the State or Local Air Monitoring Stations (SLAMS) and meteorological networks. See Figure A-3 below for a full description of the Yuma Supersite monitor from ADEQ's Proposed 2019 Arizona Annual Air Monitoring Network Plan.

Ozone design value concentration at Yuma Supersite for 2016-2018 and 2017-2019 is 71 ppb.

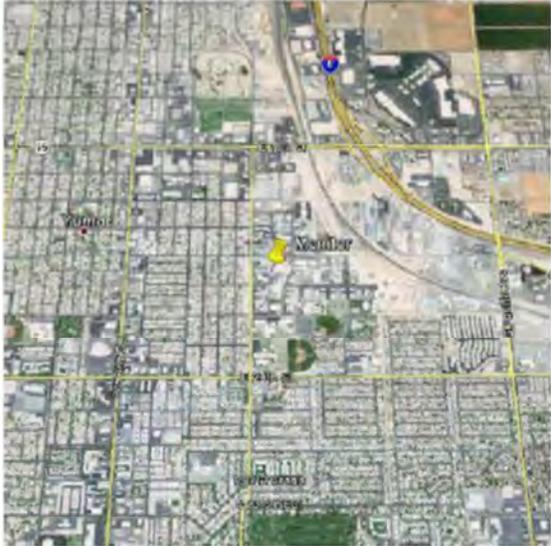
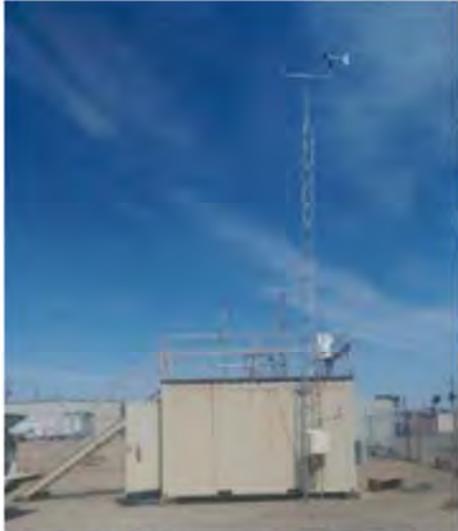
The ADEQ data for Yuma have been collected and quality assurance procedures have been conducted in accordance with 40 CFR Part 58. Data from the monitor are entered into EPA's Air Quality System (AQS) database in accordance with federal guidelines.

As mentioned above, the monitor site is in close proximity to residential and industrial areas. Based upon the location and siting details, the site adequately represents general exposure of the Yuma ozone NAA population to ozone.

Figure A-3: Monitoring Network

Site Information			
AQS ID	04-027-8011		
Street Address	2029 S. Arizona Ave. Yuma, AZ 85364		
County	Yuma	Groundcover	Gravel
CBSA	Yuma	Latitude	32.6903
Surrounding Area	Commercial/Industrial	Longitude	-114.6144
Adjacent Roadway Info	91 m – W – Arizona Ave. AADT Count – 12,302	Elevation	60 m
Nearest Assessed Roadway Info	Same	Site Established Date	02/01/2006

Parameters Monitors	
<ul style="list-style-type: none"> • Wind • O₃ • PM₁₀ 	<ul style="list-style-type: none"> • PM_{2.5} • Temp/RH

Site Photos	
 <p>Aerial view of Yuma Supersite</p>	 <p>Shelter and Meteorological Tower at Yuma Supersite – 4/2014</p>

A3 Ambient Air Quality

The 2015 ozone standard is attained when the three-year average of the annual fourth-highest daily maximum eight-hour average concentration measured at a monitor is less than or equal to 0.070 ppm (70 ppb). This is also known as the design value. Figure A-4 presents the design values for years 2008 through 2018.

Figure A-4: Yuma Ozone Design Values 2008-2018⁶

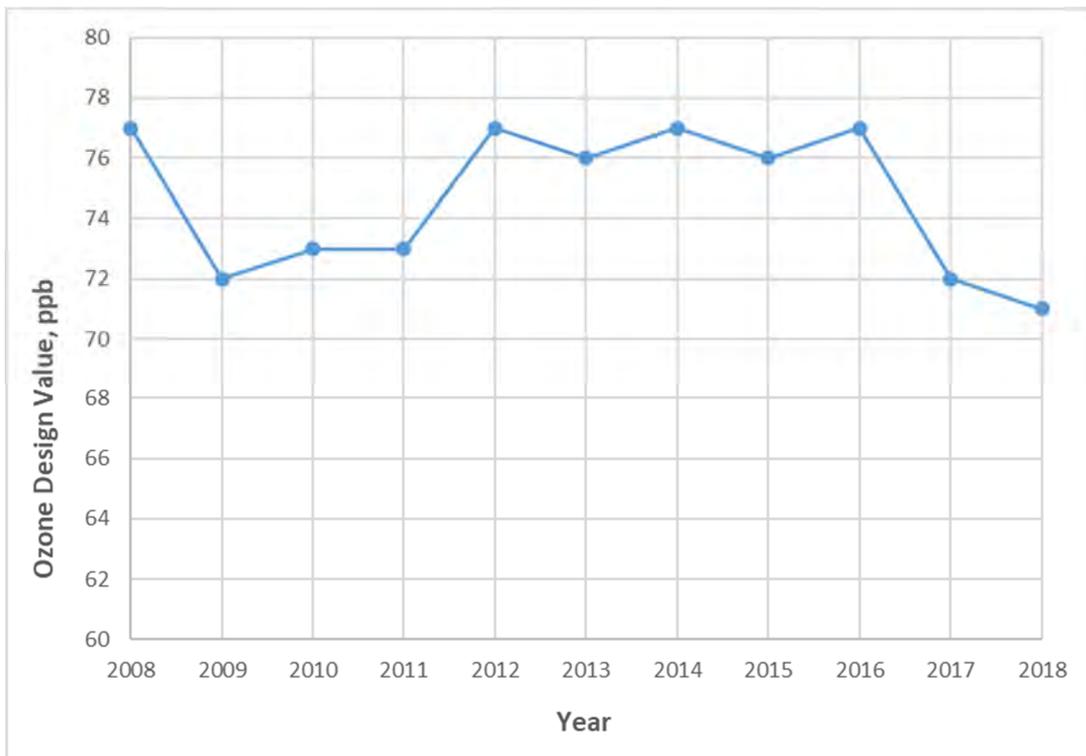


Figure A-5 shows the number of yearly exceedances of the 2015 NAAQS of 70ppb recorded at Yuma Supersite monitor since 2013.

⁶ EPA’s Air Quality System (AQS): <https://www.epa.gov/outdoor-air-quality-data>

Figure A-5: Number of Days with Exceedance (Ozone Concentration > 70 ppb) at Yuma Supersite Monitor

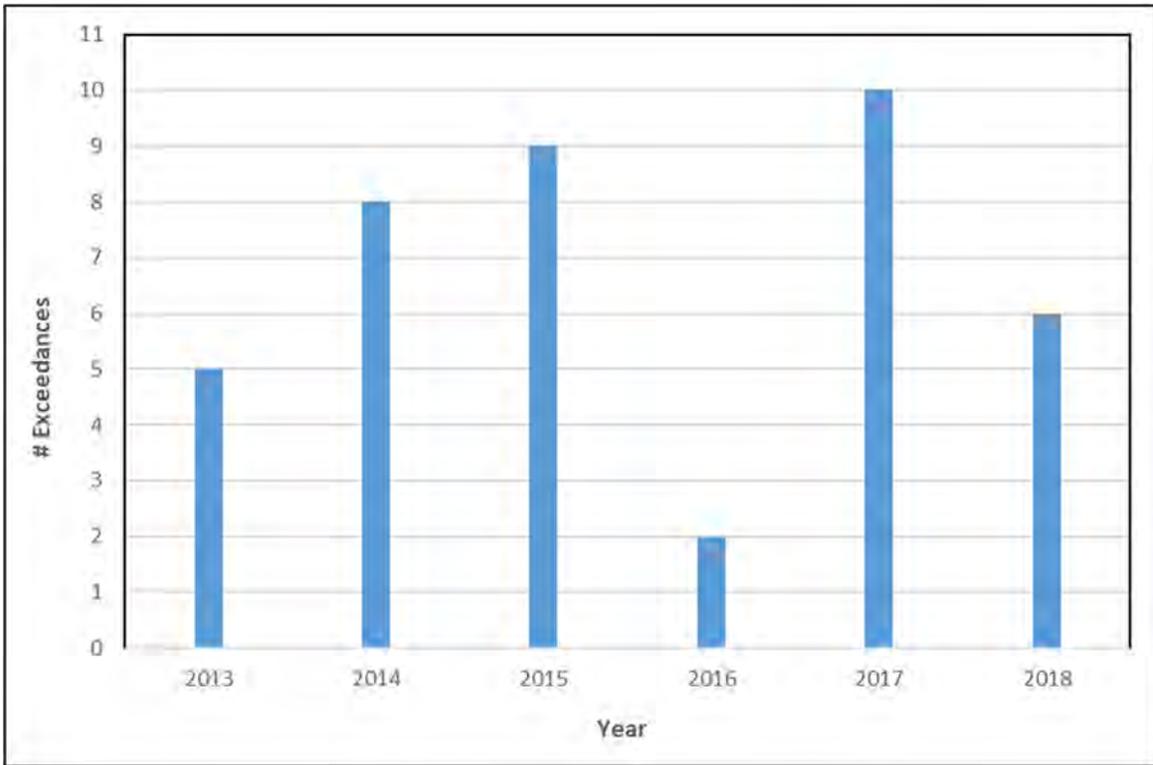


Table A-4 shows the average annual mean of hourly ozone data and average yearly of maximum daily 8-hour ozone values for Yuma monitor for 2014-2018.

Table A-4: Average Ozone Values at Yuma Monitor

Year	Avg. Annual Mean (ppb)	Avg. Yearly Max 8-hour Daily Values (ppb)
2014	38.1	51.7
2015	34.1	46.1
2016	31.8	43.6
2017	32.7	45.1
2018	33.9	45.6

A4 Meteorological Trends

This section examines the meteorological conditions of the Yuma ozone NAA, specifically focusing on trends in wind speed and direction and the possible impact of these conditions on ambient ozone concentrations.

The climatological and meteorological conditions of the Yuma ozone NAA and vicinity are dominated by basin and range topography and its elevation. Yuma has a hot desert climate with severely hot summers and warm winters. Yuma lies in the southwest corner of Arizona in the Sonoran Desert, near the eastern borders of California and north of Mexico. The city is in proximity of the Gulf of California, the Colorado and Gila rivers, and has topography of desert lands, farmlands and mountains.

Meteorological conditions play a critical role in the formation and distribution of ozone. Daytime in the Yuma area is generally conducive to ozone formation because of the near constant heat and sunlight. Average high temperatures in the ozone season from April to October, range from about 86 to 107° Fahrenheit (F), with highest temperatures occurring in July. January is the coolest month with an average daily minimum temperature of 47°F. The climate in Yuma is characterized by a long, hot season, usually beginning in April and ending in October. Precipitation is variable. An annual average of 3.6 inches of rain falls within the region⁷.

To examine the meteorological trends in the Yuma area, ADEQ looked at both diurnal and seasonal average wind speed and direction. ADEQ first looked at diurnal average wind speed and wind direction. To perform this analysis ADEQ averaged wind speeds and directions for each hour of the day for the Yuma Supersite monitor during 01/01/2014 to 12/31/2018. Wind roses were created using 2014-2018 data for the entire time period and exceedance days. The Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) model was also used to perform back trajectory analysis for Yuma ozone monitor. The results are presented in the following sections.

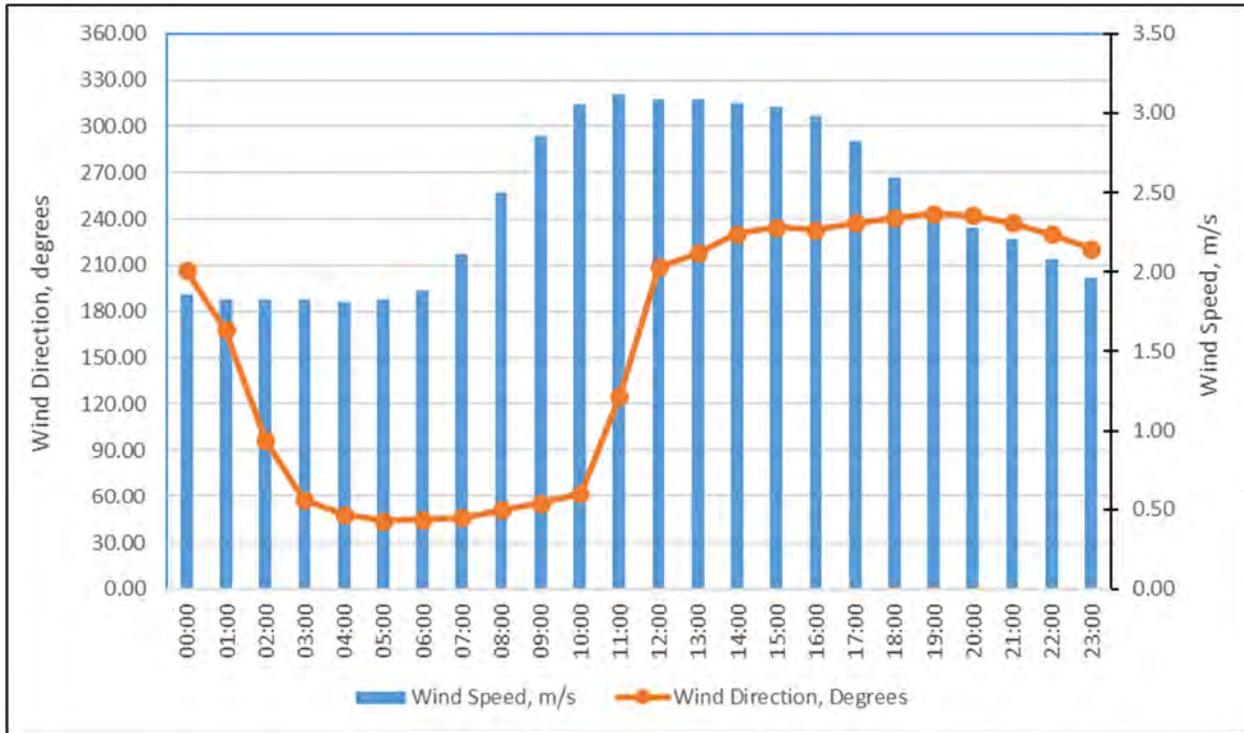
A4.1 Diurnal Wind Speed & Direction

ADEQ averaged wind speed and wind direction data from the Yuma meteorological station for 2014-2018 to create an average profile for the area. These average values were used as the basis for creating the diurnal profile presented in Figure A-6 and Table A-5. Based on this data, the Yuma area generally experiences lower wind speeds at night. In the early morning hours, wind speeds generally increase. Peak wind speeds are observed at noon and early afternoon. Wind speeds decrease in the afternoon hours and evening. Wind direction is generally from the northeast in the morning. During the afternoon and night hours, winds tend to shift and come out of the southwest.

⁷ <https://www.usclimatedata.com/climate/yuma/arizona/united-states/usaz0275>

Because of the abundance of sunlight and heat, higher 8-hour ozone concentrations generally begin around noon, with elevated 1-hour ozone concentrations measured well into the late afternoon, when ambient temperature and sunlight intensity are at their peak.

Figure A-6: Diurnal Average Wind Speed & Direction in Yuma



Wind patterns in Yuma suggest that ozone and ozone precursors can be transported in the morning from the northwest and impact the Yuma monitor. The NOx and VOC rich air mass can become photochemically active during the transport process and begin to produce ozone. Absent the photochemical process at night, or during cloud cover, ozone precursors can accumulate over time and when conditions are right, rapid ozone production can occur.

Table A-5: Diurnal Average Wind Speed & Direction

Hour	Wind Direction (Degrees)	Wind Speed (m/s)
12:00 AM	206.60	1.86
1:00 AM	168.24	1.83
2:00 AM	96.40	1.83
3:00 AM	57.56	1.82
4:00 AM	48.16	1.81
5:00 AM	44.12	1.83
6:00 AM	44.83	1.88
7:00 AM	46.18	2.11
8:00 AM	51.10	2.50
9:00 AM	55.42	2.86
10:00 AM	61.38	3.06
11:00 AM	125.06	3.12
12:00 PM	209.11	3.09
1:00 PM	217.68	3.08
2:00 PM	230.53	3.06
3:00 PM	234.39	3.04
4:00 PM	232.99	2.98
5:00 PM	237.28	2.82
6:00 PM	240.51	2.59
7:00 PM	243.34	2.37
8:00 PM	242.41	2.28
9:00 PM	237.61	2.21
10:00 PM	230.04	2.08
11:00 PM	220.73	1.96

A4.2 Seasonal Wind Speed & Direction

ADEQ averaged wind speed and wind direction data from the Yuma station to create an average profile for the Yuma area. When examining seasonal average wind speed no clear correlation exists. Seasonal average wind speeds in the Yuma area deviate by a small amount (the standard deviation is 1 m/s). The peak wind speeds are observed in late spring and summer, whereas the minimum wind speeds are observed in fall and winter. Seasonal wind direction appears to come out from west-southwest in spring and south-southeast in summer. In fall and winter, the wind direction is from the north. Figure A-7 and Table A-6 show the seasonal profile for wind speed and wind direction in Yuma area.

Figure A-7: Yuma Area Seasonal Average Wind Speed & Direction

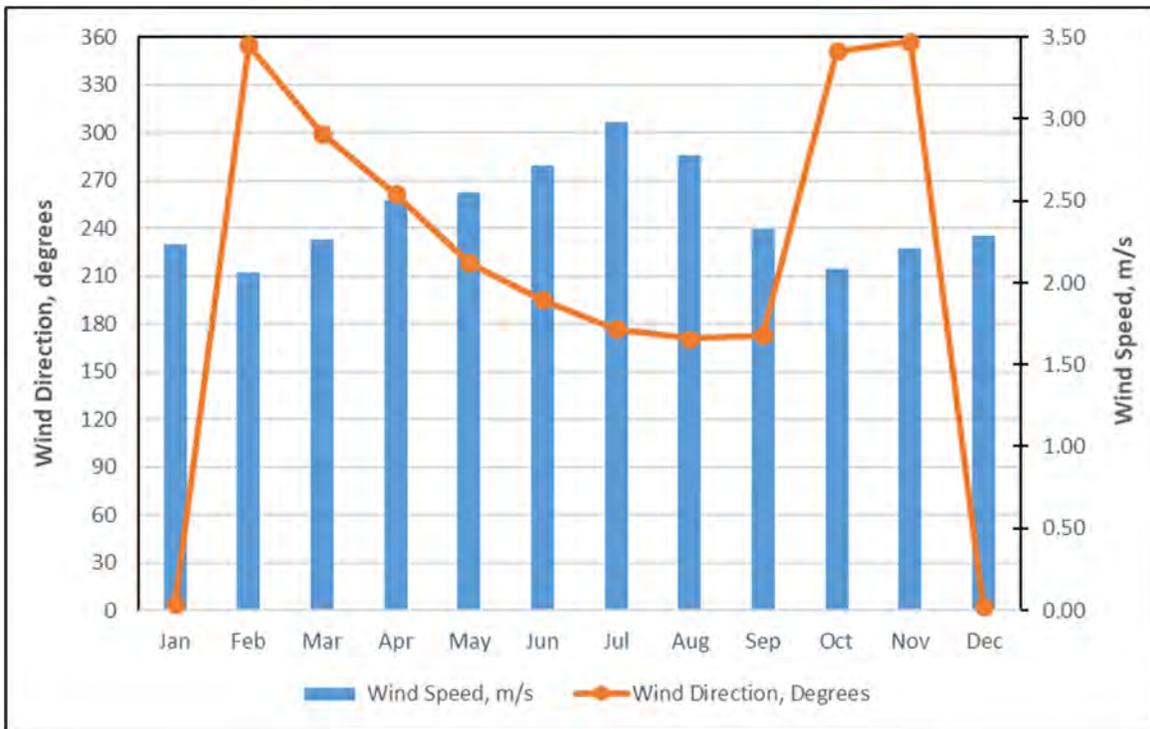


Table A-6: Yuma Area Seasonal Average Wind Speed & Direction

Month	Wind Direction (Degrees)	Wind Speed (m/s)
Jan	3.97	2.23
Feb	355.31	2.06
Mar	299.55	2.26
Apr	261.62	2.50
May	218.34	2.55
Jun	195.14	2.71
Jul	176.83	2.98
Aug	170.50	2.78
Sep	172.85	2.32
Oct	351.13	2.08
Nov	357.21	2.21
Dec	2.33	2.28

A4.3 Wind Roses

Figure A-8 presents the wind rose showing wind patterns at the Yuma Supersite monitor for 2014-2018 wind data. As it is shown, the northerly and southerly winds are more frequent. Northerly winds are more frequent in the winter.

Figure A-8: Yuma Monitor Wind Rose (2014-2018)

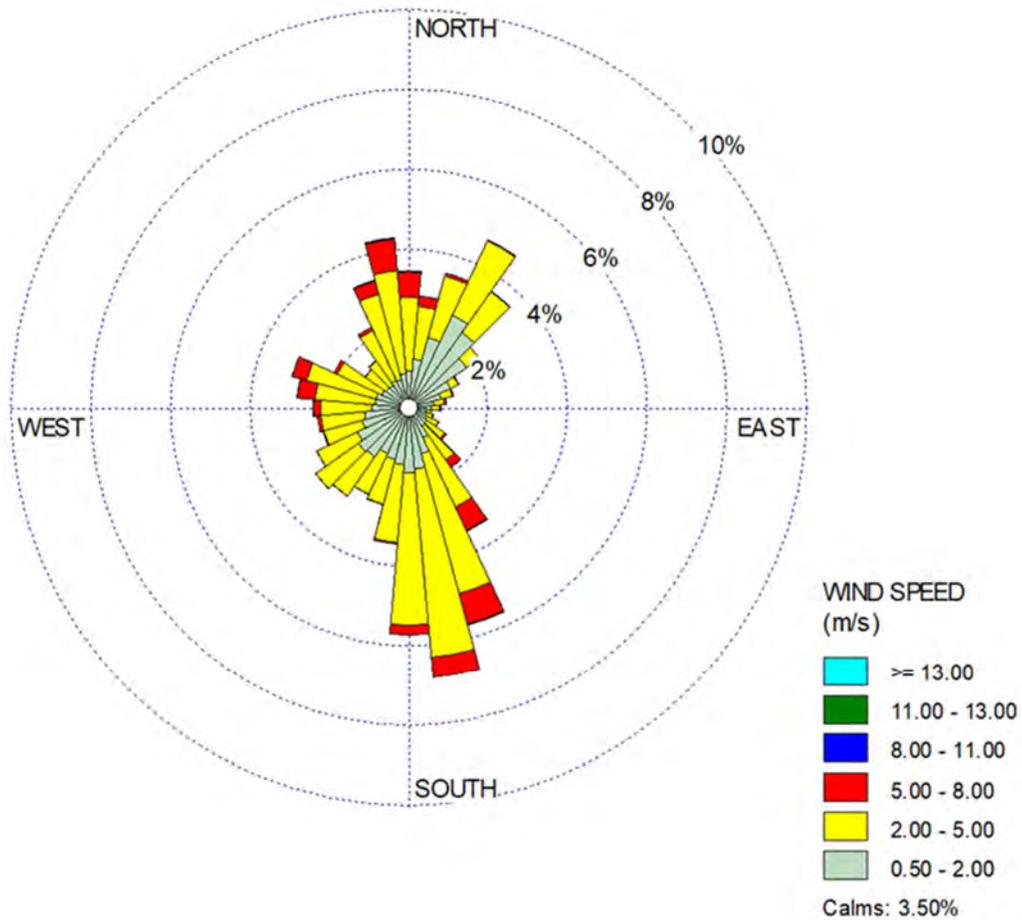
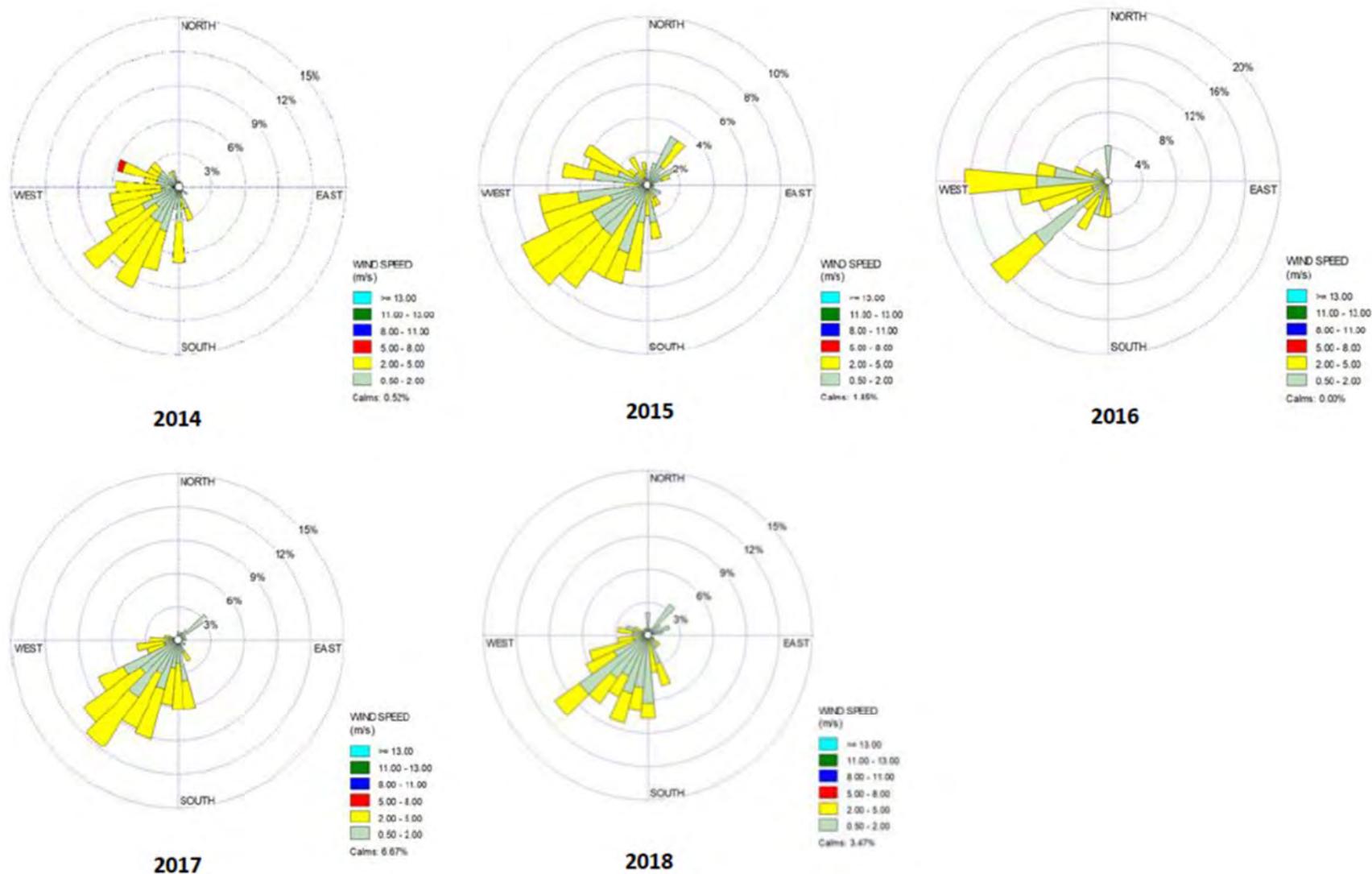


Figure A-9 presents wind roses showing the wind patterns for the exceedance days in 2014-2018 at the Yuma Supersite monitor. The wind roses show a strong pattern of south-southwestern winds during ozone exceedance days.

Figure A-9: Wind Patterns at Yuma Monitor on Exceedance Days (2014-2018)



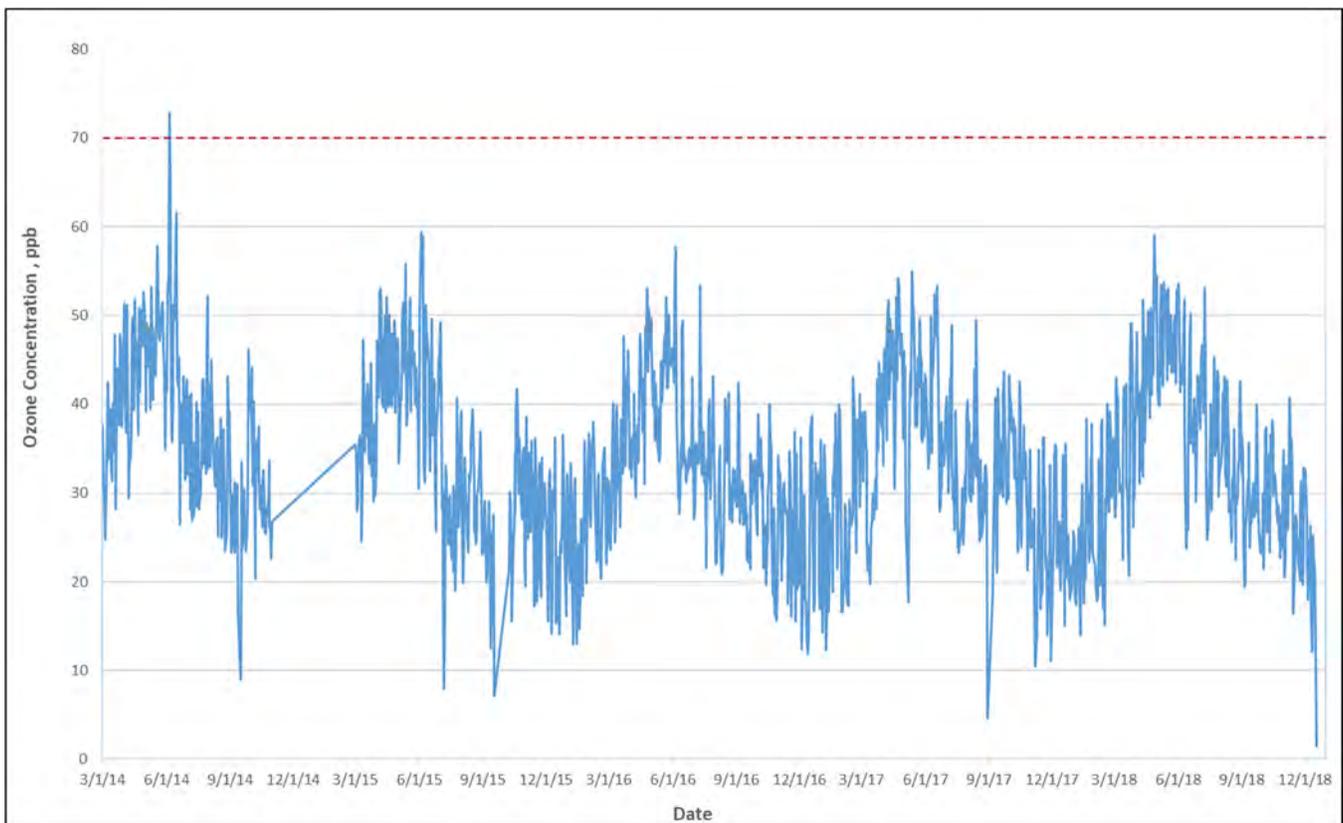
A5 Ambient Ozone Trends

This section examines ambient ozone concentrations in the Yuma area. To examine the ozone concentration trends in the Yuma area, ADEQ looked at daily, diurnal, and seasonal averages from the 2014-2018 ozone data collected at the Yuma Supersite monitor.

A5.1 Daily Average Ozone Concentrations

Figure A-10 presents the daily mean ozone concentrations during 2014-2018 in Yuma. The red dashed line indicates the level of the ozone NAAQS (70 ppb). Based on the recent data, the highest concentrations occur during the spring and summer months. Based on these data, there was only one day in 2014 with the daily average above the standard.

Figure A-10: Daily Average Ozone Concentration at Yuma Monitor⁸

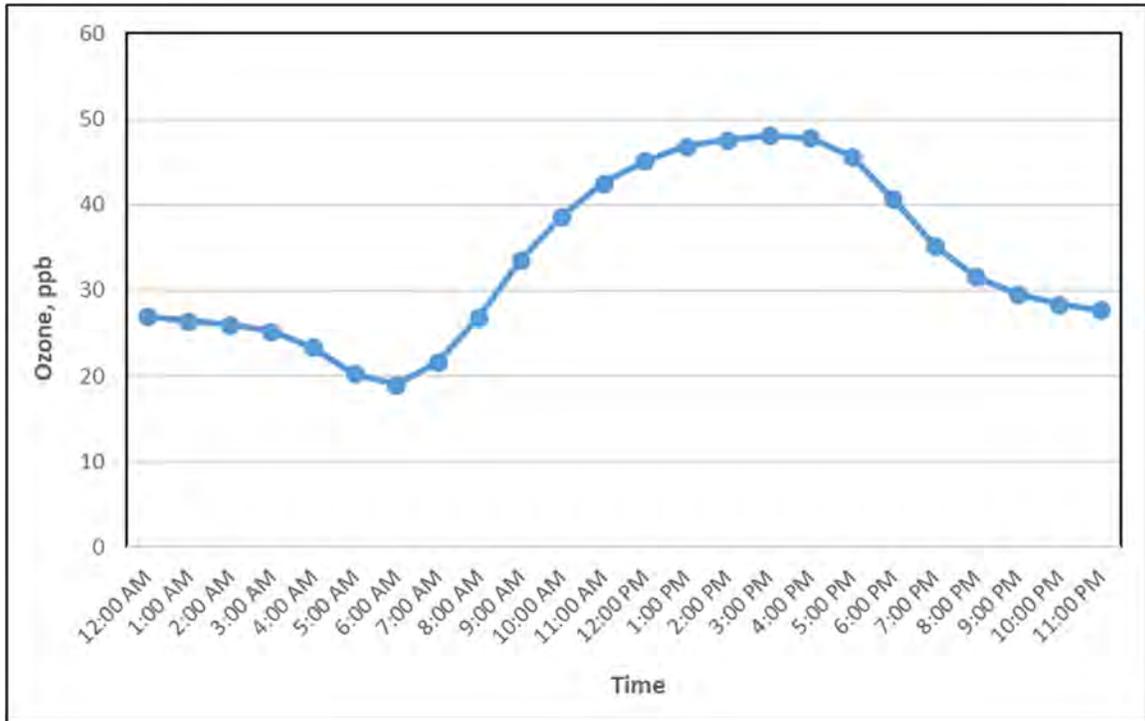


⁸ The jump from September 2014 to March 2015 is due to lack of data for that time period

A5.2 Diurnal Ozone Concentrations

Figure A-11 and Table A-7 show the diurnal average ozone concentrations at Yuma monitor.

Figure A-11: Diurnal Average Ozone Concentrations



As shown above, ozone concentrations increase in the morning, peaking in the afternoon (3-4 pm) and decrease in the evening.

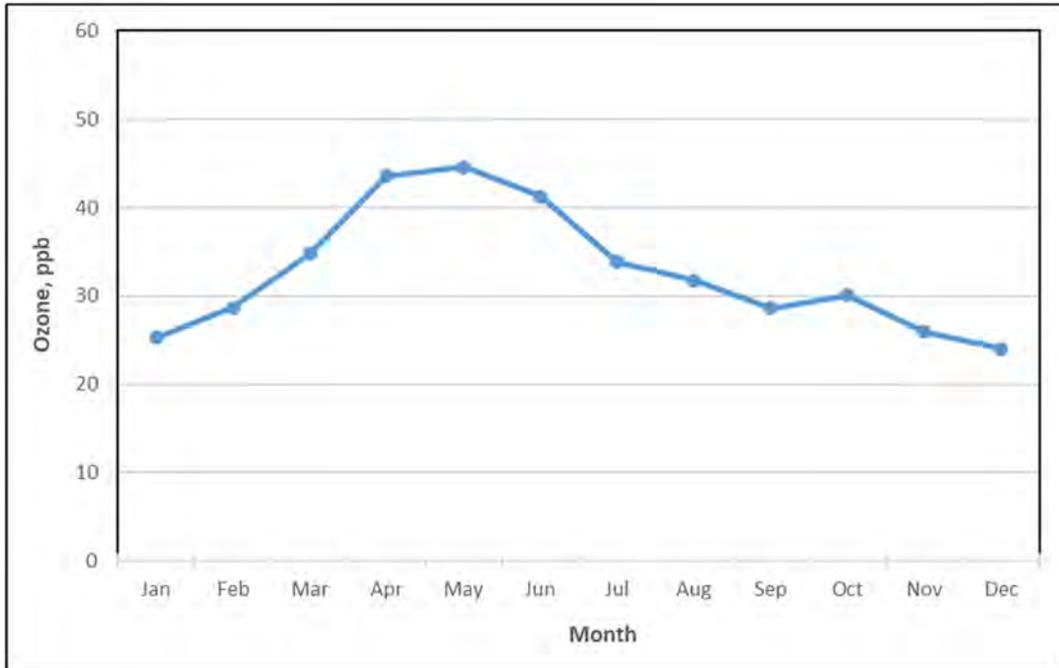
Table A-7: Diurnal Average Ozone Concentration at Yuma Monitor

Hour	Ave. Ozone, ppb
12:00 AM	26.95
1:00 AM	26.42
2:00 AM	26.03
3:00 AM	25.24
4:00 AM	23.42
5:00 AM	20.30
6:00 AM	18.97
7:00 AM	21.61
8:00 AM	26.86
9:00 AM	33.52
10:00 AM	38.65
11:00 AM	42.50
12:00 PM	45.16
1:00 PM	46.81
2:00 PM	47.62
3:00 PM	48.11
4:00 PM	47.82
5:00 PM	45.63
6:00 PM	40.65
7:00 PM	35.23
8:00 PM	31.58
9:00 PM	29.57
10:00 PM	28.37
11:00 PM	27.73

A5.3 Seasonal Ozone Concentrations

Figure A-12 and Table A-8 show the seasonal average ozone concentrations in Yuma. To calculate the seasonal averages, ozone concentrations were averaged for every month of the year.

Figure A-12: Seasonal Average Ozone Concentrations in Yuma



As shown in Figure A-12, higher ozone concentrations are measured in spring and summer (April-August).

Table A-8: Seasonal Average Ozone Concentrations at Yuma Monitor

Month	Ave. Ozone, ppb
Jan	25.25
Feb	28.68
Mar	34.76
Apr	43.55
May	44.55
Jun	41.20
Jul	33.81
Aug	31.74
Sep	28.61
Oct	30.09
Nov	25.91
Dec	23.98

A5.4 HYSPLIT Analysis

The National Oceanic and Atmospheric Administration (NOAA) Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) was used to perform back trajectory analyses for the Yuma Super site monitor. Back trajectories were modeled for all 35 daily maximum 8-hour ozone exceedance days during 2014-2018. An ensemble of back trajectories was run beginning at the end of the 8-hour exceedance ozone day for every preceding 3-hour period for the previous 24 hours.

The National Center for Atmospheric Research (NCAR) reanalysis meteorological dataset was selected for the initial meteorological input to the model. "Model Vertical Velocity" was selected as the method for computing vertical motion. To best represent surface conditions, a starting height for the model was selected at 100 meters above ground level (AGL), and the model was only run for 24 hours backwards. The above method accords with HYSPLIT method suggested in the EPA Guidance on the Area Designations for the 2015 Ozone National Ambient Air Quality Standards⁹.

ADEQ used Openair in conjunction with HYSPLIT to perform additional trajectory analyses. Openair is an R programming language package for air quality data analysis. It was utilized to run a HYSPLIT back trajectory analysis for five full years of data from 2014 to 2018. The model was run to calculate air mass trajectories in the preceding 24 hours starting at 0:00 a.m. Arizona local time for each day during 5 years at the receptor height (assumed to be 10 m). The HYSPLIT model was also driven by the NCAR meteorological dataset. The plots were drawn with seasonal variations. For the season-specific ensembles, March, April and May were considered spring months; June, July and August were treated as summer, September, October and November were treated as fall, and December and the following January and February were treated as winter. Bin concentration and density map plots were created to show the ozone transportation patterns for the Yuma Supersite monitor as a receptor.

Potential Source Contribution Function (PSCF) is a method that links residence time in upwind areas with measured high concentrations through a conditional probability field. PSCF is the conditional probability that an air parcel that passed through a cell had a higher source contribution upon arrival at the monitoring site. PSCF values represent the probability that the emission source locations affect the air quality at the sampling receptor site. The PSCF method was utilized to analyze the five-year back trajectories combined with Yuma Supersite ozone measurement data to identify the potential emissions source for higher ozone concentration events.

Figures A-13 and A-14 show the 24-hour HYSPLIT back trajectories to the Yuma Supersite ozone monitor. The images reflect a trajectory for each hour in the 35 exceedance days between 2014 and 2018. As shown in these figures, air parcels often travel from southern California and portions of northern Mexico to the Yuma supersite on exceedance days. This lends to the

⁹ <https://www.epa.gov/ozone-designations/epa-guidance-area-designations-2015-ozone-naaqs>

understanding that California and Mexico emissions impact the Yuma ozone NAA as the winds transport emissions on higher concentration ozone days. International emission transport and marine vessel emissions can be potential contributors to Yuma ozone concentrations. Some of the air parcels also travel from Phoenix and Tucson area.

Figure A-13: 2014-2018 Ozone Exceedance Days HYSPLIT Back Trajectories at Yuma Monitor

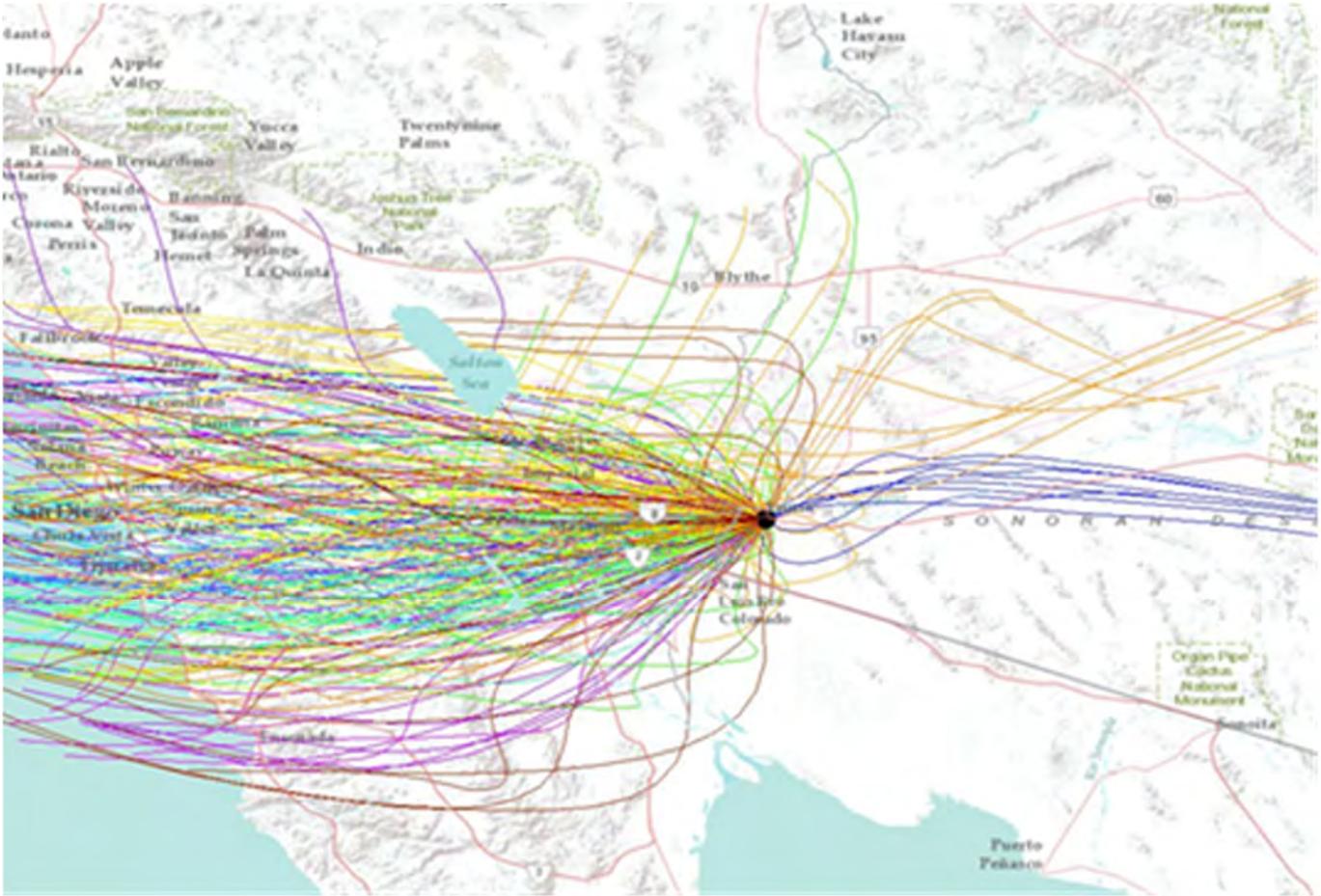


Figure A-14: 2014-2018 Ozone Exceedance Days HYSPLIT Back Trajectories at Yuma Monitor- Broad View

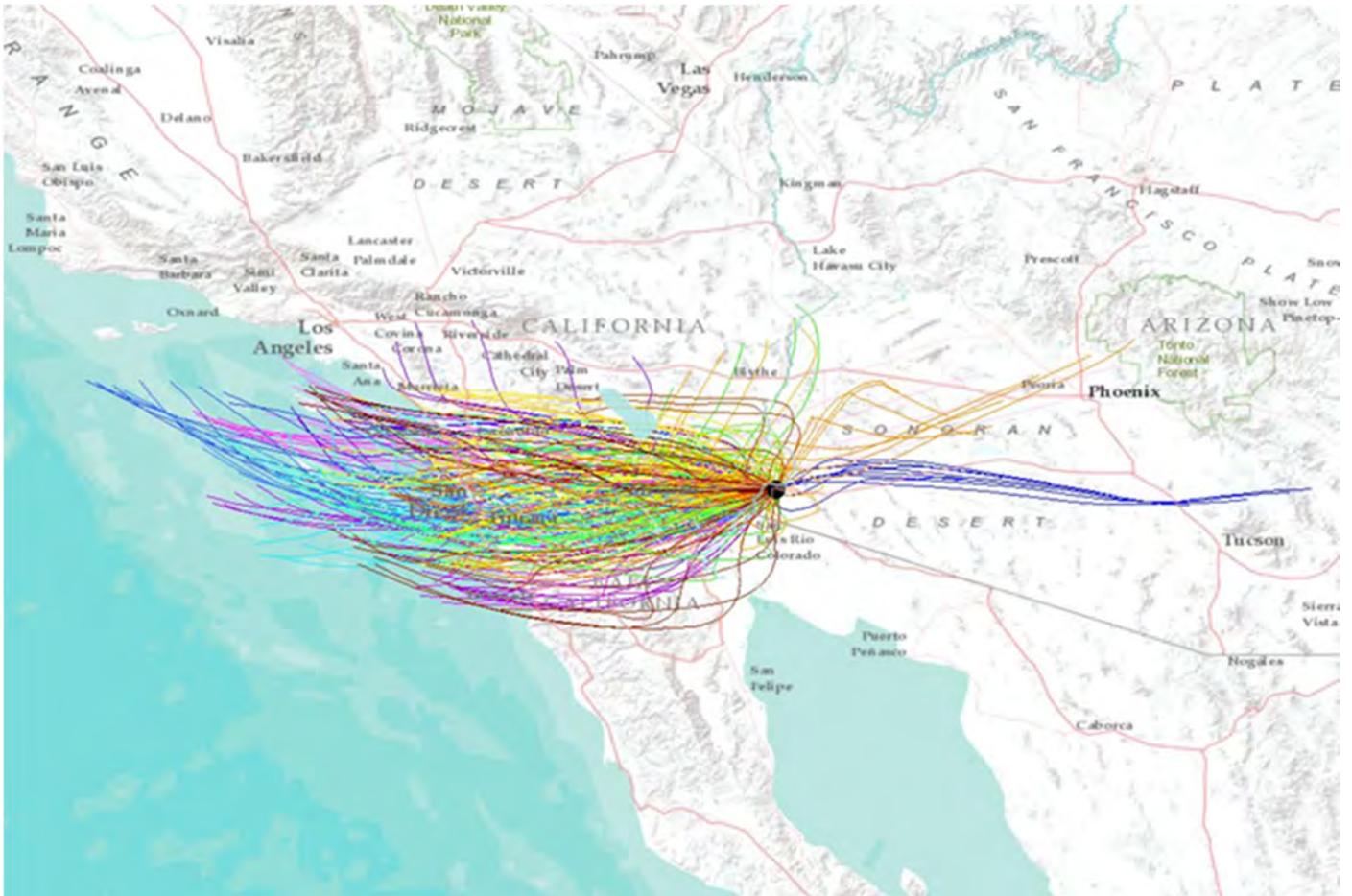


Figure A-15 is a diagram representing HYSPLIT 24 hour back trajectories results of the Yuma Supersite by season. This trajectory is created to represent every hour in a five year period (2014-2018), and color-coded by concentration. This image provides an overall contextual picture of modeled incoming meteorology over the course of a year. It indicates that most of the higher ozone concentration days in the Yuma ozone NAA happened in spring and summer and come from Southern California and Mexico.

Figure A-15: Seasonal Ozone Concentration Specific HYSPLIT Trajectory Map at Yuma Monitor (ppm)

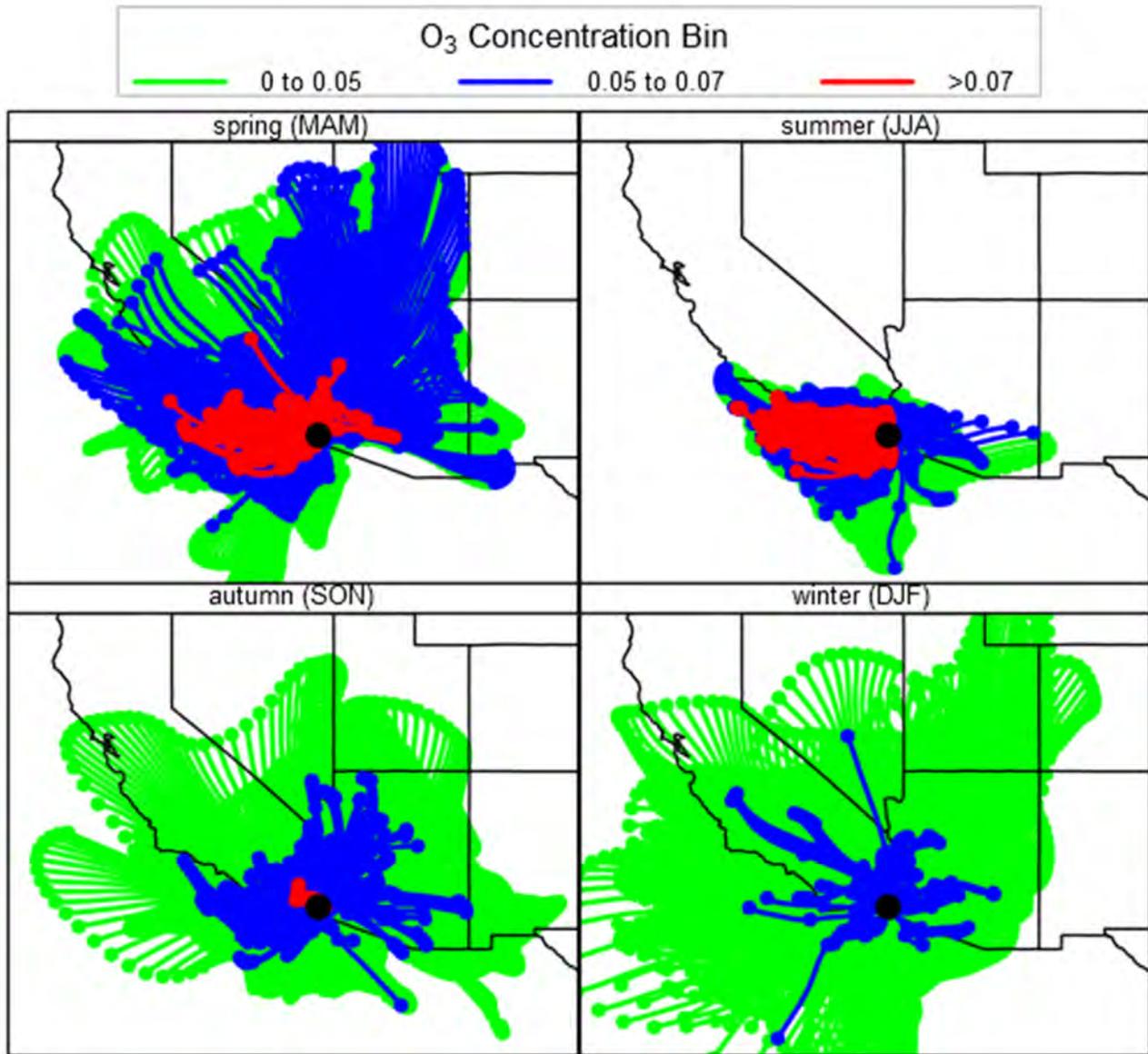


Figure A-16 shows a back-trajectory density analysis of the Yuma Supersite during 2014-2018 by seasons and presents how frequently modeled wind trajectories passed through gridded area sections on their way to Yuma ozone NAA. It indicates that most of ozone pollution is related to regional emissions from southern California, Mexico, and from local sources.

Figure A-16: Seasonal HYSPLIT Density Map for Yuma Monitor

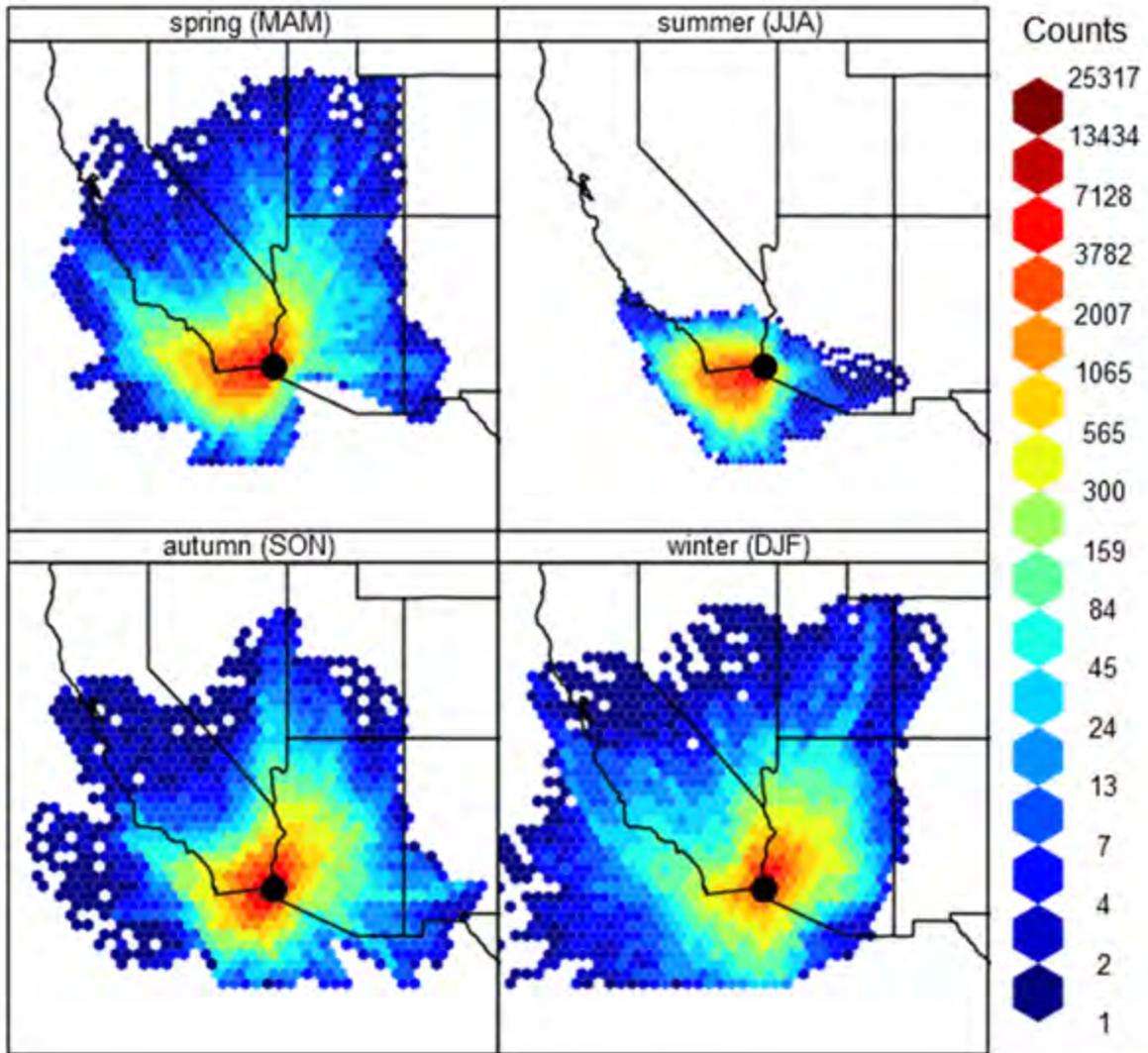
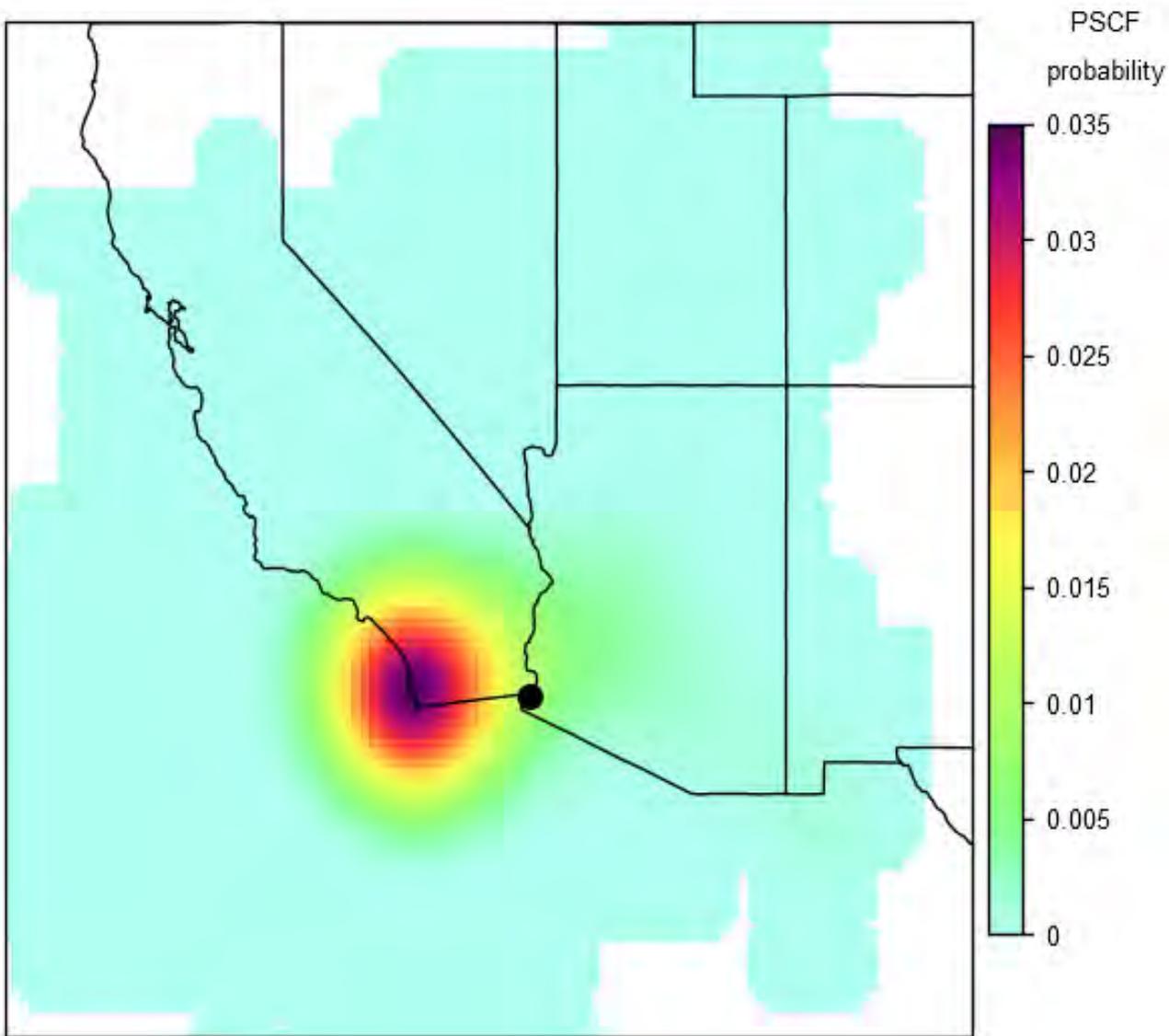


Figure A-17 shows a PSCF analysis plot based on modeled trajectories that passed through gridded area sections on their way to the Yuma Supersite during 2014-2018 and indicates that southern California and Mexico are the potential sources that contribute to the ozone pollutions in Yuma County.

Figure A-17: PSCF Analysis Map for Yuma Monitor



A6 Emission Inventory

A6.1 Point Source Inventory

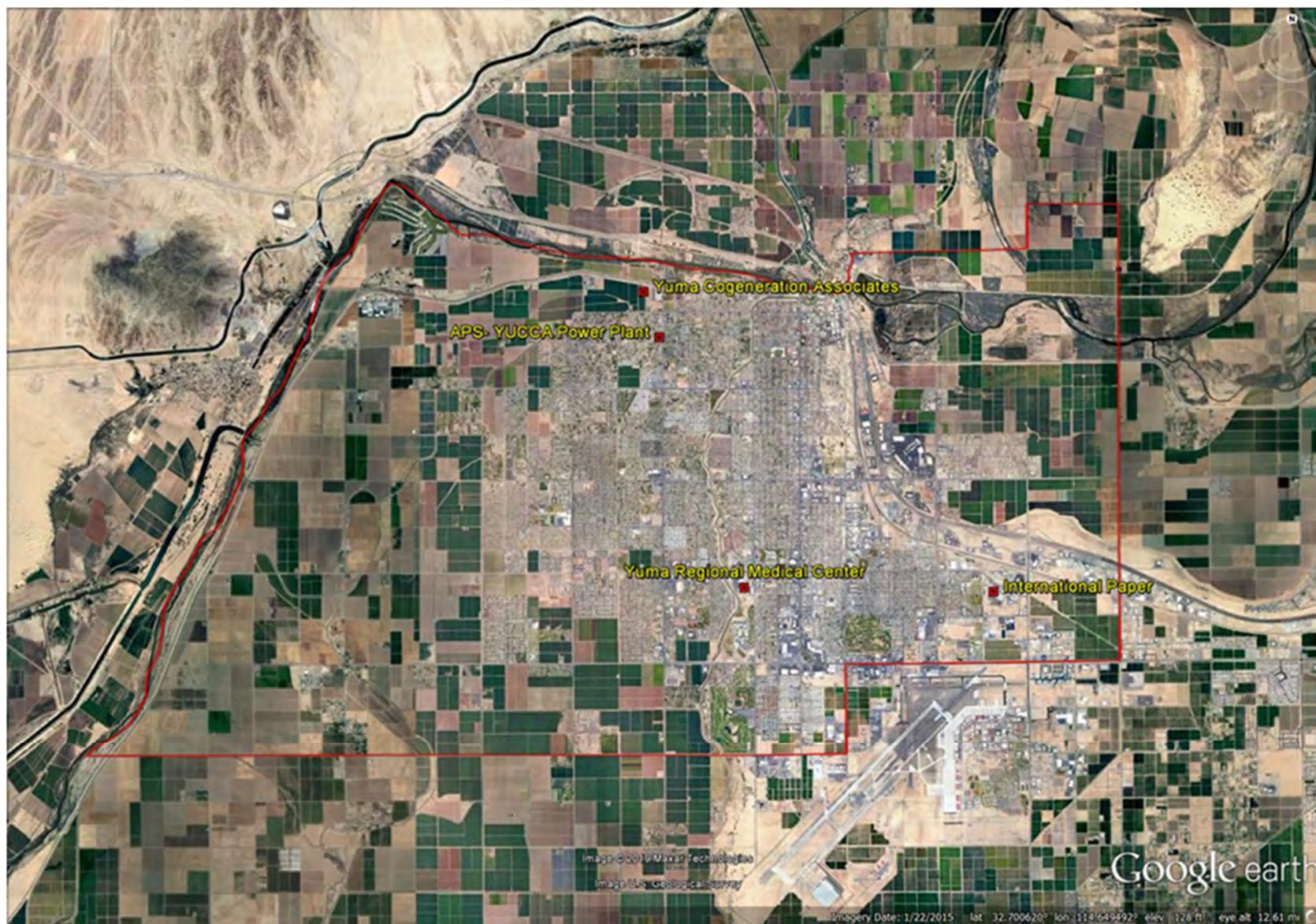
Point sources account for stationary sources of emissions, such as industrial processes, electrical generating units, petroleum product storage and transfer facilities.

ADEQ compiled actual emissions for all permitted point sources within the Yuma ozone NAA in 2017. Because actual point source operating schedules are not known, ozone season day emissions were assumed to be average daily emissions (i.e., annual emissions divided by 365). This is a reasonable assumption because the identified point source operations are not seasonal and were not shut down for significant periods of time during 2017. Table A-9 provides annual and Ozone Season Day (OSD) emissions for point sources in Yuma ozone NAA. Figure A-18 shows the location of the point sources within the ozone NAA.

Table A-9: 2017 Point Source Emissions in Yuma Ozone NAA

Source	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
	NOx	VOC	NOx	VOC
APS- YUCCA Power Plant	176.15	8.51	965.21	46.61
International Paper	4.44	11.3	24.31	60.42
Yuma Cogeneration Associates	8.12	0.31	44.51	1.71
Yuma Regional Medical Center	12.62	0.57	69.14	3.13
Total	201.33	20.42	1103.17	111.88

Figure A-18: Point Source Locations in Yuma Ozone NAA



A6.2 Nonpoint Source Inventory

ADEQ used both top-down and bottom-up approaches to estimate emissions from nonpoint sources. In the bottom-up approach, ADEQ relied on permits, annual emission reports, and other local activity data. In the top-down approach, ADEQ used 2017 NEI county-level emissions and allocated emissions to the ozone NAA by population, area, employment, or other scaling methods.

Population data were obtained from ADOA. Land use data were obtained from Yuma County and ADEQ's internal database and were used as the basis of area allocation method.

Industrial employment allocation methodology involved allocating county-level emissions from industrial processes to the Yuma ozone NAA using the ratio of industrial employment in the NAA to the employment in the county. County-level employment data for different North American Industry Classification System (NAICS) sectors are available from the US Census data, however the employment data for those sectors is not available for the NAA. Thus, ADEQ obtained tract geometry data from US Census¹⁰. The employment information for the sectors were obtained from US Census Bureau, 2010-2017 American Community Survey 5-year estimates¹¹. These data include employment for different categories such as agriculture, mining, manufacturing, wholesale trade, retail trade, transportation, etc. The employment and tract data were combined and imported to ArcGIS map to identify the tracts that are located inside the NAA. To be conservative, the tracts that are partially located in the NAA, are assumed to be fully located inside the NAA. Then, the manufacturing employment data in all tracts that are located in the NAA (fully or partially) were added up and considered as the number of manufacturing employees in the NAA. This value was divided to the number of manufacturing employees in the county to obtain the employment allocation factor that was used in EI calculations for some of the emission sources such as solvent use sectors. Table A-10 shows the allocation methods.

Table A-10: Emissions Allocation Factors

Allocation Method	County	Ozone NAA	Ratio
Population	221,648	98,904	0.45
Industrial Employment	2,881	1,662	0.58
Land Area (square miles)	5,519	52	0.009
Crops Land Area (acres)	228,491	17,856	0.078
Railroad Length (miles)	2,719	489	0.18

¹⁰ https://www2.census.gov/geo/tiger/TIGER2014/TRACT/tl_2014_04_tract.zip

¹¹ https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_14_5YR_S2403&prodT_type=table

A6.2.1 Fuel Combustion

A6.2.1.1 Industrial Fuel Combustion

The preliminary investigations indicated that the industrial fuel combustion was not a major emission source in the Yuma ozone NAA. Therefore, ADEQ applied a top-down method to estimate the emissions for this sector. Annual emissions from residential fuel combustion were derived from the county-level estimates prepared by US EPA for use in the 2017 NEI. Emissions within the 8-hour ozone nonattainment area were calculated by multiplying county totals by the ratio of the total population in the nonattainment area to the total population in the county.

It is assumed that industrial combustion occurs six days per week, and is relatively uniform throughout the year. Thus, annual emissions can be divided by 312 (6 days/week × 52 weeks/year) to derive emissions for an ozone season day in the NAA. Table A-11 shows the emissions estimates for industrial fuel combustion.

Table A-11: Annual and Season-day Emissions from Industrial Fuel Combustion in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		NOx	VOC	NOx	VOC
2102001000	Anthracite Coal	0.00	0.00	0.00	0.00
2102004000	Distillate Oil	22.65	1.51	145.21	9.69
2102005000	Residual Oil	0.00	0.00	0.00	0.00
2102007000	Liquefied Petroleum Gas (LPG)	1.03	0.04	6.63	0.24
2102008000	Wood	0.23	0.02	1.49	0.12
2102011000	Kerosene	0.00	0.00	0.00	0.00
Total		23.92	1.57	153.33	10.05

A6.2.1.2 Commercial/Industrial Fuel Combustion

The preliminary investigations indicated that the commercial fuel combustion was not a major emission source in Yuma ozone NAA. Therefore, ADEQ applied a top-down method to estimate the emissions for this sector. Annual emissions from commercial fuel combustion were derived from the county-level estimates prepared by US EPA for use in the 2017 NEI. Emissions within the 8-hour ozone nonattainment area were calculated by multiplying county totals by the ratio of the total population in the nonattainment area to the total population in the county.

It is assumed that commercial combustion occurs six days per week, and is relatively uniform throughout the year. Thus, annual emissions can be divided by 312 (6 days/week × 52

weeks/year) to derive emissions for an ozone season day in the NAA. Table A-12 shows the emissions estimates for commercial fuel combustion.

Table A-12: Annual and Season-day Emissions from Commercial Combustion in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2103001000	Anthracite Coal	0.00	0.00	0.00	0.00
2103002000	Bituminous/Subbituminous Coal	0.00	0.00	0.00	0.00
2103005000	Residual Oil	0.00	0.00	0.00	0.00
2103006000	Natural Gas	0.60	10.86	3.83	69.60
2103007000	Liquefied Petroleum Gas (LPG)	0.05	1.32	0.31	8.43
2103008000	Wood	0.03	0.39	0.19	2.48
2103011000	Kerosene	0.00	0.00	0.00	0.00
Total		0.68	12.56	4.33	80.52

A6.2.1.3 Residential Fuel Combustion

ADEQ applied a top-down approach to estimate emissions from residential fuel combustion. Annual emissions from residential fuel combustion were derived from the county-level estimates prepared by US EPA for use in the 2017 NEI. Emissions within the 8-hour ozone nonattainment area were calculated by multiplying county totals by the ratio of total the population in the nonattainment area to the total population in the county.

For estimating residential fuel combustion ozone season day emissions, it is assumed these are proportional to heating degree days (HDDs). Ozone season day emissions were calculated by multiplying annual emissions by the fraction of total annual HDDs that occurred during the ozone season (April 1 through October 31). Based on historical weather data for the Yuma Marine Corps Station, there were 79 HDD in 2017, of which 20 occurred during the ozone season¹². The total ozone season emissions were then divided by the number of days in the ozone season (213 days) to obtain ozone season day emissions.

$$\text{Ozone Season Day Emissions} = \text{Annual Emissions} \times \frac{20 \text{ HDD}}{79 \text{ HDD}} \times \frac{1}{213}$$

¹² Weather Data for Energy Saving: <https://www.degreedays.net/>

Table A-13 shows the emissions estimates for residential fuel combustion.

Table A-13: Annual and Season-day Emissions from Residential Fuel Combustion in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2104001000	Anthracite Coal	0.00	0.00	0.00	0.00
2104002000	Bituminous/Subbituminous Coal	0.00	0.00	0.00	0.00
2104004000	Distillate Oil	0.0002	0.0049	0.0005	0.0116
2104006000	Natural Gas	0.62	10.64	1.48	25.29
2104007000	Liquified Petroleum Gas (LPG)	0.26	6.57	0.61	15.61
2104008100	Wood- Fireplace: general	1.85	0.25	4.41	0.61
2104008210	Woodstove: fireplace inserts; non-EPA certified	2.11	0.11	5.02	0.26
2104008220	Woodstove: fireplace inserts; EPA certified; non-catalytic	0.47	0.09	1.11	0.21
2104008230	Woodstove: fireplace inserts; EPA certified; catalytic	0.40	0.05	0.96	0.13
2104008310	Woodstove: freestanding, non-EPA certified	6.01	0.32	14.27	0.75
2104008320	Woodstove: freestanding, EPA certified, non-catalytic	1.33	0.25	3.16	0.60
2104008330	Woodstove: freestanding, EPA certified, catalytic	1.14	0.15	2.72	0.36
2104008400	Woodstove: pellet-fired, general (freestanding or FP insert)	0.03	0.05	0.07	0.12
2104008510	Wood- Furnace: Indoor, cordwood-fired, non-EPA certified	0.15	0.02	0.37	0.06
2104008530	Wood- Furnace: Indoor, pellet-fired, general	0.03	0.05	0.07	0.12
2104008610	Wood- Hydronic heater: outdoor	0.86	0.03	2.05	0.06
2104008620	Wood- Hydronic heater: indoor	0.55	0.02	1.31	0.04
2104008630	Wood- Hydronic heater: pellet-fired	0.0008	0.0014	0.0019	0.0032
2104008700	Wood- Outdoor wood burning device, NEC (fire-pits, chimeas, etc)	3.92	0.54	9.31	1.28
2104009000	Wood- Firelog	2.80	0.54	6.67	1.29
2104011000	Kerosene	0.00	0.00	0.00	0.00
Total		22.54	19.70	53.59	46.82

As this table shows, there was no emissions for anthracite coal, bituminous/subbituminous coal, and kerosene.

A6.2.2 Industrial Processes

A6.2.2.1 Food and Kindred Products

Commercial Cooking

Emissions from commercial cooking were estimated for five types of commercial cooking equipment using county-level estimates from 2017 NEI data and documentation. The equipment types for which emissions were estimated include: chain-driven charbroilers, under-fired charbroilers, deep-fat fryers, flat griddles, and clamshell griddles.

Annual emissions for the ozone NAA were calculated by multiplying the county totals by the ratio of the total population in the NAA to the total resident population in the county.

Commercial cooking activity is assumed to occur uniformly throughout the year. Therefore, average season-day emissions can be developed by dividing the annual emissions by 365 (i.e., ozone season-day emissions are the same as average season-day emissions). Table A-14 shows the emissions estimates for this sector.

Table A-14: Annual and Season-day VOC Emissions from Commercial Cooking

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2302002100	Conveyorized Charbroiling	1.58	8.64
2302002200	Under-fired Charbroiling	3.57	19.56
2302003000	Deep Fat Frying	0.87	4.76
2302003100	Flat Griddle Frying	0.55	2.99
2302003200	Clamshell Griddle Frying	0.02	0.13
Total		6.59	36.09

Bakeries

There was no emissions information for Yuma County's bakeries in 2017 NEI. ADEQ reviewed the emission estimation methodology used in Maricopa County's 2014 periodic emission inventory report and estimated the per capita VOC emissions based on the Maricopa County's annual emissions and population in 2017. The calculated emissions factor (lb/capita-yr) was then multiplied by the population in Yuma ozone NAA to calculate the annual emissions in the NAA.

This sector’s activity is assumed to occur uniformly throughout the year. Therefore, average season-day emissions can be developed by dividing the annual emissions by 365 (i.e., ozone season-day emissions are the same as average season-day emissions). Table A-15 shows the VOC emissions estimates for this sector.

Table A-15: Annual and Season-day VOC Emissions from Bakeries in Yuma Ozone NAA

Maricopa County’s Annual Emissions	130.0	ton/yr
Maricopa Population in 2017	4,327,000	persons
Maricopa VOC Emissions per capita	0.060	lbs/capita-yr
Yuma Ozone NAA Population in 2017	98,904	persons
Yuma Ozone NAA Annual Emissions	5942.9	lbs/yr
Yuma Ozone NAA OSD Emissions	16.3	lb/day

A6.2.3 Solvent Use

This section includes VOC emissions estimates from solvent utilization. The results are summarized in Table A-16 at the end of this section.

A6.2.3.1 Surface Coating

Architectural Coating

VOC emissions from architectural coatings were calculated using a per-capita population emission factor developed and used by EPA for the 2017 NEI Solvent Utilization. The solvent use documentations includes an uncontrolled emission factor of 2.36 lb VOC/person and a controlled emission factor of 1.88 lb VOC/person for architectural coating (SCC 2401001000). Arizona is one of the states that has regulations to limit VOC emissions from solvents. Therefore, the controlled emission factor of 1.88 lb/person was applied to estimate VOC emissions from this sector.

Annual VOC emissions for architectural coating for the ozone NAA was calculated by multiplying the per-capita emission factor by the nonattainment area population value.

Ozone season-day emissions were developed using default assumptions from Emission Inventory Improvement Program (EIIP), Volume III: Chapter 3¹³. The seasonal factor for ozone season architectural coating activity is assumed to be 28 percent of annual activity. Assuming that coating use may take place 7 days a week during the ozone season, season-day emissions will be calculated by multiplying annual VOC emissions by the seasonal factor (28%) and then dividing the results by the number of days per ozone season (213).

¹³ <https://www.epa.gov/sites/production/files/2015-08/documents/archsfc.pdf>

Auto Refinishing

VOC emissions from auto refinishing were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

Activity for this source category is assumed to occur uniformly throughout the year and take place 7 days per week. Thus, season-day emissions were estimated by dividing annual emissions by 365 days/year.

Traffic Markings

VOC emissions from traffic markings were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

The seasonal activity factor for the ozone season is assumed to be 33 percent of the annual activity. Also, the activity typically takes place 5 days a week during the active season¹⁴. Therefore, ozone season day for the NAA was calculated by multiplying the annual emissions by 0.33 and then dividing by the number of activity days during the ozone season. The ozone season is 30 weeks and 3 days. Assuming 5 days per week activity, there will be 158 activity days in the season.

Factory-finished Wood

VOC emissions from factory finished wood were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Wood Furniture

VOC emissions from wood furniture activity were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

¹⁴ EIIP, Volume III, Chapter 14: <https://www.epa.gov/sites/production/files/2015-08/documents/iii14.pdf>

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Machinery and Equipment

VOC emissions from machinery and equipment were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Motor Vehicles

VOC emissions from motor vehicles were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Industrial Maintenance Coating

VOC emissions from industrial maintenance coating were calculated using a per-capita population emission factor developed and used by EPA for the 2017 NEI Solvent Utilization Documentation. The solvent tool documentation includes a controlled emission factor of 0.36 lb VOC/person (SCC 2401100000).

Annual emissions for the ozone NAA were calculated by multiplying the emission factor by the population in the NAA. It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Aircraft Surface Coating

VOC emissions aircraft surface coating were calculated using a per-employee emission factor developed and used by EPA for the 2017 NEI Solvent Utilization Documentation. The solvent tool documentation includes an uncontrolled emission factor of 15.4 lb VOC/employee (SCC 2401075000).

Annual emissions for the ozone NAA were calculated by multiplying the emission factor by the number of industrial employees in the NAA. It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Miscellaneous Surface Coating

VOC emissions from miscellaneous surface coating activities were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

Other Special Purpose Coatings

VOC emissions from other special purpose coating activities were calculated using a per-capita population emission factor developed and used by EPA for the 2017 NEI Solvent Utilization Documentation. The solvent tool documentation includes an emission factor of 0.01 lb VOC/person (SCC 2401200000).

Annual emissions for the ozone NAA were calculated by multiplying the emission factor by the population in the NAA. It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

A6.2.3.2 Degreasing

VOC emissions from degreasing activities were calculated using a per-employee emission factor developed and used by EPA for the 2017 NEI Solvent Utilization Documentation. The solvent tool documentation includes an emission factor of 32.36 lb VOC/person (SCC 2415000000).

Annual emissions for the ozone NAA were calculated by multiplying the emission factor by the number of employees in the NAA. It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

A6.2.3.3 Graphic Arts

VOC emissions from degreasing activities were calculated using 2017 NEI county emissions information. The emissions for the ozone NAA were calculated using the ratio of population in the NAA to the county population. The solvent utilization tool was not used to estimate emissions from this sector because using the solvent tool's emission factor resulted in emissions that were much higher than the total county emissions documented in the NEI.

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365.

A6.2.3.4 Consumer and Commercial Products

Annual emissions from consumer and commercial products were calculated using a per-capita emission factor developed and used by EPA for the 2017 NEI Solvent Utilization Documentation. Consumer and commercial products include the following seven product categories: personal care products, household products, automotive aftermarket products, adhesives and sealants, products regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), coatings and related products, and miscellaneous products.

Emissions from consumer and commercial products are assumed to occur uniformly throughout the year, and occurs 7 days per week. Thus season-day emissions were estimated by dividing annual emissions by 365.

A6.2.3.5 Asphalt Application

Asphalt is applied to pave, seal, and repair surfaces such as roads, parking lots, drives, walkways, roofs, and airport runways. Asphalt application emissions were derived from the county level estimates prepared by US EPA for use in the 2017 NEI for the two types of asphalt: cutback and emulsified. County level emissions can be scaled down to ozone NAA emissions using the ratio of Vehicle Miles Traveled (VMT) in the NAA to VMT in Yuma County. Since the VMT information was not available for the NAA, the population was used to allocate county level emissions to the NAA.

It is assumed that this activity occurs uniformly throughout the year and 7 days per week. Thus, season day emissions were estimated by dividing annual emissions by 365. A summary of VOC emissions from solvent utilization in the ozone NAA is presented in Table A-16.

Table A-16: Annual and Season-day Emissions from Solvent Utilization in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2401001000	Architectural Coating	92.97	244.43
2401005000	Auto Refinishing	16.36	89.63
2401008000	Traffic Markings	7.37	30.77
2401015000	Factory Finished Wood	0.32	1.75
2401020000	Wood Furniture	0.69	3.77
2401055000	Machinery and Equipment	0.84	4.62
2401070000	Motor Vehicles	0.61	3.33
2401100000	Industrial Maintenance Coating	17.80	97.55
2401075000	Aircraft Surface Coating	0.02	0.10
2401090000	Miscellaneous Surface Coating	1.42	7.77
2401200000	Other Special Purpose Coating	0.49	2.71
2415000000	Degreasing	26.89	147.35
2425000000	Graphic Arts	49.55	271.52
2460100000	Personal Care Products	203.27	1113.80
2460200000	Household Products	206.99	1134.18
2460400000	Automotive Aftermarket Products	19.61	107.44
2460600000	Adhesive and Sealants	189.27	1037.11
2460800000	FIFRA Related Products	184.71	1012.08
2460500000	Coating and Related Products	98.58	540.16
2460900000	Misc. Products	7.26	39.80
2461021000	Cutback Asphalt Application	38.40	210.39
2461022000	Emulsified Asphalt Application	72.71	398.40
Total		1236.13	6498.66

A6.2.4 Dry Cleaning

ADEQ applied a bottom-up methodology to estimate VOC and NOx emissions from dry cleaning sources in the nonattainment area. Information from permits and annual reports submitted by facilities were used for emissions calculation. Based on operating schedule information provided in the facilities' historic annual emissions reports, it is assumed that operations occur evenly throughout the year, 5 days per week, thus, season-day emissions will be derived by dividing the

annual total emissions by 260 (5 days/week × 52 weeks/yr). Table A-17 shows the emissions results for this sector.

Table A-17: Annual and Season-day Emissions from Dry Cleaning in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2420000000	Dry Cleaning	0.0045	0.0831	0.035	0.639

A6.2.5 Agricultural Pesticides Application

Annual emissions from agricultural pesticide usage within Yuma County were obtained from the county-level emission estimates developed using the US EPA 2017 NEI data and documentation.

Annual emissions for the ozone NAA were calculated by multiplying county totals by the ratio of agricultural land acreage in the nonattainment area to the agricultural land acreage in Yuma County. Ozone season day emissions were calculated by dividing annual emissions by 365 days as activity is assumed to occur uniformly throughout the year. Table A-18 shows the estimated VOC emissions for this sector.

Table A-18: Annual and Season-day VOC Emissions from Agricultural Pesticide Applications in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2461855000	Agricultural Pesticide Application	51.60	282.74

A6.2.6 Storage and Transport

A6.2.6.1 Portable Fuel Containers

Annual Yuma County emissions from portable fuel containers were obtained from the county-level emission estimates developed for use in the U.S. EPA 2017 NEI.

Annual emissions for the ozone NAA were calculated by multiplying the county totals by the ratio of population in the nonattainment area to the total population in the county. Ozone season day

emissions were calculated by dividing annual emissions by 365 days as activity is assumed to occur uniformly throughout the year. Table A-19 shows the emissions estimates for this sector.

Table A-19: Annual and Season-day VOC Emissions from Residential and Commercial Portable Fuel Containers

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
Residential Portable Gas Cans:			
2501011011	Permeation	1.68	9.19
2501011012	Evaporation (includes diurnal losses)	1.88	10.31
2501011013	Spillage During Transport Refilling at the Pump- Vapor	3.26	17.88
2501011014	Displacement	0.59	3.24
2501011015	Refilling at the Pump- Spillage	0.10	0.52
Commercial Portable Gas Cans:			
2501012011	Permeation	0.07	0.40
2501012012	Evaporation (includes diurnal losses)	0.06	0.33
2501012013	Spillage During Transport Refilling at the Pump- Vapor	4.45	24.40
2501012014	Displacement	1.71	9.35
2501012015	Refilling at the Pump- Spillage	0.18	1.00
Total		13.98	76.63

A6.2.6.2 Bulk Plants

Annual Yuma County emissions from gasoline bulk plants evaporative losses were obtained from the county-level emission estimates developed for use in the U.S. EPA 2017 NEI.

Annual emissions for the ozone NAA were calculated by multiplying the county totals by the ratio of population in the nonattainment area to the total population in the county. Ozone season day emissions were calculated by dividing annual emissions by 365 days as activity is assumed to occur uniformly throughout the year. Table A-20 shows the VOC emissions estimates for this sector.

Table A-20: Annual and Season-day VOC Emissions from Bulk Plants in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2501055120	Gasoline Bulk Plants: All Evaporative Losses	0.03	0.15

A6.2.6.3 Bulk Terminals

Annual Yuma County emissions from gasoline bulk terminals were obtained from the county-level emission estimates developed for use in the U.S. EPA 2017 NEI.

Annual emissions for the ozone NAA were calculated by multiplying the county totals by the ratio of population in the nonattainment area to the total population in the county. Ozone season day emissions were calculated by dividing annual emissions by 365 days as activity is assumed to occur uniformly throughout the year. Table A-21 shows the VOC emissions estimates for this sector.

Table A-21: Annual and Season-day VOC Emissions from Bulk Terminals in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2501050120	Gasoline Bulk Terminals: All Evaporative Losses	43.82	240.12

A6.2.6.4 Gasoline Service Stations

Stage I emissions from gasoline distribution emissions are generated when gasoline vapors are displaced from storage tanks during unloading of gasoline from tank trucks at service stations. Stage II emissions are the refueling emissions that occur during the transfer of gasoline from storage tanks at service stations to vehicle fuel tanks (i.e., vehicle refueling and spillage emissions). These Stage II emissions will be included in on-road mobile emission estimations and are not addressed here as an area source. Stage I VOC emissions from gasoline service station unloading were derived from the county level estimates prepared by US EPA for use in the NEI for 2017.

Annual emissions in the ozone NAA were calculated by multiplying the county emissions by the ratio of population in the NAA to the population in the county. Ozone season-day emissions were

calculated by dividing annual emissions by 365 as activity is assumed to occur uniformly throughout the year. Table A-22 shows the VOC emissions estimates for this sector.

Table A-22: Annual and Season-day VOC Emissions from Gasoline Service Stations in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2501060051	Stage 1: Submerged Filling	148.62	814.38
2501060052	Stage 1: Splash Filling	0.00	0.00
2501060053	Stage 1: Balanced Submerged Filling	0.00	0.00
Total		148.62	814.38

A6.2.6.5 Gasoline Stations Underground Tanks, Breathing/Emptying

Breathing losses are the release of vapor from a tank vapor space that have expanded or contracted because of daily changes in temperature and barometric pressure; these emissions occur in the absence of any liquid level change in the tank. Emptying losses occur when the air that is drawn into the tank during liquid removal saturates with hydrocarbon vapor and expands, thus, exceeding the fixed capacity of the vapor space and overflowing through the pressure vacuum valve.

The breathing/emptying emissions from gasoline service station unloading were derived from the county-level estimates prepared by US EPA for use in the NEI for 2017. Annual emissions in the ozone NAA were calculated by multiplying the county emissions by the ratio of population in NAA to population in the county. Ozone season-day emissions were calculated by dividing annual emissions by 365 as activity is assumed to occur uniformly throughout the year. Table A-23 shows the VOC emissions estimates for this sector.

Table A-23: Annual and Season-day VOC Emissions from Gasoline Stations Underground Tanks, Breathing/Emptying in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2501060201	Gasoline Underground Tank: Breathing and Emptying	22.29	122.15

A6.2.6.6 Gasoline Tank Trucks in Transit

Emissions from tank trucks in transit occur when gasoline vapor evaporates from (1) loaded tank trucks during transportation of gasoline from bulk terminals/plants to service stations, and (2) empty tank trucks returning from service stations to bulk terminals/plants. Annual VOC emissions

from gasoline trucks in transit were derived from the county-level estimates prepared by US EPA for use in the NEI for 2017.

Annual emissions in the ozone NAA were calculated by multiplying the county emissions by the ratio of population in NAA to population in the county. Ozone season-day emissions were calculated by dividing annual emissions by 365 as activity is assumed to occur uniformly throughout the year. Table A-24 shows the VOC emissions estimates for this sector.

Table A-24: Annual and Season-day VOC Emissions from Gasoline Tank Trucks in Transit in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2505030120	Gasoline Transport- Trucks	1.46	7.99

A6.2.6.7 Pipeline Gasoline

Pipeline emissions result from the valves and pumps found at pipeline pumping stations and from the valves, pumps, and storage tanks at pipeline breakout stations. Annual VOC emissions from gasoline pipelines were derived from the county-level estimates prepared by US EPA for use in the NEI for 2017.

Annual emissions in the ozone NAA were calculated by multiplying the county emissions by the ratio of population in the NAA to the population in the county. Ozone season-day emissions were calculated by dividing annual emissions by 365 as activity is assumed to occur uniformly throughout the year. Table A-25 shows the VOC emissions estimates for this sector.

Table A-25: Annual and Season-day VOC Emissions from Pipeline Gasoline in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2505040120	Gasoline Transport- Pipeline	10.89	59.66

A6.2.7 Waste Treatment and Disposal

A6.2.7.1 Open Burning

Open burning activity includes yard waste burning, land clearing burns, and household waste burns. These activities are permitted by the City of Yuma Fire Department and Yuma County Rural Metro Fire Department. ADEQ obtained the permits that were issued in 2017. However, these permits did not include all the information that was needed to calculate the emissions. ADEQ

obtained the number of all burn activities in the county from the permits and identified the number of burn activities in the ozone NAA based on the addresses on the permits. Based on these information, the percentage of total burn activities that occurred in the ozone NAA was calculated. This factor was used to allocate the total county emissions to the ozone NAA. Emissions estimates from permitted burn activity were multiplied by a factor of 2.87 to account for unpermitted outdoor burning¹⁵.

To estimate season-day emissions, it is assumed that activities normally occur, on average, 5 days per week. Thus, season-day emissions will be calculated by dividing total ozone-season emissions by 180 (5 days/week × 30 weeks/ozone season). Table A-26 shows the emissions estimates for this sector.

Table A-26: Annual and Season-day Emissions from Open Burning Activities in the Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2610030000	Open Burning - Residential	2.54	2.43	28.20	27.05
2610000100, 2610000400, 2610000500	Open Burning- All Categories	103.42	3.83	1149.17	42.55
Total		105.96	6.26	1177.37	69.60

A6.2.7.2 Publicly Owned Wastewater Treatment Plants

Annual emissions from publicly owned treatment works (POTWs) in Yuma County were obtained from the US EPA 2017 NEI. Annual emissions for the ozone NAA were calculated by multiplying the county emission totals by the ratio of the total population in the nonattainment area to the total population in the Yuma County.

Ozone season-day emissions were calculated by multiplying annual emissions by a 35% season adjustment factor (US EPA, 2001a) and then dividing by 213 days per season. Table A-27 shows the emissions estimates for this sector.

¹⁵ Maricopa County 2014 Periodic Emissions Inventory for Ozone Precursors:
<https://www.maricopa.gov/DocumentCenter/View/20712/2014-Periodic-Emissions-Inventory-Ozone-PDF?bidId=>

Table A-27: Annual and Season-day VOC Emissions from Publicly Owned Wastewater Treatment Plants in the Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2630020000	Wastewater Treatment Plants	0.77	2.52

A6.2.7.3 Composting

ADEQ identified one composting facility in the ozone NAA named Blue Sky Burning and Recycling LLC that produces compost from yard and agricultural trimming materials. ADEQ estimated the VOC emissions for this facility using the throughput data obtained from the facility and the uncontrolled VOC emissions factor obtained from South Coast Air Quality Management District’s (AQMD) Guidelines for Calculating Emissions from Greenwaste Composting and Co-Composting Operations. The average materials throughput was 125 cubic yard per day. ADEQ used EPA’s Volume-to-Weight Conversion Factors document to convert the daily cubic yards of materials to daily pounds. The materials are assumed to be mostly yard prunings and trimmings. The main parameters used to calculate emissions are as follows:

- Throughput: 125 cubic yard/day
- Estimated Weight of each Cubic Yard of Prunings and Trimmings: 127 lbs
- Greenwaste Composting VOC Emissions Factor: 4.67 lbs/ton of throughput

The facility did not provide their operation schedule, so it was assumed that the activity is uniform throughout the year (365 days). Table A-28 shows the emission estimates for this sector.

Table A-28: Annual and Season-day Emissions from Composting in Yuma Ozone NAA

SCC	Description	Annual VOC Emissions (ton/yr)	OSD VOC Emissions (lb/day)
2680003000	Composting	6.76	37.07

A6.2.8 Miscellaneous Area Sources

A6.2.8.1 Agricultural Field Burning

Agricultural field burning activities in the area are permitted by City of Yuma and Yuma County Rural Metro Fire Department. ADEQ obtained the permits that were issued in 2017. However, the permits did not include sufficient information to calculate the emissions. ADEQ used 2017

NEI emissions for the Yuma County and allocated the emissions to the ozone NAA by the ratio of agricultural land in the ozone NAA to the agricultural land in the county. To estimate season-day emissions, it is assumed that activities normally occur, on average, 5 days per week. Thus, season-day emissions were calculated by dividing total ozone-season emissions by 180 (5 days/week × 30 weeks/ozone season). Table A-29 shows the emissions estimates for this sector.

Table A-29: Annual and Season-day Emissions from Agricultural Field Burning in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2801500000	Agricultural Field Burning	4.84	1.13	53.73	12.57

A6.2.8.2 Agriculture Production

Based on the information obtained from ADEQ’s Concentrated Animal Feeding Operations (CAFO) permitting staff in Aquifer Protection Permit (APP) and Arizona Pollutant Discharge Elimination System (AZPDES) units and Arizona Department of Agriculture, there are no animal feeding operations in the ozone NAA. Therefore, the emissions from this sector is assumed to be zero.

A6.2.8.3 Residential Grilling

Annual emission estimates from backyard barbeques (i.e., residential charcoal grilling) for Yuma County were obtained from the county-level estimates prepared for use in US EPA’s 2017 NEI data and documentation. Annual emissions for the ozone NAA were calculated by multiplying the county emission totals by the ratio of total population in the nonattainment area to the total population in the Yuma County.

According to Maricopa County’s 2014 periodic emissions inventory report for ozone precursors, the temporal allocation data indicated equal allocation across the year for residential charcoal grilling source category (SCC 2810025000). Based on this information, ozone season day emissions can be calculated by dividing the 2017 annual emissions by 365. Table A-30 shows the emissions estimates for this sector.

Table A-30: Annual and Season-day Emissions from Residential Grilling in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2810025000	Residential Grilling	1.38	0.36	7.53	1.98

A6.2.8.4 Cremation

Human cremation emissions were estimated using the NOx and VOC emission factors and average body weight from the 2017 NEI. For human cremations, ADEQ obtained the number of deaths in Yuma County in 2017 from the Arizona Department of Health Services and estimated the deaths in the ozone NAA based on population ratio. Data on cremation (%cremation) was obtained from the National Funeral Directors Association (NFDA) for 2014. The parameters used in the calculations are listed below:

- Average body weight: 168 lb
- %cremation in Yuma County: 66.1%
- 2017 deaths in Yuma County: 1491
- VOC emission factor: 0.299 lb/ton cremated
- NOx emission factor: 3.56 lb/ton cremated
- Population ratio in the ozone NAA to the county: 0.4462

The emissions were estimated by multiplying the number of deaths in the ozone NAA by the percentage of cremation, average body weight, and the emission factor.

Animal cremation emissions were estimated using 2017 NEI data for the Yuma County. The NAA emissions were estimated using the population ratio. The activity was assumed to occur uniformly throughout the year, thus, the season day emissions were estimated by the annual emissions divided by 365. Table A-31 shows the emissions estimates for this sector.

Table A-31: Annual and Season-day Emissions from Human Cremation in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2810060100	Humans Cremation	0.01	0.07	0.03	0.36
2810060200	Animals Cremation	0.000001	0.000016	0.000008	0.000090
Total		0.0055	0.0658	0.0303	0.3604

A6.2.8.5 Wildfires

ADEQ requested information regarding the wildfires that occurred in the ozone NAA in 2017 from ADEQ's Smoke Management Program. ADEQ also contacted the Arizona State Forestry Division (ASFD) for information on wildfires that occurred outside of local fire districts and municipalities on State, private, and U.S. Bureau of Land Management (BLM) to gather information. Latitude and longitude data were used to identify the burns that occurred within the ozone NAA. Five burns with total burned area of 90.6 acres were identified within the ozone NAA.

Annual emissions were calculated by multiplying the area burned by the emission factors (kg/hectare) obtained from AP42 Section 13.1¹⁶. Ozone season day emissions were estimated by dividing the annual emissions by the number of days of burn, which was four days in 2017. Table A-32 shows the emissions estimates for this sector.

Table A-32: Annual and Season-day Emissions from Wildfires in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NO _x	VOC	NO _x
2810001001	Forest Wildfires; Smoldering	10.87	1.82	5435.92	909.35

A6.2.8.6 Prescribed Fires

Annual emissions from prescribed fires can be estimated using 2017 emissions reports submitted to ADEQ. Latitude and longitude data can be used to determine the incidents inside the nonattainment area. The reports indicated that in 2017, no prescribed burns occurred within the ozone NAA. Therefore, the emissions from this sector are assumed to be zero.

A6.3 On-Road Mobile Source

On-road motor vehicle emission estimates were developed by ADEQ using the MOVES2014b model. Emissions were disaggregated as follows:

- Month – 1 (January) to 12 (December)
- Source type – motorcycle, passenger car, passenger truck, light commercial truck, intercity bus, transit bus, school bus, refuse truck, single unit short-haul truck, single unit long-haul truck, motor home, combination short-haul truck, and combination long-haul truck
- Road type – urban restricted (highway), urban unrestricted, rural restricted (highway), rural unrestricted, and off network
- Fuel type – gasoline, diesel, compressed natural gas (CNG), and Ethanol

¹⁶ <https://www3.epa.gov/ttn/chief/ap42/ch13/related/c13s01.html>

- Process type – running exhaust, start exhaust, evaporative fuel vapor venting, evaporative fuel leaks, crankcase start exhaust, crankcase extended idle exhaust, and extended idle exhaust

The on-road emission estimates were developed by month for the ozone NAA. Annual emissions were estimated by summing up the monthly totals for the entire year. Ozone season day emissions were estimated by summing up the monthly emissions for April through October and then dividing by the number of days in the ozone season (213 days). Table A-33 shows the emissions estimates for this sector.

Table A-33: Annual and Season-day Emissions from On-road Mobile Sources in Yuma Ozone NAA

Road Type	Source Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
Off-Network	Combination long-haul truck	38.10	255.86	219.42	1437.46
	Combination short-haul truck	0.16	0.0029	0.28	0.02
	Intercity bus	0.00	0.0039	0.00	0.02
	Light commercial truck	42.45	26.75	244.74	146.43
	Motor home	12.77	3.20	79.78	17.63
	Motorcycle	11.73	0.10	73.52	0.42
	Passenger car	183.95	80.74	1080.41	438.50
	Passenger truck	162.76	95.87	942.04	524.30
	Refuse truck	0.35	0.15	1.77	0.80
	School bus	0.77	0.35	4.11	1.90
	Single unit long-haul truck	1.26	0.96	6.78	5.29
	Single unit short-haul truck	66.35	49.07	371.33	270.08
	Transit bus	0.02	0.0037	0.06	0.02
Rural Restricted Access	Combination long-haul truck	6.12	163.56	35.77	927.57
	Combination short-haul truck	0.96	23.50	5.59	133.26
	Intercity bus	0.03	0.91	0.16	5.27
	Light commercial truck	1.54	5.56	9.38	32.55
	Motor home	0.78	3.52	4.86	20.40
	Motorcycle	1.05	0.77	7.76	5.44
	Passenger car	7.65	26.10	46.61	153.59
	Passenger truck	17.46	59.96	106.61	351.90
	Refuse truck	0.01	0.32	0.08	1.84
	School bus	0.91	13.62	4.75	68.41
	Single unit long-haul truck	1.12	10.57	6.76	61.46
	Single unit short-haul truck	0.79	6.05	4.85	35.15
	Transit bus	0.03	0.68	0.17	3.92
Rural Unrestricted Access	Combination long-haul truck	1.80	49.38	40.88	231.85
	Combination short-haul truck	2.31	109.75	47.30	268.25
	Intercity bus	0.04	1.39	0.94	5.48
	Light commercial truck	2.53	8.25	7.48	43.96
	Motor home	1.47	7.32	5.13	29.67
	Motorcycle	3.10	1.84	1.86	13.07
	Passenger car	12.71	51.50	33.84	199.42
	Passenger truck	27.12	134.58	76.17	447.13
	Refuse truck	0.03	1.08	0.52	3.00
	School bus	1.29	12.14	10.63	53.39
	Single unit long-haul truck	2.47	19.33	18.89	109.83
	Single unit short-haul truck	1.77	14.56	10.66	62.02
	Transit bus	0.03	1.00	0.59	3.42

Appendix A - Yuma Ozone Emission Inventory Technical Support Document

Road Type	Source Type	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
Urban Restricted Access	Combination long-haul truck	1.02	26.37	5.94	149.58
	Combination short-haul truck	0.50	11.98	2.94	67.95
	Intercity bus	0.02	0.48	0.12	2.78
	Light commercial truck	1.13	4.00	6.88	23.40
	Motor home	0.61	2.06	3.80	11.90
	Motorcycle	0.72	0.50	5.33	3.51
	Passenger car	5.96	18.89	36.30	111.08
	Passenger truck	13.29	43.15	81.07	253.06
	Refuse truck	0.01	0.19	0.06	1.09
	School bus	0.77	6.81	4.00	34.17
	Single unit long-haul truck	0.68	6.24	4.09	36.27
	Single unit short-haul truck	0.48	3.48	2.96	20.23
	Transit bus	0.02	0.37	0.13	2.13
Urban Unrestricted Access	Combination long-haul truck	1.72	30.64	10.05	173.83
	Combination short-haul truck	3.74	59.30	21.88	336.41
	Intercity bus	0.09	1.62	0.51	9.38
	Light commercial truck	9.64	19.76	58.56	118.30
	Motor home	3.87	10.35	23.84	59.93
	Motorcycle	5.08	1.70	37.48	11.99
	Passenger car	44.64	85.35	271.29	507.86
	Passenger truck	89.60	179.68	545.18	1063.97
	Refuse truck	0.07	1.04	0.42	6.04
	School bus	2.61	17.78	13.53	89.32
	Single unit long-haul truck	7.40	52.18	44.51	303.66
	Single unit short-haul truck	5.20	26.83	31.73	156.20
	Transit bus	0.07	0.94	0.39	5.44
Summary All Road Types	Combination long-haul truck	48.75	517.31	318.14	281.68
	Combination short-haul truck	7.67	142.08	89.45	44.17
	Intercity bus	0.18	3.95	1.32	1.05
	Light commercial truck	57.28	63.55	494.41	334.92
	Motor home	19.51	24.26	126.75	121.39
	Motorcycle	21.69	4.92	238.07	146.95
	Passenger car	254.90	244.93	3948.13	1511.81
	Passenger truck	310.23	454.82	7629.12	1839.95
	Refuse truck	0.48	2.20	1.60	2.51
	School bus	6.34	49.19	59.15	33.08
	Single unit long-haul truck	12.92	88.84	93.95	76.99
	Single unit short-haul truck	74.59	96.10	136.20	421.65
	Transit bus	0.17	2.57	1.33	0.96
Total On-road Mobile Source Emissions		814.71	1694.72	4817.10	9673.58

A6.4 Non-Road Mobile Sources

Due to the lack of localized data, ADEQ estimated non-road emissions using the US EPA's 2017 NEI data. Annual county emissions were allocated to the ozone NAA by using appropriate factors such as population, cropland area, railroad length, etc. The activity was assumed to occur uniformly throughout the year, thus, the season day emissions were estimated by the annual emissions divided by 365. Table A-34 shows the emissions estimates for this sector.

Table A-34: Annual and Season-day Emissions from Non-road Mobile Sources in Yuma Ozone NAA

Source Category	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
	VOC	NOx	VOC	NOx
Agricultural Equipment	8.95	1.38	49.04	7.55
Commercial Equipment	58.53	9.42	320.72	51.61
Construction and Mining Equipment	147.13	154.74	806.17	847.87
Industrial Equipment	14.36	8.90	78.67	48.75
Lawn and Garden Equipment	15.91	3.18	87.15	17.43
Logging Equipment	0.01	0.0004	0.06	0.0024
Recreational Equipment	3.28	1.16	17.96	6.34
Pleasure Craft	34.65	201.96	189.88	1106.63
Total Non-road Mobile Sources	282.81	380.73	1549.66	2086.19

ADEQ also estimated emissions from locomotives and aircrafts (airports) as nonroad mobile sources. The 2017 NEI includes the emissions from line haul locomotives class I operations. ADEQ used the NEI information to calculate the emissions in the ozone NAA. The annual emissions were estimated by multiplying county level emissions by the ratio of the railroad length in the ozone NAA to the railroad length in the county. The activity was assumed to occur uniformly throughout the year, thus the season day emissions were estimated by the annual emissions divided by 365. Table A-35 shows the emissions estimates for this sector.

Table A-35: Annual and Season-day Emissions from Locomotives in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2285002006	Line haul locomotives: class I operations	8.15	176.71	44.65	968.28
2285002007	Line Haul Locomotives: class II / III Operations	0.09	1.88	0.48	10.30
2285002008	Line Haul Locomotives: Passenger Trains (Amtrak)	0.47	8.41	2.57	46.09
Total		8.70	187.00	47.69	1024.67

ADEQ identified eight public and private airports in Yuma County, all of which are located outside the ozone NAA. Therefore, it is assumed that there is no emission from airports in the NAA.

A6.5 Biogenic Emissions

Biogenic emissions are emissions that come from natural sources such as vegetation and soils and are significant contributors to background air chemistry. Due to the lack of more localized information on biogenic emissions in ozone NAA, and after consultation with EPA Region 9, ADEQ used 2017 NEI information on Yuma County biogenic emissions. ADEQ estimated annual emissions in the ozone NAA by applying the ratio of land area within the NAA to land area within Yuma County.

The activity is assumed to occur uniformly throughout the year, thus the season day emissions will be estimated by the annual emissions divided by 365. Table A-36 shows the emissions estimates for this sector.

Table A-36: Annual and Season-day Emissions from Biogenic Sources in Yuma Ozone NAA

SCC	Description	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
		VOC	NOx	VOC	NOx
2701200000	Vegetation	366.74	N/A	2009.54	N/A
2701220000	Soils	N/A	5.91	N/A	32.41

A6.6 Summary of Emission Inventory Results

The overall summary of the emissions inventory for the ozone NAA is presented in Table A-37 and Figures A19 and A20 by source type.

Table A-37: Summary of VOC and NOx Emissions in Yuma Ozone NAA

Source Type	Annual Emissions (ton/yr)		OSD Emissions (lb/day)	
	VOC	NOx	VOC	NOx
Point	20.42	201.33	111.88	1103.17
Area (Nonpoint)	1706.53	65.90	15007.04	1275.17
Mobile On-road	814.71	1694.72	4817.10	9673.58
Non-road Mobile	282.81	380.73	1549.66	2086.19
Biogenics	366.74	5.91	2009.54	40.55
Total	3191.21	2348.59	23495.22	14178.66

Figure A-19: Annual VOC Emissions (tons) in Yuma Ozone NAA by Source Type

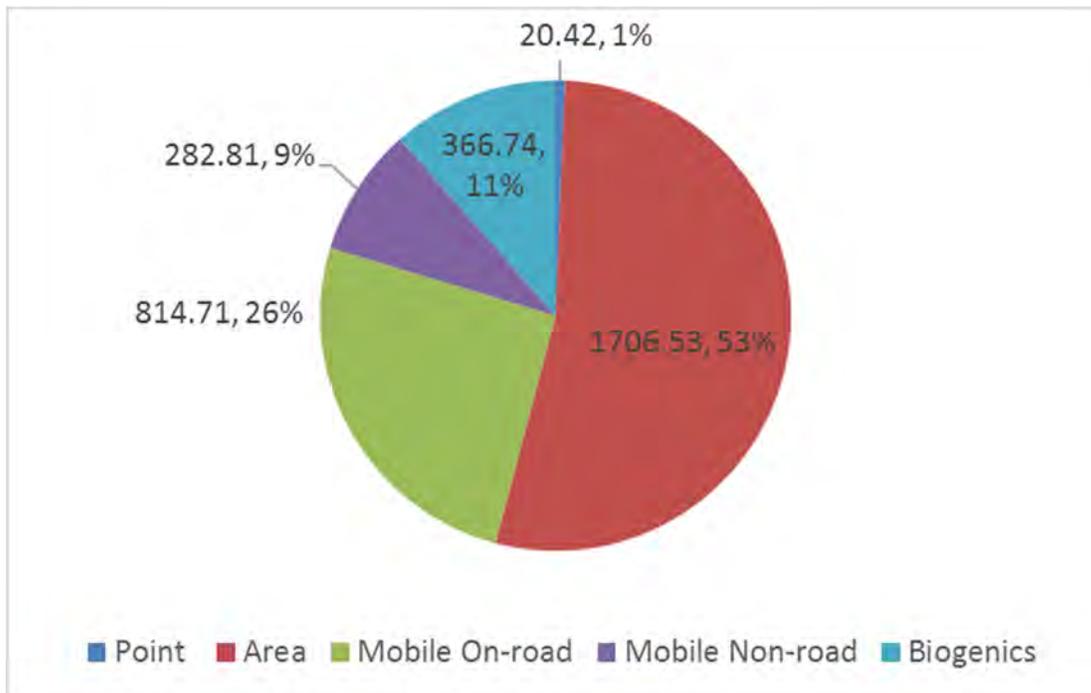
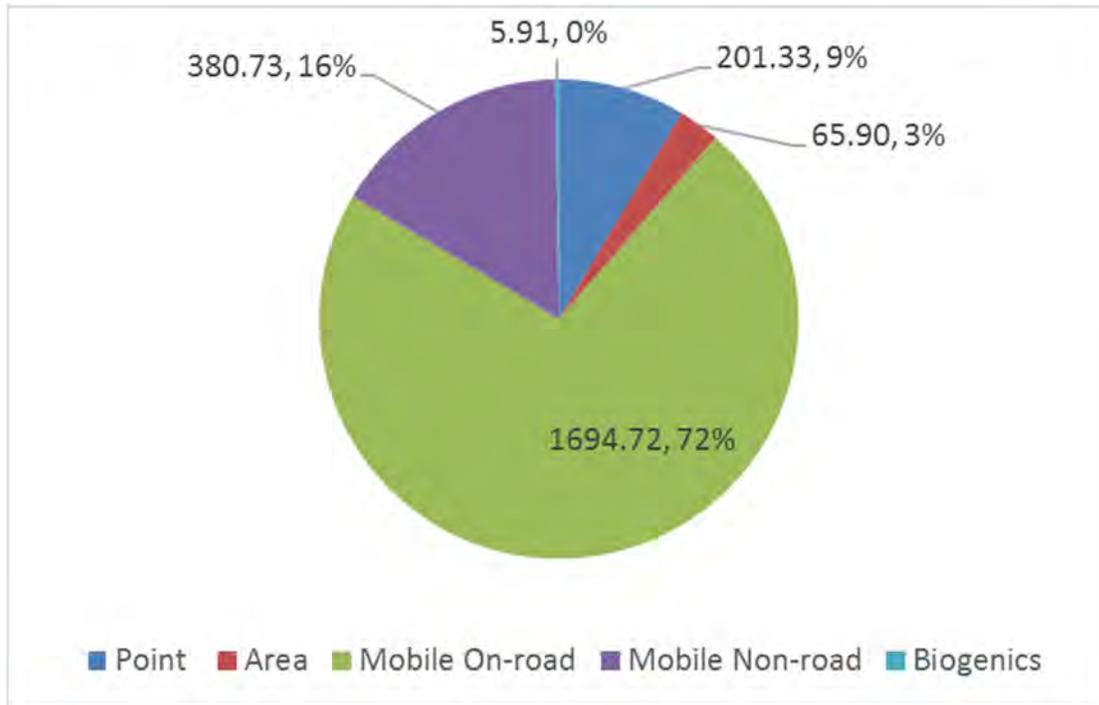


Figure A-20: Annual NOx Emissions (tons) in Yuma Ozone NAA by Source Type



As shown in Table A-37 and Figures A19- A20, area sources are the largest source of VOC with 53% of total emissions. About 73% of area source VOC emissions come from solvent utilization. The second largest source of VOC in the NAA are on-road mobile vehicles with 26% of total emissions. The largest source of NOx emissions in the NAA are on-road mobile vehicles with 72% of total emissions. The second largest source of NOx in the NAA are non-road mobile sources with 16% of total emissions.

A6.6.1 Emission Inventory Limitations and Future Development

It should be noted that any emissions inventory that is not based on directly measured emissions will have associated uncertainty. ADEQ used the best information available to estimate emissions for ozone precursors in the ozone NAA. However, due to the lack of local information, it was not possible to create bottom-top inventory for all the sectors. Emissions inventory development is an iterative process; multiple iterations will reduce the associated uncertainty and improve the overall inventory quality of the data. ADEQ will refine the emissions inventory with more accurate data when new information becomes available. The future work would include collecting local information to refine the emissions estimates from major sources such as area sources, mobile sources and biogenics.

A7 References

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U.S. Fire Administration, National Fire Data Center, National Fire Incident Reporting System (NFIRS)

WGA/WRAP, 2002 Fire Emission Inventory for the WRAP Region – Phase II. Project No. 178-6. Western Governors Association/Western Regional Air Partnership. July 22, 2005.

Appendix B: Procedural Requirements

Exhibit B-I: Delegation of Authority

Exhibit B-II: Authorizing Statutes

Exhibit B-III: Public Notice and Affidavit of Publication

Exhibit B-IV: Public Hearing Sign-in Sheet

Exhibit B-V: Public Hearing Officer Certification

Exhibit B-VI: Public Hearing Transcript

Exhibit B-VII: Compilation of Comments and State Responses

Exhibit B-I: Delegation of Authority



Memorandum

Date: November 12, 2019
To: Daniel Czecholinski, Division Director, Air Quality Division
From: Misael Cabrera, Director
Subject: Ongoing Air Quality Delegation of Authority

Under A.R.S. §49-104(D) (2), I authorize you, Daniel Czecholinski, Division Director, Air Quality Division, Arizona Department of Environmental Quality, to perform any act, including execution of any pertinent documents, which I as Director of the Arizona Department of Environmental Quality am authorized or required to do by law with respect to A.R.S. Title 49, Chapters 1 and 3 and any other acts relating to air quality including personnel actions.

This delegation is effective immediately, shall remain in effect until it is revoked, or upon your separation from the Arizona Department of Environmental Quality. You may further delegate this authority in the best interest of the agency, however, those delegations must be in writing and you must forward a copy of any further delegations to me.

I ratify all acts performed by you as Division Director, Air Quality Division, concerning the duties and functions in this delegation letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Misael", written over a horizontal line.

Misael Cabrera, P.E.
Director

Exhibit B-II: Authorizing Statutes

Authorizing Statutes

ARIZONA REVISED STATUTES, Title 49 - The Environment

The Arizona Revised Statutes have been updated to include the revised sections from the 54th Legislature, 2nd Regular Session. Please note that the next update of this compilation will not take place until after the conclusion of the 55th Legislature, 1st Regular Session, which convenes in January 2021.

Chapter 1, GENERAL PROVISIONS

Article 1, Department of Environmental Quality

[49-104. Powers and duties of the department and director](#)

A. The department shall:

1. Formulate policies, plans and programs to implement this title to protect the environment.
2. Stimulate and encourage all local, state, regional and federal governmental agencies and all private persons and enterprises that have similar and related objectives and purposes, cooperate with those agencies, persons and enterprises and correlate department plans, programs and operations with those of the agencies, persons and enterprises.
3. Conduct research on its own initiative or at the request of the governor, the legislature or state or local agencies pertaining to any department objectives.
4. Provide information and advice on request of any local, state or federal agencies and private persons and business enterprises on matters within the scope of the department.
5. Consult with and make recommendations to the governor and the legislature on all matters concerning department objectives.
6. Promote and coordinate the management of air resources to ensure their protection, enhancement and balanced utilization consistent with the environmental policy of this state.
7. Promote and coordinate the protection and enhancement of the quality of water resources consistent with the environmental policy of this state.
8. Encourage industrial, commercial, residential and community development that maximizes environmental benefits and minimizes the effects of less desirable environmental conditions.
9. Ensure the preservation and enhancement of natural beauty and man-made scenic qualities.

10. Provide for the prevention and abatement of all water and air pollution including that related to particulates, gases, dust, vapors, noise, radiation, odor, nutrients and heated liquids in accordance with article 3 of this chapter and chapters 2 and 3 of this title.

11. Promote and recommend methods for the recovery, recycling and reuse or, if recycling is not possible, the disposal of solid wastes consistent with sound health, scenic and environmental quality policies. The department shall report annually on its revenues and expenditures relating to the solid and hazardous waste programs overseen or administered by the department.

12. Prevent pollution through the regulation of the storage, handling and transportation of solids, liquids and gases that may cause or contribute to pollution.

13. Promote the restoration and reclamation of degraded or despoiled areas and natural resources.

14. Participate in the state civil defense program and develop the necessary organization and facilities to meet wartime or other disasters.

15. Cooperate with the Arizona-Mexico commission in the governor's office and with researchers at universities in this state to collect data and conduct projects in the United States and Mexico on issues that are within the scope of the department's duties and that relate to quality of life, trade and economic development in this state in a manner that will help the Arizona-Mexico commission to assess and enhance the economic competitiveness of this state and of the Arizona-Mexico region.

16. Unless specifically authorized by the legislature, ensure that state laws, rules, standards, permits, variances and orders are adopted and construed to be consistent with and no more stringent than the corresponding federal law that addresses the same subject matter. This paragraph does not adversely affect standards adopted by an Indian tribe under federal law.

17. Provide administrative and staff support for the oil and gas conservation commission.

B. The department, through the director, shall:

1. Contract for the services of outside advisers, consultants and aides reasonably necessary or desirable to enable the department to adequately perform its duties.

2. Contract and incur obligations reasonably necessary or desirable within the general scope of department activities and operations to enable the department to adequately perform its duties.

3. Utilize any medium of communication, publication and exhibition when disseminating information, advertising and publicity in any field of its purposes, objectives or duties.

4. Adopt procedural rules that are necessary to implement the authority granted under this title, but that are not inconsistent with other provisions of this title.

5. Contract with other agencies, including laboratories, in furthering any department program.
6. Use monies, facilities or services to provide matching contributions under federal or other programs that further the objectives and programs of the department.
7. Accept gifts, grants, matching monies or direct payments from public or private agencies or private persons and enterprises for department services and publications and to conduct programs that are consistent with the general purposes and objectives of this chapter. Monies received pursuant to this paragraph shall be deposited in the department fund corresponding to the service, publication or program provided.
8. Provide for the examination of any premises if the director has reasonable cause to believe that a violation of any environmental law or rule exists or is being committed on the premises. The director shall give the owner or operator the opportunity for its representative to accompany the director on an examination of those premises. Within forty-five days after the date of the examination, the department shall provide to the owner or operator a copy of any report produced as a result of any examination of the premises.
9. Supervise sanitary engineering facilities and projects in this state, authority for which is vested in the department, and own or lease land on which sanitary engineering facilities are located, and operate the facilities, if the director determines that owning, leasing or operating is necessary for the public health, safety or welfare.
10. Adopt and enforce rules relating to approving design documents for constructing, improving and operating sanitary engineering and other facilities for disposing of solid, liquid or gaseous deleterious matter.
11. Define and prescribe reasonably necessary rules regarding the water supply, sewage disposal and garbage collection and disposal for subdivisions. The rules shall:
 - (a) Provide for minimum sanitary facilities to be installed in the subdivision and may require that water systems plan for future needs and be of adequate size and capacity to deliver specified minimum quantities of drinking water and to treat all sewage.
 - (b) Provide that the design documents showing or describing the water supply, sewage disposal and garbage collection facilities be submitted with a fee to the department for review and that no lots in any subdivision be offered for sale before compliance with the standards and rules has been demonstrated by approval of the design documents by the department.
12. Prescribe reasonably necessary measures to prevent pollution of water used in public or semipublic swimming pools and bathing places and to prevent deleterious conditions at those places. The rules shall prescribe minimum standards for the design of and for sanitary conditions at any public or semipublic swimming pool or bathing place and provide for abatement as public nuisances of premises and facilities that do not comply with the minimum standards. The rules shall be developed in cooperation with the director of the department of health services and shall

be consistent with the rules adopted by the director of the department of health services pursuant to section 36-136, subsection I, paragraph 10.

13. Prescribe reasonable rules regarding sewage collection, treatment, disposal and reclamation systems to prevent the transmission of sewage borne or insect borne diseases. The rules shall:

(a) Prescribe minimum standards for the design of sewage collection systems and treatment, disposal and reclamation systems and for operating the systems.

(b) Provide for inspecting the premises, systems and installations and for abating as a public nuisance any collection system, process, treatment plant, disposal system or reclamation system that does not comply with the minimum standards.

(c) Require that design documents for all sewage collection systems, sewage collection system extensions, treatment plants, processes, devices, equipment, disposal systems, on-site wastewater treatment facilities and reclamation systems be submitted with a fee for review to the department and may require that the design documents anticipate and provide for future sewage treatment needs.

(d) Require that construction, reconstruction, installation or initiation of any sewage collection system, sewage collection system extension, treatment plant, process, device, equipment, disposal system, on-site wastewater treatment facility or reclamation system conform with applicable requirements.

14. Prescribe reasonably necessary rules regarding excreta storage, handling, treatment, transportation and disposal. The rules may:

(a) Prescribe minimum standards for human excreta storage, handling, treatment, transportation and disposal and shall provide for inspection of premises, processes and vehicles and for abating as public nuisances any premises, processes or vehicles that do not comply with the minimum standards.

(b) Provide that vehicles transporting human excreta from privies, septic tanks, cesspools and other treatment processes shall be licensed by the department subject to compliance with the rules. The department may require payment of a fee as a condition of licensure. The department may establish by rule a fee as a condition of licensure, including a maximum fee. As part of the rulemaking process, there must be public notice and comment and a review of the rule by the joint legislative budget committee. The department shall not increase that fee by rule without specific statutory authority for the increase. The fees shall be deposited, pursuant to sections 35-146 and 35-147, in the solid waste fee fund established by section 49-881.

15. Perform the responsibilities of implementing and maintaining a data automation management system to support the reporting requirements of title III of the superfund amendments and reauthorization act of 1986 (P.L. 99-499) and article 2 of this chapter.

16. Approve remediation levels pursuant to article 4 of this chapter.

17. Establish or revise fees by rule pursuant to the authority granted under title 44, chapter 9, article 8 and chapters 4 and 5 of this title for the department to adequately perform its duties. All fees shall be fairly assessed and impose the least burden and cost to the parties subject to the fees. In establishing or revising fees, the department shall base the fees on:

(a) The direct and indirect costs of the department's relevant duties, including employee salaries and benefits, professional and outside services, equipment, in-state travel and other necessary operational expenses directly related to issuing licenses as defined in title 41, chapter 6 and enforcing the requirements of the applicable regulatory program.

(b) The availability of other funds for the duties performed.

(c) The impact of the fees on the parties subject to the fees.

(d) The fees charged for similar duties performed by the department, other agencies and the private sector.

18. Appoint a person with a background in oil and gas conservation to act on behalf of the oil and gas conservation commission and administer and enforce the applicable provisions of title 27, chapter 4 relating to the oil and gas conservation commission.

C. The department may:

1. Charge fees to cover the costs of all permits and inspections it performs to ensure compliance with rules adopted under section 49-203, except that state agencies are exempt from paying those fees that are not associated with the dredge and fill permit program established pursuant to chapter 2, article 3.2 of this title. For services provided under the dredge and fill permit program, a state agency shall pay either:

(a) The fees established by the department under the dredge and fill permit program.

(b) The reasonable cost of services provided by the department pursuant to an interagency service agreement.

2. Monies collected pursuant to this subsection shall be deposited, pursuant to sections 35-146 and 35-147, in the water quality fee fund established by section 49-210.

3. Contract with private consultants for the purposes of assisting the department in reviewing applications for licenses, permits or other authorizations to determine whether an applicant meets the criteria for issuance of the license, permit or other authorization. If the department contracts with a consultant under this paragraph, an applicant may request that the department expedite the application review by requesting that the department use the services of the consultant and by agreeing to pay the department the costs of the consultant's services. Notwithstanding any other law, monies paid by applicants for expedited reviews pursuant to this paragraph are appropriated to the department for use in paying consultants for services.

D. The director may:

1. If the director has reasonable cause to believe that a violation of any environmental law or rule exists or is being committed, inspect any person or property in transit through this state and any vehicle in which the person or property is being transported and detain or disinfect the person, property or vehicle as reasonably necessary to protect the environment if a violation exists.
2. Authorize in writing any qualified officer or employee in the department to perform any act that the director is authorized or required to do by law.

49-106. Statewide application of rules

The rules adopted by the department apply and shall be observed throughout this state, or as provided by their terms, and the appropriate local officer, council or board shall enforce them. This section does not limit the authority of local governing bodies to adopt ordinances and rules within their respective jurisdictions if those ordinances and rules do not conflict with state law and are equal to or more restrictive than the rules of the department, but this section does not grant local governing bodies any authority not otherwise provided by separate state law.

49-112. County regulation; standards

A. When authorized by law, a county may adopt a rule, ordinance or regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following requirements are met:

1. The rule, ordinance or regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or regulation is either:
 - (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
 - (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or regulation is equivalent to federal statutes or regulations.
3. Any fee or tax adopted under the rule, ordinance or regulation does not exceed the reasonable costs of the county to issue and administer the permit or plan approval program.

B. When authorized by law, a county may adopt rules, ordinances or regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any

board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

C. A county that adopts rules, ordinances or regulations pursuant to subsection B of this section and that at any time cannot comply with subsection B of this section shall prepare and file a notice of noncompliance with the director. The county shall post a copy of the notice of noncompliance on the county's website with a date stamp of the date of posting. If the county does not comply with subsection B of this section within one year after posting of the notice on the county's website, the director shall provide written notice to and assert regulatory jurisdiction over those persons and entities subject to the affected county rules, ordinances or regulations.

D. Except as provided in chapter 3, article 3 of this title, before adopting or enforcing any rule, ordinance or regulation pursuant to subsection A or B of this section, the county shall comply with the following requirements:

1. Prepare a notice of proposed rulemaking to include the proposed rule, ordinance or regulation. This notice shall demonstrate evidence of compliance with subsection A or B of this section. The notice shall include the name, address and phone number of a person who can answer questions about the proposed rule, ordinance or regulation and accept any written requests for the county to conduct an oral proceeding. The county shall post the notice on the county's website with a date stamp of the date of posting. The county shall publish the availability of the notice of the proposed rule, ordinance or regulation in a newspaper of general circulation in the county. If there is no newspaper of general circulation in the county, the county shall publish the notice in a newspaper of general circulation in an adjoining county. If requested by the public, the county shall make available a paper copy of the notice at a reasonable cost.
2. For at least thirty days after the posting of the notice of the proposed rule, ordinance or regulation, afford persons the opportunity to submit in writing comments, statements, arguments, data and views on the proposed rule, ordinance or regulation.
3. Respond in writing to the comments submitted pursuant to paragraph 2 of this subsection and post the county's response on the county's website. If requested by the public, the county shall make paper copies of its comments available at a reasonable cost.
4. Schedule a public hearing on the proposed rule, ordinance or regulation if a written request for an oral proceeding is submitted to the county during the thirty-day comment period. The county shall post the notice of oral proceeding on a proposed rule, ordinance or regulation on the county's website. The county shall post the notice of oral proceeding at least twenty days before the date of the oral proceeding. The county shall publish notice of any public hearing required pursuant to this paragraph in any newspaper as prescribed by this title or county ordinance. The

county shall select a time and location for the public hearing that affords a reasonable opportunity for the public to participate.

E. A county is not required to comply with subsection D, paragraphs 2, 3 and 4 of this section before it adopts or enforces a rule, ordinance or regulation if the rule, ordinance or regulation only incorporates by reference an existing state or federal rule or law that provides greater regulatory flexibility for regulated parties and otherwise satisfies the requirements prescribed in subsection B of this section.

F. Until June 30, 1995, a person may file with the clerk of the board of supervisors for that county a petition challenging a county rule, ordinance or regulation adopted before July 15, 1994 for compliance with the criteria set forth in subsection A or B of this section. The petition shall contain the grounds for challenging the specific county rule, ordinance or regulation. Within one year after the petition is filed, the board of supervisors shall review the challenged rule, ordinance or regulation and make a written demonstration of compliance with the criteria set forth in subsection A or B of this section and challenged in the petition. Any rules, ordinances or regulations that have been challenged and for which the board of supervisors has not made the written demonstration within one year after the filing of the petition required by this section become unenforceable as of that date. If a county has already made a written demonstration under section 49-479, subsection C, for a rule, ordinance or regulation, the person filing the petition shall state the specific grounds in the petition why that demonstration does not meet the requirements of this section.

G. A rule, ordinance or regulation adopted pursuant to subsection A of this section may not be invalidated subsequent to its adoption on the grounds that the economic feasibility analysis is insufficient or inaccurate if a county makes a good faith effort to comply with the economic feasibility requirement of subsection A, paragraph 2, subdivision (a), of this section and has explained in the written statement, made public pursuant to subsection D of this section, the methodology used to satisfy the economic feasibility requirement.

H. This section shall not apply to any rule, ordinance or regulation adopted by a county pursuant to:

1. Title 36 for which the state has similar statutory or rule making authority in this title.
2. Section 49-391.
3. Chapter 3, article 8 of this title.
4. Chapter 4, article 3 of this title and section 49-765.
5. Nonsubstantive rules relating to the application process that have a de minimis economic effect on regulated parties.

Chapter 3, AIR QUALITY

Article 1, General Provisions

49-402. State and county control

A. The department shall have original jurisdiction over such sources, permits and violations that pertain to:

1. Major sources in any county that has not received approval from the administrator for new source review under the clean air act and prevention of significant deterioration under the clean air act.

2. Smelting of metal ore.

3. Petroleum refineries.

4. Coal fired electrical generating stations.

5. Portland cement plants.

6. Air pollution by portable sources.

7. Air pollution by mobile sources for the purpose of regulating those sources as prescribed by article 5 of this chapter and consistent with the clean air act.

8. Sources that are subject to title V of the clean air act and that are located in a county for which the administrator has disapproved that county's title V permit program if the department has a title V program that has been approved by the administrator. On approval of that county's title V permit program by the administrator, the county shall resume jurisdiction over those sources.

B. Except as specified in subsection A of this section, the review, issuance, administration and enforcement of permits issued pursuant to this chapter shall be by the county or multi-county air quality control region pursuant to the provisions of article 3 of this chapter. After the director has provided prior written notice to the control officer describing the reason for asserting jurisdiction and has provided an opportunity to confer, the county or multi-county air quality control region shall relinquish jurisdiction, control and enforcement over such permits as the director designates and at such times as the director asserts jurisdiction at the state level. The order of the director which asserts state jurisdiction shall specify the matters, geographical area, or sources over which the department shall exercise jurisdiction and control. Such state authority shall then be the sole and exclusive jurisdiction and control to the extent asserted, and the provisions of this chapter shall govern, except as provided in this chapter, until jurisdiction is surrendered by the department to such county or region.

C. Portable sources under jurisdiction of the department under subsection A, paragraph 6 of this section may be required to file notice with the director and the control officer who has

jurisdiction over the geographic area that includes the new location before beginning operations at that new location.

D. Notwithstanding any other law, a permit issued to a state regulated source shall include the emission standard or standard of performance adopted pursuant to section 49-479, if such standards are more stringent than those adopted by the director and if such standards are specifically identified as applicable to the permitted source or a component of the permitted source. Such standards shall be applied to sources identified in subsection A, paragraph 2, 3, 4 or 5 of this section only if the standard is formally proposed for adoption as part of the state implementation plan.

E. The regional planning agency for each county which contains a vehicle emissions control area shall develop plan revisions containing transportation related air quality control measures designed to attain and maintain primary and secondary ambient air quality standards as prescribed by and within the time frames specified in the clean air act. In developing the plan revisions, the regional planning agency shall consider all of the following:

1. Mandatory employee parking fees.
2. Park and ride programs.
3. Removal of on-street parking.
4. Ride share programs.
5. Mass transit alternatives.
6. Expansion of public transportation systems.
7. Optimizing freeway ramp metering.
8. Coordinating traffic signal systems.
9. Reduction of traffic congestion at major intersections.
10. Site specific transportation control measures.
11. Reversible lanes.
12. Fixed lanes for buses and carpools.
13. Encouragement of pedestrian travel.
14. Encouragement of bicycle travel.
15. Development of bicycle travel facilities.

16. Employer incentives regarding ride share programs.
17. Modification of work schedules.
18. Strategies for controlling the generation of air pollution by nonresidents of nonattainment or maintenance areas.
19. Use of alternative fuels.
20. Use of emission control devices on public diesel powered vehicles.
21. Paving of roads.
22. Restricting off-road vehicle travel.
23. Construction site air pollution control.
24. Other air quality control measures.

F. Each regional planning agency shall consult with the department of transportation to coordinate the plans developed pursuant to subsection E of this section with transportation plans developed by the department of transportation pursuant to any other law.

49-404. State implementation plan

- A. The director shall maintain a state implementation plan that provides for implementation, maintenance and enforcement of national ambient air quality standards and protection of visibility as required by the clean air act.
- B. The director may adopt rules that describe procedures for adoption of revisions to the state implementation plan.
- C. The state implementation plan and all revisions adopted before September 30, 1992 remain in effect according to their terms, except to the extent otherwise provided by the clean air act, inconsistent with any provision of the clean air act, or revised by the administrator. No control requirement in effect, or required to be adopted by an order, settlement agreement or plan in effect, before the enactment of the clean air act in any area which is a nonattainment or maintenance area for any air pollutant may be modified after enactment in any manner unless the modification insures equivalent or greater emission reductions of the air pollutant. The director shall evaluate and adopt revisions to the plan in conformity with federal regulations and guidelines promulgated by the administrator for those purposes until the rules required by subsection B are effective.

49-406. Nonattainment area plan

A. For any ozone, carbon monoxide or particulate nonattainment or maintenance area the governor shall certify the metropolitan planning organization designated to conduct the continuing, cooperative and comprehensive transportation planning process for that area under 23 United States Code section 134 as the agency responsible for the development of a nonattainment or maintenance area plan for that area.

B. For any ozone, carbon monoxide or particulate nonattainment or maintenance area for which no metropolitan planning organization exists, the department shall be certified as the agency responsible for development of a nonattainment or maintenance area plan for that area.

C. For any ozone, carbon monoxide or particulate nonattainment or maintenance area, the department, the planning agency certified pursuant to subsection A of this section on behalf of elected officials of affected local government, the county air pollution control department or district, and the department of transportation shall, by November 15, 1992, and from time to time as necessary, jointly review and update planning procedures or develop new procedures.

D. In preparing the procedures described in subsection C of this section, the department, the planning agency certified pursuant to subsection A of this section on behalf of elected officials of affected local government, the county air pollution control department or district, and the department of transportation shall determine which elements of each revised implementation plan will be developed, adopted, and implemented, through means including enforcement, by the state and which by local governments or regional agencies, or any combination of local governments, regional agencies or the state.

E. The department, the planning agency certified pursuant to subsection A of this section on behalf of elected officials of affected local government, the county air pollution control department or district, and the department of transportation shall enter into a memorandum of agreement for the purpose of coordinating the implementation of the procedures described in subsection C and D of this section.

F. At a minimum, the memorandum of agreement shall contain:

1. The relevant responsibilities and authorities of each of the coordinating agencies.
2. As appropriate, procedures, schedules and responsibilities for development of nonattainment or maintenance area plans or plan revisions and for determining reasonable further progress.
3. Assurances for adequate plan implementation.
4. Procedures and responsibilities for tracking plan implementation.
5. Responsibilities for preparing demographic projections including land use, housing, and employment.

6. Coordination with transportation programs.
7. Procedures and responsibilities for adoption of control measures and emissions limitations.
8. Responsibilities for collecting air quality, transportation and emissions data.
9. Responsibility for conducting air quality modeling.
10. Responsibility for administering and enforcing stationary source controls.

11. Provisions for the timely and periodic sharing of all data and information among the signatories relating to:

- (a) Demographics.
- (b) Transportation.
- (c) Emissions inventories.
- (d) Assumptions used in developing the model.
- (e) Results of modeling done in support of the plan.
- (f) Monitoring data.

G. Each agency that commits to implement any emission limitation or other control measure, means or technique contained in the implementation plan shall describe that commitment in a resolution adopted by the appropriate governing body of the agency. The resolution shall specify the following:

1. Its authority for implementing the limitation or measure as provided in statute, ordinance or rule.
2. A program for the enforcement of the limitation or measure.
3. The level of personnel and funding allocated to the implementation of the measure.

H. The state, in accordance with the rules adopted pursuant to section 49-404, and the governing body of the metropolitan planning organization shall adopt each nonattainment or maintenance area plan developed by a certified metropolitan planning organization. The adopted nonattainment or maintenance area plan shall be transmitted to the department for inclusion in the state implementation plan provided for under section 49-404.

I. After adoption of a nonattainment or maintenance area plan, if on the basis of the reasonable further progress determination described in subsection F of this section or other information, the control officer determines that any person has failed to implement an emission limitation or other

control measure, means or technique as described in the resolution adopted pursuant to subsection G of this section, the control officer shall issue a written finding to the person, and shall provide an opportunity to confer. If the control officer subsequently determines that the failure has not been corrected, the county attorney, at the request of the control officer, shall file an action in superior court for a preliminary injunction, a permanent injunction, or any other relief provided by law.

J. After adoption of a nonattainment or maintenance area plan, if, on the basis of the reasonable further progress determination described in subsection F of this section or other information, the director determines that any person has failed to implement an emission limitation or other control measure, means or technique as described in the resolution adopted pursuant to subsection G of this section, and that the control officer has failed to act pursuant to subsection I of this section, the director shall issue a written finding to the person and shall provide an opportunity to confer. If the director subsequently determines that the failure has not been corrected, the attorney general, at the request of the director, shall file an action in superior court for a preliminary injunction, a permanent injunction, or any other relief provided by law.

K. Notwithstanding subsections A and B of this section, in any metropolitan area with a metropolitan statistical area population of less than two hundred fifty thousand persons, the governor shall designate an agency that meets the criteria of section 174 of the clean air act and that is recommended by the city that causes the metropolitan area to exist and the affected county. That agency shall prepare and adopt the nonattainment or maintenance area plan. If the governor does not designate an agency, the department shall be certified as the agency responsible for the development of a nonattainment or maintenance area plan for that area.

Chapter 3, AIR QUALITY

Article 2, State Air Pollution Control

49-425. [Rules; hearing](#)

A. The director shall adopt such rules as he determines are necessary and feasible to reduce the release into the atmosphere of air contaminants originating within the territorial limits of the state or any portion thereof and shall adopt, modify, and amend reasonable standards for the quality of, and emissions into, the ambient air of the state for the prevention, control and abatement of air pollution. Additional standards shall be established for particulate matter emissions, sulfur dioxide emissions, and other air contaminant emissions determined to be necessary and feasible for the prevention, control and abatement of air pollution. In fixing such ambient air quality standards, emission standards or standards of performance, the director shall give consideration but shall not be limited to the relevant factors prescribed by the clean air act.

B. No rule may be enacted or amended except after the director first holds a public hearing after twenty days' notice of such hearing. The proposed rule, or any proposed amendment of a rule, shall be made available to the public at the time of notice of such hearing.

C. The department shall enforce the rules adopted by the director.

D. All rules enacted pursuant to this section shall be made available to the public at a reasonable charge upon request.

Chapter 3, AIR QUALITY

Article 3, County Air Pollution Control

49-471.04. Notice of proposed rule or ordinance making

A. Before a board of supervisors acts on a rule or ordinance that is subject to section 49-112, subsection A or a rule or ordinance that does not otherwise qualify under section 49-471.08, subsection A, a control officer shall:

1. Prepare a notice of a proposed rule or ordinance making. The notice shall include both:

(a) A preamble as prescribed in section 49-471.05.

(b) The full text of the rule or ordinance, including the intended actions to make new sections or amend, repeal or renumber the sections of the rule or ordinance.

2. Post the notice of the proposed rule or ordinance making on the county's website. On posting, the control officer shall notify by first class mail, fax or e-mail each person who has made a timely request to the county for notification of the proposed rule or ordinance making and to each person who has requested notification of all proposed rule or ordinance makings. A county may provide the notification prescribed in this paragraph in a periodic newsletter. A control officer may purge the list of persons who requested notification of proposed rule or ordinance makings once each year by providing notice of the purge in the manner prescribed in this paragraph.

B. Before making, amending, repealing or renumbering a rule or ordinance pursuant to section 49-112, subsection B, a control officer and board of supervisors shall follow the procedure established in this section or in section 49-471.08.

C. The county may terminate a notice of proposed rule or ordinance making at any time during the rule or ordinance making process and shall publish the notice of termination on the county's website.

D. If the county determines that there is a substantial change between the proposed rule or ordinance making and a final rule or ordinance making, the county shall prepare a notice of supplemental proposed rule or ordinance making for public review pursuant to the requirements under subsection A, paragraphs 1 and 2 of this section.

49-479. Rules; hearing

A. The board of supervisors shall adopt such rules as it determines are necessary and feasible to control the release into the atmosphere of air contaminants originating within the territorial limits of the county or multi-county air quality control region in order to control air pollution, which rules, except as provided in subsection C shall contain standards at least equal to or more restrictive than those adopted by the director. In fixing such standards, the board or region shall give consideration but shall not be limited to:

1. The latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on health and welfare which may be expected from the presence of an air pollution agent, or combination of agents in the ambient air, in varying quantities.
2. Atmosphere conditions and the types of air pollution agent or agents which, when present in the atmosphere, may interact with another agent or agents to produce an adverse effect on public health and welfare.
3. Securing, to the greatest degree practicable, the enjoyment of the natural attractions of the state and the comfort and convenience of the inhabitants.

B. No rule may be enacted or amended except after the board of supervisors first holds a public hearing after twenty days' notice of such hearing. The proposed rule, or any proposed amendment of a rule, shall be made available to the public at the time of notice of such hearing.

C. A county may adopt or amend a rule, emission standard, or standard of performance that is as stringent or more stringent than a rule, emission standard or standard of performance for similar sources adopted by the director only if the county complies with the applicable provisions of section 49-112.

D. All rules enacted pursuant to this section shall be made available to the public at a reasonable charge upon request.

Exhibit B-III: Public Notice and Affidavit of Publication

THE ARIZONA REPUBLIC

PO Box 194, Phoenix, Arizona 85001-0194

Phone 1-602-444-7315

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AFFIDAVIT OF PUBLICATION

AZ DEPT EVIRON QUAL
1110 W. WASHINGTON ST. 3 RD FL
PHOENIX, AZ 85007

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY PUBLIC COMMENT PERIOD AND HEARING
The Arizona Department of Environmental Quality (ADEQ) is holding a second notice and comment period for the proposed Marginal Ozone state implementation plan (SIP) revision for the Yuma Nonattainment Area (Area) in order to comply with Clean Air Act (CAA) section 110 and 40 CFR 51.102 public notice requirements.

The purpose of the proposed SIP revision is to bring the Area into compliance with federal requirements for marginal nonattainment areas as required under CAA Title I, Part D for the 2015 8-hour Ozone National Ambient Air Quality Standards (NAAQS). ADEQ is requesting the U.S. Environmental Protection Agency (EPA) approve this SIP revision into the Arizona SIP.

ADEQ welcomes comments on the proposed SIP revision during a public comment period held between October 9, 2020, and November 12, 2020 and at a virtual public hearing held on November 12th, 2020 at 3:00 pm. Comments must be received or postmarked no later than 5:00 pm on November 12th, 2020. Comments may be mailed, faxed, or emailed to: Ray Caccavale, Arizona Department of Environmental Quality, 1110 W. Washington St., Phoenix, AZ 85007. Phone: (602)-771-8730; Fax: (602) 771-2299; email Caccavale.raymond@azdeq.gov. Additional information, including how to access the virtual public hearing, can be found at <https://azdeq.gov/public-notice> or by contacting Ray Caccavale using the contact information above.

Requests for language interpretation services or disability accommodations for the hearing date must be made at least 48 hours in advance by contacting 7-1-1 for TDD; (602) 771-2215 for disability accessibility, or Ian Bingham, Title VI Nondiscrimination Coordinator at (602) 771-4300 or ldb@azdeq.gov.

Review the proposed SIP revision online at: <https://azdeq.gov/notices> or at the ADEQ Records Center, 1110 W. Washington St., Phoenix, AZ 85007. For Records Center hours or appointment scheduling, call (602) 771-4380 or (800) 234-5677 ext. 602-771-4380. A copy of the proposed SIP revision can also be viewed at the Yuma County Clerk of the Boards Office, 198 S. Main Street Yuma, AZ 85364. For hours, call (928) 373-1107

Pub: Oct 9, 10, 2020

Order # 0004411213 # of Affidavits

P.O #

Published Date(s):

10/09/20, 10/10/20

STATE OF WISCONSIN }
COUNTY OF BROWN } SS.

I, being first duly sworn, upon oath deposes and says: That I am the legal clerk of the Arizona Republic, a newspaper of general circulation in the counties of Maricopa, Coconino, Pima and Pinal, in the State of Arizona, published weekly at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the dates indicated.

Sworn to before me this

12 TH day of
OCTOBER 2020

Notary Public

My Commission expires: 9.19.21



Exhibit B-IV: Public Hearing Sign-in Sheet



Air Quality Division Sign-In Sheet

Subject: Proposed State Implementation Plan Revision for the Yuma
Ozone Marginal Nonattainment Area – Public Hearing

Date: November 12, 2020

This public hearing was held over the phone in a conference call style session where the hearing officer took a roll call of names to establish those participating in the proceeding. No physical sign-in sheet was used.

	<u>Name</u>	<u>Organization</u>
1.	Paul Melcher	Yuma County
2.	Jeremy Gerlach	Veridus LLC
3.	Beverly Chenausky	Arizona Department of Transportation
4.	Zachary Dorn	ADEQ
5.	Farah Esmaeili	ADEQ
6.	Bruce Friedl	ADEQ
7.	Matthew Ivers	ADEQ
8.	Lhamo Lemoine	ADEQ
9.		
10		

Exhibit B-V: Public Hearing Officer Certification

Air Quality Division

Public Hearing Presiding Officer Certification

I, Zachary Dorn, the designated Presiding Officer, do hereby certify that the virtual public hearing for the proposed State Implementation Plan revision for the Yuma Marginal Ozone Nonattainment Area was held by the Arizona Department of Environmental Quality on November 12, 2020. The public hearing was conducted in accordance with public notice requirements by publication in *The Arizona Republic* on October 9 and 10, 2020. Furthermore, I do hereby certify that the public hearing was recorded from the opening of the public record through concluding remarks and adjournment, and the transcript provided contains a full, true, and correct record of the above-referenced public hearing.

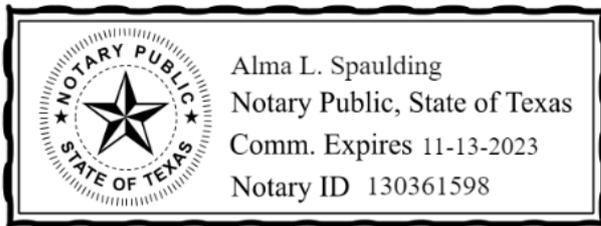
Dated this 19th day of November, 2020.



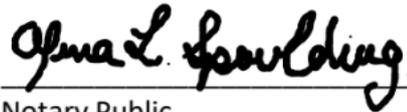
Signature of Hearing Officer

State of Texas)
) ss.
County of Williamson)

Subscribed and sworn to before me on this 19th day of November, 2020.



Notarized Online with NotaryLive.com



Notary Public

My commission expires: Nov 13, 2023

This document is signed by

	Signatory	CN=Alma L Spaulding, OU=A01410C0000017132EEDE0700019977, O=Unaffiliated, C=US
	Date/Time	Thu Nov 19 22:02:17 UTC 2020
	Issuer-Certificate	CN=IGC CA 1, OU=IdenTrust Global Common, O=IdenTrust, C=US
	Serial-No.	85078079974712402439378620863415743979
	Method	urn:adobe.com:Adobe.PPKLite:adbe.pkcs7.sha1 (Adobe Signature)

Exhibit B-VI: Public Hearing Transcript

1 **PROPOSED STATE IMPLEMENTATION PLAN (SIP) REVISION**

2 **Yuma Ozone Marginal SIP**

3
4 Oral Proceeding

5 Transcript

6
7 November 12, 2020

8
9 Zac Dorn: Thank you everyone for coming. I now open this hearing on the proposed State
10 Implementation Plan (SIP) revision for the Yuma Ozone Marginal Nonattainment Area.

11
12 This proceeding is being recorded and will be preserved for the record.

13
14 Today is November 12, 2020 and the time is now 3:02 p.m. This proceeding is being carried out
15 via conference call due to the COVID-19 situation in Arizona. My name is Zac Dorn and I have
16 been appointed by the Director of the Arizona Department of Environmental Quality (ADEQ) to
17 preside at this proceeding.

18
19 At this time I will take a quick roll call of those participating in this hearing, and I will just ask
20 that you state your name along with the correct spelling and pronunciation and organization at
21 this time.

22
23 Paul Melcher: This is Paul Melcher M-E-L-C-H-E-R with Yuma County.

24
25 Mr. Dorn: Do we have anyone else on the line from outside of ADEQ?

26
27 Jeremy Gerlach: Jeremy Gerlach with Veridus.

28
29 Mr. Dorn: Could you please spell your last name for us?

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Mr. Gerlach: Yes, it is G-E-R-L-A-C-H.

Mr. Dorn: Thank you very much. Is there anyone else?

Beverly Chenausky: Beverly Chenausky, Arizona Department of Transportation. Chenausky is C-H-E-N-A-U-S-K-Y and Beverly is B-E-V-E-R-L-Y.

Mr. Dorn: Thank you. I think that may be everyone.

The purpose of this oral proceeding is to provide the public with an opportunity to hear a summary of the proposed SIP revision and to provide comments on such revision.

The Department representative(s) for today's hearing are Farah Esmaeili and Bruce Friedl of the Air Quality Improvement Planning Section.

Public notice of the comment period and hearing was published in *The Arizona Republic* on October 9 and 10, 2020. Copies of the revisions were made available on ADEQ's website on October 9, 2020, in the ADEQ Records Center, and at the Office of the Clerk in Yuma County and will remain available until the close of the comment period, which is 5:00 p.m. today.

Written comments may be mailed, faxed, or emailed to:
Ray Caccavale, Arizona Department of Environmental Quality,
1110 W. Washington St., Phoenix, AZ 85007.
Phone: (602)-771-8730; Fax: (602) 771-2299;
Or you can email comments at Caccavale.raymond@azdeq.gov.

Comments must be received or postmarked no later than 5:00 pm on November 12, 2020.

1 If you wish to make a verbal comment please wait until the summary of the SIP revision has
2 concluded and you are prompted to verbally express your comments and concerns in an
3 orderly fashion by the host.

4
5 Comments made during the formal comment period are required by law to be considered by
6 the Department when preparing the final submission of the SIP to the U.S. Environmental
7 Protection Agency. The Department will include a responsiveness summary for written and oral
8 comments received during the formal comment period.

9
10 The agenda for this hearing is as follows:

11
12 First, we will present a brief overview of the proposed SIP revision.

13
14 Then I will conduct the oral comment portion. At that time I will call on everyone who is present
15 on the line and wishes to make a comment to again state their names. Afterwards I will go
16 down the list of names and request each individual express their comments or concerns one at
17 a time as they are called on.

18
19 Please be aware that any comments at today's hearing that you want the Department to
20 formally consider must be given either in writing or on the record during this oral proceeding.

21
22 At this time Bruce will give a brief overview of the proposal.

23
24 * * * * *

25 Bruce Friedl: Thank you Zac.

26
27 On June 4, 2018, the U.S. Environmental Protection Agency or EPA designated a portion of
28 Yuma County “nonattainment” for the 2015 Ozone National Ambient Air Quality Standards,
29 classifying the area as “marginal.” According to Clean Air Act Title I, Part D and EPA’s

1 implementation rule, requirements for marginal nonattainment areas include adoption of an
2 emissions statement rule for stationary sources, submittal of a base year emissions inventory
3 followed by periodic updates, and implementation of a nonattainment area preconstruction
4 permit program (known as Nonattainment New Source Review or NNSR) for construction and
5 operation of new or modified stationary sources located in the area.

6
7 To meet these requirements, ADEQ includes in this SIP revision an amended Arizona
8 Administrative Code R18-2-327 to require annual emissions statements for stationary sources
9 located in ozone nonattainment areas that emit ozone precursors. This SIP revision also
10 includes a 2017 emissions inventory for both annual and ozone season day (OSD) emissions.

11
12 At this time, ADEQ's NNSR program is fully approved with respect to ozone. EPA, however, has
13 notified ADEQ that in order to be approvable in the future the state's NSR program must be
14 amended to conform to the current interprecursor trading (IPT) provisions for offsets in 40 CFR
15 51.165(a)(11) and part 51 Appendix S. Under 40 CFR 51.1314, ADEQ must submit a
16 Nonattainment NSR plan for the Yuma Nonattainment Area by August 3, 2021, three years from
17 the effective date of the nonattainment designation. ADEQ is working on a rule amendment
18 addressing IPT and plans to submit the amendment together with the otherwise fully approved
19 Nonattainment NSR program to satisfy the Nonattainment NSR requirements for Yuma.

20

21 * * * * *

22

23 Mr. Dorn: This concludes the overview portion of this proceeding.

24

25 * * * * *

26

27 I now open this proceeding for oral comments.

28

1 I ask that everyone who is participating in this hearing and wishes to make a comment to please
2 state their names. Afterwards I will go down the list of names and ask each individual to
3 verbally express their comments or concerns, one at a time as they are called on.

4

5 Hearing no requests to make a comment,

6

7 Mr. Melcher: Sorry, I misunderstood. I thought you meant that you would call on people.

8

9 Mr. Dorn: No, I am sorry Paul. I apologize. Do you wish to make a comment?

10

11 Mr. Melcher: My only comment was I just wanted to reinforce or ask the question again, all the
12 comments that were submitted at the previous public hearing were being carried over and will
13 be included as part of the preloaded public hearing comment summary.

14

15 Mr. Dorn: Yes.

16

17 Mr. Melcher: Ok, thank you.

18

19 Mr. Dorn: Are there any other public comments at this time?

20

21 Hearing none, this concludes the oral comment portion of this proceeding.

22

23 * * * * *

24

25 If you have not already submitted written comments, you may submit them at this time. Again,
26 the comment period for this proposal ends today at 5:00 p.m.

27

28 Thank you very much for attending.

29

1 The time is now 3:11 p.m. and I now close this oral proceeding.

Exhibit B-VII: Compilation of Comments and State Responses



Responsiveness Summary

Response to Testimony Taken at Oral Proceedings and Written Comments Received on the Proposed State Implementation Plan Revision Marginal Ozone Plan for the Yuma Nonattainment Area

An oral proceeding on the proposed State Implementation Plan (SIP) revision, main document, was held on Wednesday, July 1, 2020, at 3:00 p.m. The public comment period began on May 29, 2020, and closed on July 1, 2020, at 5:00 p.m. The Arizona Department of Environmental Quality (ADEQ) received several verbal and written comments on the proposed SIP revision during this time.

A second public comment period began on October 9, 2020, and closed on November 12, 2020, at 5:00 p.m. Materials posted for public review and comment during this period included a revised main document, the *Yuma Ozone Emission Inventory Technical Support Document (TSD)*, and the published Notice of Proposed Rulemaking (NPRM) for amendments to Arizona Administrative Code (A.A.C.) R18-2-327. A public hearing on the revised SIP and TSD was held on Thursday, November 12, 2020, at 3:02 p.m. ADEQ received one verbal comment on the proposed SIP revision at the hearing. Comments received during both public comment periods are addressed in this responsiveness summary below.

As noted above, at the time this SIP revision was posted for public comment on October 9, 2020, the rulemaking process for amendments to A.A.C. R18-2-327 had not yet been completed and the proposed SIP contained only the proposed rulemaking. The rule was subsequently approved by the Governor's Regulatory Review Council on November 3, 2020 and published in the Arizona Administrative Register on December 4, 2020, with an effective date of January 19, 2021. No changes were made from the proposed to the final version of the rule. The final rule is now included in Appendix C and Sections A.2, A.8.1, and Chapter D of the final SIP were updated to reflect completion of the rulemaking.

During its final review of the plan, ADEQ also made minor changes for clarity and to correct grammatical and formatting errors.

Comments Received October 9, 2020 – November 12, 2020

- **Comment #1:** Commenter asked whether all the comments that were submitted at the previous public hearing will be included as part of the comment summary.

Submitted by: Paul Melcher, Yuma County (comment submitted orally at public hearing)

ADEQ Response: All comments received during the first public comment period and hearing (May 29, 2020 – July 1, 2020) are addressed in this responsiveness summary.

Comments Received May 29, 2020 – July 1, 2020

- **Comment #1:** Commenter expressed concern with sources of precursor emissions and ozone originating outside the nonattainment area, as well as that produced by vehicles on Interstate-8, that contribute to the total concentration of ozone in the Yuma area; sources that are outside the control of the stakeholders in the Yuma Nonattainment Area. These all need to be addressed in the SIP.

Submitted by: Harold Maxwell (comment submitted orally at public hearing)

ADEQ Response: To evaluate the effects of ozone precursor transport from other areas to the Yuma Ozone Nonattainment Area, ADEQ used the Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) to perform back trajectory analyses for the Yuma Super site monitor. Back trajectories were modeled for all 35 daily maximum 8-hour ozone exceedance days during 2014-2018. The results of these analyses showed that air parcels often travel from southern California and portions of northern Mexico to the Yuma supersite on exceedance days. This lends to the understanding that California and Mexico emissions impact the Yuma Ozone Nonattainment Area as the winds transport emissions on higher concentration ozone days. International emission transport and marine vessel emissions can be potential contributors to Yuma ozone concentrations. Some of the air parcels also travel from the Phoenix and Tucson areas to the Yuma area. The details of this analysis and associated results are described in Section A5.4 of the *Yuma Ozone Emission Inventory Technical Support Document*. More accurate identification and quantification of the emissions that are transported to the Yuma Nonattainment Area from other areas will require more sophisticated analyses such as photochemical modeling, which is outside of the scope of this SIP revision.

- **Comment #2:** The commenter reiterated the issues raised by Mr. Maxwell (see Comment #1). The commenter expressed concern with the SIP not addressing outside sources of emissions bleeding into the Yuma area and causing the area to exceed the National Ambient Air Quality Standards (NAAQS) for ozone. He requested the SIP pay more attention to this issue. Additionally, this commenter informed the public hearing officer that he would be submitting further written comments via email prior to the close of the comment period.

Submitted by: Paul Melcher, Yuma County (comment submitted orally at public hearing)

ADEQ Response: See response to Comment #1. ADEQ may perform further analyses of outside ozone sources that impact the Yuma area as needed to meet future ozone planning area requirements.

- **Comment #3:** Commenter agreed with the positions expressed by Mr. Maxwell and Mr. Melcher (see Comments #1 and #2).

Submitted by: Lin Tan crazy (comment submitted orally at public hearing)

ADEQ Response: See response to Comment #1.

- **Comment #4:** This commenter stated: “my experience has shown that our status of being noncompliant is influenced by outside sources of Yuma County. The issues affecting that remissions from imperial County California in Mexicali Mexico in San Luis Mexico. The omissions that are resident to our county are minimal and have a minor influence on our attainment numbers. Our nonattainment compliance certainly is an issue concerning economic development.”

Submitted by: Ken Rosevear (comment submitted electronically)

ADEQ Response: See response to Comment #1. ADEQ has taken into account the transport of emissions into the Yuma Nonattainment Area from outside its boundaries.

- **Comment #5:** Commenter noted the following typographical and formatting errors.
 - a) Section 1.2 the first sentence includes an **Error! Reference source not found.**
 - b) Section 1.2 the date of publication should read April 10, 2020.
 - c) Section 1.4 Figure 1 should be included on the same page as the beginning of Section 1.4.
 - d) Figure 1 should be redrawn to be clearer/cleaner.
 - e) Section 1.5 the second paragraph on the page includes an **Error! Reference source not found.**
 - f) Section 1.7.1 includes an **Error! Reference source not found.**
 - g) Figure 2 and Legend need to be moved up the page. There is too much blank space.
 - h) Section 1.9 Change the dates to May 29, 2020 and July 1, 2020.
 - i) Section 1.9.1 Remove the duplicate period in the first sentence.

Submitted by: Paul Melcher, Yuma County (comment submitted electronically)

ADEQ Response: ADEQ made changes to the SIP document as appropriate. Please note that since these comments were submitted the Chapter/Section numbering system was changed from a numerical (e.g., 1.4) to an alphanumeric (e.g., A.4) format.

- **Comment #6:** Commenter recommended the following language changes.
 - a) Section 1.7.2 Change the first sentence in the second paragraph to read: *Yuma County’s valley and mesa areas border California and the Colorado River to the west, Mexico to the south, the Gila Mountain Range to the east and the Laguna Mountains to the Northeast.* The County borders are different as compared to the nonattainment area. Remove the extra comma in the sentence.

- b) Unless the emissions modeling must be based on 2017 population estimates to match the 2017 emissions inventory update, suggest updating the nonattainment area population estimates to reflect 2019 estimates.
- c) Section 1.7.4. Change the last sentence in the first paragraph to read: *The local economy is also driven by health care services industries, some industrial manufacturing and small private businesses operating throughout the county.*
- d) Section 1.7.4 includes the following statement: *The Yuma Ozone Nonattainment area hosts one of the busiest sections of interstate in Arizona, the I-8, which connects Arizona to Southern California.* Please cite a source for this general statement or provide more specifics related to other areas of I-8 to provide perspective on the amount of vehicles traveling in the Yuma County area.
- e) Section 1.7.4 includes the following statement: *Because the diverse economy is located in such a hot, arid environment the opportunity for ozone formation is high, and results in an ozone season in Yuma that begins in late spring, around March in Arizona, and continues on into September.* Please provide a source or reference that supports the statement's validity related to the ozone season.
- f) Section 2.2 includes a statement that reads: *Intense annual spring and summer temperatures regularly exceeding 115 °F...* The phrase *regularly exceeding* is too vague and would give the reader the false impression of typical or average summertime temperatures in Yuma County. Suggest rephrasing that accurately represents the percentage of days with daytime high temperature exceeding 115 °F.
- g) Section 2.2 includes a statement that reads: *The Yuma NAA has demonstrated historical ozone concentration increases annually, primarily during the late spring through early fall months.* This statement would appear to be misleading given Yuma County has experienced two consecutive years of declining annual readings and is poised to become eligible for reinstatement as attainment with a third year of declining annual readings.
- h) Section 2.2 includes a statement that reads: *Intense annual spring and summer temperatures regularly exceeding 115 °F accompanied with the large volume of vehicle traffic and agricultural activities in the nonattainment area make for ideal ambient ozone production conditions.* This statement could lead the reader to think that agricultural activities are a main contributor to ozone formation when it is unclear if the reference is to plant generation as part of production related to volatile organic compounds or vehicular generation of nitrogen oxides or volatile organic compounds. It does not seem justifiable to identify one industry in such a manner when the largest point source of emissions in the Yuma Ozone Nonattainment Area is the APS-Yucca Power Plant. Additionally, the timeframe period mentioned in this paragraph is the least active of the Yuma County agricultural production cycle.
- i) Section 3.4 includes a statement that reads: *The primary producer of VOCs and NOx emissions in the nonattainment area are Passenger Trucks, which is likely the result of the nonattainment area being located adjacent to a major trucking and travel corridor.* In context, the term *passenger trucks* should be changed to freight haulers or tractor trailers unless the intent was to reference passenger vehicles.



Responsiveness Summary

j) Conclusion: Since the data or modeling exists that demonstrates the Yuma Ozone Nonattainment Area would be able to achieve attainment but/for transport emissions from California and Mexico, it should be mentioned in the report with the source identified.

Submitted by: Paul Melcher, Yuma County (comment submitted electronically)

ADEQ Response: The SIP provides population data for 2017 which is consistent with the population based emissions estimates for the 2017 base year emissions inventory (see Comment #6, b). Transport of emissions (see Comment #6, j) is discussed in the response to Comment #1. All other comments have been taken into consideration and changes were made in the final SIP document as appropriate.

Appendix C: Rules for Approval – Arizona Administrative Code R18-2-327

Exhibit C-I: Notice of Proposed Rulemaking

Exhibit C-II: Notice of Final Rulemaking

Exhibit C-I: Notice of Proposed Rulemaking



Arizona
Secretary
of State

Digitally signed
by Arizona
Secretary of
State
Date: 2020.04.10
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April 10, 2020

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DIRECTOR
Administrative Rules Division
Scott Cancelosi

PUBLISHER
Secretary of State
KATIE HOBBS

RULES MANAGING EDITOR
Arizona Administrative Register
Rhonda Paschal

From the Publisher

ABOUT THIS PUBLICATION

The authenticated pdf of the *Administrative Register* (A.A.R.) posted on the Arizona Secretary of State's website is the official published version for rulemaking activity in the state of Arizona.

Rulemaking is defined in Arizona Revised Statutes known as the Arizona Administrative Procedure Act (APA), A.R.S. Title 41, Chapter 6, Articles 1 through 10.

The *Register* is cited by volume and page number. Volumes are published by calendar year with issues published weekly. Page numbering continues in each weekly issue.

In addition, the *Register* contains notices of rules terminated by the agency and rules that have expired.

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Rules can be: made (all new text); amended (rules on file, changing text); repealed (removing text); or renumbered (moving rules to a different Section number). Rulemaking activity published in the *Register* includes: proposed, final, emergency, expedited, and exempt rules as defined in the APA, and other state statutes.

New rules in this publication (whether proposed or made) are denoted with underlining; repealed text is stricken.

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Every document filed in the office is assigned a file number. This number, enclosed in brackets, is located at the top right of the published documents in the *Register*. The original filed document is available for 10 cents a page.

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Katie Hobbs

ADMINISTRATIVE RULES STAFF

DIRECTOR
Scott Cancelosi

RULES MANAGING EDITOR
Rhonda Paschal

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Administrative Rules Division
Office of the Secretary of State
1700 W. Washington Street, Fl. 2
Phoenix, AZ 85007
(602) 364-3223

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Look for the Agency Notice

Review (inspect) notices published in the *Arizona Administrative Register*. Many agencies maintain stakeholder lists and would be glad to inform you when they proposed changes to rules. Check an agency's website and its newsletters for news about notices and meetings.

Feel like a change should be made to a rule and an agency has not proposed changes? You can petition an agency to make, amend, or repeal a rule. The agency must respond to the petition. (See A.R.S. § 41-1033)

Attend a public hearing/meeting

Attend a public meeting that is being conducted by the agency on a Notice of Proposed Rulemaking. Public meetings may be listed in the Preamble of a Notice of Proposed Rulemaking or they may be published separately in the *Register*. Be prepared to speak, attend the meeting, and make an oral comment.

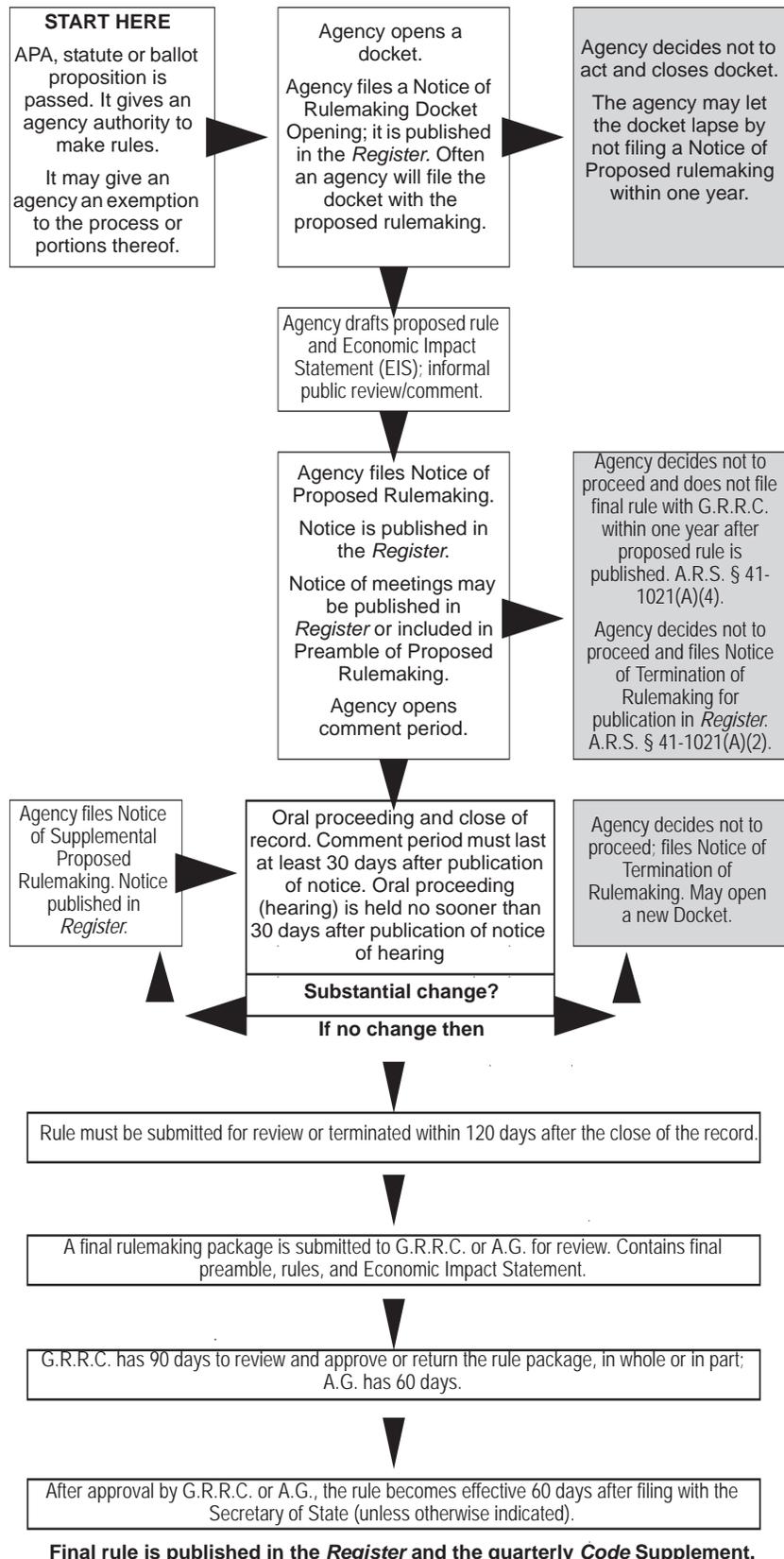
An agency may not have a public meeting scheduled on the Notice of Proposed Rulemaking. If not, you may request that the agency schedule a proceeding. This request must be put in writing within 30 days after the published Notice of Proposed Rulemaking.

Write the agency

Put your comments in writing to the agency. In order for the agency to consider your comments, the agency must receive them by the close of record. The comment must be received within the 30-day comment timeframe following the *Register* publication of the Notice of Proposed Rulemaking.

You can also submit to the Governor's Regulatory Review Council written comments that are relevant to the Council's power to review a given rule (A.R.S. § 41-1052). The Council reviews the rule at the end of the rulemaking process and before the rules are filed with the Secretary of State.

Arizona Regular Rulemaking Process



Definitions

Arizona Administrative Code (A.A.C.): Official rules codified and published by the Secretary of State's Office. Available online at www.azsos.gov.

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Administrative Procedure Act (APA): A.R.S. Title 41, Chapter 6, Articles 1 through 10. Available online at www.azleg.gov.

Arizona Revised Statutes (A.R.S.): The statutes are made by the Arizona State Legislature during a legislative session. They are compiled by Legislative Council, with the official publication codified by Thomson West. Citations to statutes include Titles which represent broad subject areas. The Title number is followed by the Section number. For example, A.R.S. § 41-1001 is the definitions Section of Title 41 of the Arizona Administrative Procedures Act. The "§" symbol simply means "section." Available online at www.azleg.gov.

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Docket: A public file for each rulemaking containing materials related to the proceedings of that rulemaking. The docket file is established and maintained by an agency from the time it begins to consider making a rule until the rulemaking is finished. The agency provides public notice of the docket by filing a Notice of Rulemaking Docket Opening with the Office for publication in the *Register*.

Economic, Small Business, and Consumer Impact Statement (EIS): The EIS identifies the impact of the rule on private and public employment, on small businesses, and on consumers. It includes an analysis of the probable costs and benefits of the rule. An agency includes a brief summary of the EIS in its preamble. The EIS is not published in the *Register* but is available from the agency promulgating the rule. The EIS is also filed with the rulemaking package.

Governor's Regulatory Review (G.R.R.C.): Reviews and approves rules to ensure that they are necessary and to avoid unnecessary duplication and adverse impact on the public. G.R.R.C. also assesses whether the rules are clear, concise, understandable, legal, consistent with legislative intent, and whether the benefits of a rule outweigh the cost.

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Session Laws or "Laws": When an agency references a law that has not yet been codified into the Arizona Revised Statutes, use the word "Laws" is followed by the year the law was passed by the Legislature, followed by the Chapter number using the abbreviation "Ch.," and the specific Section number using the Section symbol (§). For example, Laws 1995, Ch. 6, § 2. Session laws are available at www.azleg.gov.

United States Code (U.S.C.): The Code is a consolidation and codification by subject matter of the general and permanent laws of the United States. The Code does not include regulations issued by executive branch agencies, decisions of the federal courts, treaties, or laws enacted by state or local governments.

Acronyms

A.A.C. – *Arizona Administrative Code*

A.A.R. – *Arizona Administrative Register*

APA – *Administrative Procedure Act*

A.R.S. – *Arizona Revised Statutes*

CFR – *Code of Federal Regulations*

EIS – *Economic, Small Business, and Consumer Impact Statement*

FR – *Federal Register*

G.R.R.C. – *Governor's Regulatory Review Council*

U.S.C. – *United States Code*

About Preambles

The Preamble is the part of a rulemaking package that contains information about the rulemaking and provides agency justification and regulatory intent.

It includes reference to the specific statutes authorizing the agency to make the rule, an explanation of the rule, reasons for proposing the rule, and the preliminary Economic Impact Statement.

The information in the Preamble differs between rulemaking notices used and the stage of the rulemaking.



6. **A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**

Not applicable

7. **A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

8. **The preliminary summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement (EIS) under A.R.S. § 41-1055.

An identification of the rulemaking.

This EIS addresses a rulemaking designed to bring ADEQ’s emission reporting rules into conformance with federal requirements and reduce the reporting requirements of Class II air quality permitted sources.

ADEQ anticipates the economic impact of this rulemaking on, businesses, consumers, and ADEQ to be beneficial due to the reduction in required annual emission inventory questionnaires. ADEQ anticipates the addition of federally required ozone emission statements will affect only a limited number of unpermitted sources. A more detailed analysis of these changes is addressed in section 5 of this notice of proposed rulemaking.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The proposed changes affect permitted air quality sources statewide and stationary sources located in ozone nonattainment areas that emit ozone precursors. Some Class II air quality permitted sources will directly benefit from this rulemaking by reducing the reporting burden from annually to a minimum of once every three years, and as required by the Director. Stationary sources located in ozone nonattainment areas that emit ozone precursors will directly bear the costs of producing the new federal emission statement requirements.

A cost benefit analysis of the following:

(a) The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.

ADEQ will directly benefit from the changes in reporting frequency from Class II air quality permitted sources. ADEQ anticipates this proposed rulemaking will free up at least 100 hours of staff time per year by reducing the number of questionnaires the agency must review within a three-year period. ADEQ will bear the additional costs associated with reviewing the new federally required emission statements.

(b) The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking.

ADEQ does not anticipate any economic impacts to political subdivisions of the state as a result of this proposed rulemaking.

(c) The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.

ADEQ anticipates some Class II permitted air quality sources will directly benefit from this rulemaking by reducing the number of emission inventory questionnaires required in a three year period. ADEQ anticipates these amendments will reduce the reporting requirements and associated costs on approximately 275 sources.

ADEQ anticipates the costs associated with the new federal reporting requirements on Class II stationary sources located in ozone nonattainment areas that emit ozone precursors to be minimal. ADEQ estimates the new federally required emission statement requirements will require approximately two hours of administrative staff time per source per year. At this time, ADEQ has not identified any sources that would be subject to the new federally required emission statements.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

ADEQ anticipates any additional costs imposed on businesses because of this rulemaking will be minimal as per the reasons described above. Accordingly, ADEQ anticipates minimal impact on private employment or on the employment of any political subdivision subject to the proposed amendments.

A statement of the probable impact of the rulemaking on small businesses.

(a) An identification of the small businesses subject to the rulemaking.

Under A.R.S. § 41-1001(21) “Small business” means a concern, including its affiliates, which is [1] independently owned and operated, which is [2] not dominant in its field and which [3] employs fewer than one hundred full-time employees or which had gross annual receipts of less than four million dollars in its last fiscal year.

Currently ADEQ does not have a method to determine which of the approximately 275 Class II air quality permitted sources meet the criteria of a small business. However, given that the proposed amendments to the reporting frequency for these sources is of a beneficial nature, ADEQ is confident that any of the sources that meet the criteria of a small business would benefit from removing this cumbersome reporting requirement. For stationary sources located in ozone nonattainment areas that emit ozone precursors, ADEQ has not identified any sources that meet the definition of a small business. Within the Yuma ozone nonattainment area,



ADEQ has identified two dry cleaners and one carpet manufacturer as potentially meeting the criteria of a small business that may be subject to the proposed emission statement requirements.

(b) The administrative and other costs required for compliance with the rulemaking.

ADEQ currently estimates the administrative cost to comply with the proposed emission statement requirements to be approximately two hours of administrative staff time per source per year. ADEQ does not anticipate any additional costs to be placed on small businesses as a result of this proposed rulemaking.

(c) A description of the methods that the agency may use to reduce the impact on small businesses.

(i) Establishing less costly compliance requirements in the rulemaking for small businesses.

ADEQ is committed to working closely with small businesses subject to this rulemaking to streamline the creation and submittal of required emissions statements. ADEQ has streamlined the process of submitting all questionnaires discussed in the rulemaking by giving participants the option to submit electronic or paper copies demonstrated in R18-2-327(A)(3). ADEQ also anticipates the provisions of this rulemaking will limit the amount of administrative staff time necessary to comply with the proposed amendments.

(ii) Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.

Due to federally mandated deadlines for emissions reporting, ADEQ is not able to establish less stringent deadlines for small businesses than those offered to all sources. ADEQ commits to working closely with small businesses subject to emission statement requirements to further mitigate any issues related to submission schedules and deadlines.

(iii) Exempting small businesses from any or all requirements of the rulemaking.

ADEQ has identified that under 42 U.S.C. 7511a(a)(3)(B)(ii) the agency may waive the application of federally required emission statement requirements to any class or category of stationary sources which emit less than 25 tons per year of ozone precursors contingent on the agency meeting other inventory submission requirements. ADEQ anticipates this will serve to exempt any small business that emits fewer than 25 tons per year of ozone precursors from being subject to the new federal emission statement requirements.

(d) The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.

Not applicable

A statement of the probable effect on state revenues.

Not applicable

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

ADEQ was unable to identify any less intrusive or less costly alternative methods of achieving the proposed amendments to A.A.C. R18-2-327.

9. The agency's contact person who can answer questions about the economic, small business and consumer impact statement:

Name: Elias Toon
Address: Department of Environmental Quality
Air Quality Division, AQIP Section
1110 W. Washington Ave.
Phoenix, AZ 85007
Telephone: (602) 771-4665
Fax: (602) 771-2299
E-mail: Toon.Elias@azdeq.gov

10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

All comments submitted during the public review period of April 3, 2020 through May 11, 2020 may be mailed, copied or faxed to:

Elias Toon, Air Quality Division
Arizona Department of Environmental Quality
1110 W. Washington St., Phoenix, AZ 85007
Fax (602) 771-2299; email Toon.Elias@azdeq.gov.

The public hearing for the rules will be conducted on: May 11, 2020 at 3:30 p.m.

Arizona Department of Environmental Quality
1110 W. Washington St., Room 3175
Phoenix, AZ 85007

11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

There are no matters prescribed by statute applicable specifically to ADEQ or this specific rulemaking.



a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

This rule does require a permit nor do the proposed amendments add such a requirement.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

This proposed rule amendment will help Arizona comply with federal Clean Air Act, Title I, Part D. This rulemaking is no more stringent than that which is required by federal law.

c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:

No analysis was submitted to ADEQ.

12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

There are no incorporations by reference added to the rules in this action.

13. The full text of the rules follows:

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR POLLUTION CONTROL

ARTICLE 2. AMBIENT AIR QUALITY STANDARDS; AREA DESIGNATIONS; CLASSIFICATIONS

Section

R18-2-327. ~~Annual~~ Emissions Inventory Questionnaire and Emissions Statement

ARTICLE 2. AMBIENT AIR QUALITY STANDARDS; AREA DESIGNATIONS; CLASSIFICATIONS

R18-2-327. ~~Annual~~ Emissions Inventory Questionnaire and Emissions Statement

A. Emissions Inventory Questionnaire Requirements

1. Every source subject to permit requirements under this Chapter shall complete and submit to the Director an ~~annual~~ emissions inventory questionnaire as follows: The questionnaire is due by March 31 or 90 days after the Director makes the inventory form available, whichever occurs later, and shall include emission information for the previous calendar year.

a. Sources Requiring a Class I Permit under R18-2-302(B). Sources requiring a Class I permit under R18-2-302(B) shall complete and submit to the Director an emissions inventory questionnaire no later than June 1 of each year.

b. Sources Requiring a Class II Permit under R18-2-302(B):

i. Sources requiring a Class II permit under R18-2-302(B) shall complete and submit to the Director an emissions inventory questionnaire no later than June 1 every three (3) years beginning June 1, 2021.

ii. At the Director's request, sources requiring a Class II permit under R18-2-302(B) may be required to complete and submit emissions inventory questionnaires in addition to the triennial emissions inventory questionnaire required under subsection (A)(1)(b)(i). The Director shall notify the owner or operator of the source in writing of the decision to require additional emissions inventory questionnaires.

2. These requirements apply whether or not a permit has been issued and whether or not a permit application has been filed.

3. ~~The~~ emissions inventory questionnaire shall be on an electronic or paper form provided by the Director and shall include the following information for the previous calendar year:

1-a. ~~The~~ source's name, description, mailing address, contact person and contact person phone number, and physical address and location, if different than the mailing address.

2-b. ~~Process~~ information for the source, including design capacity, throughput, operations schedule, and emissions control devices, their description and efficiencies.

3-c. ~~The~~ actual quantity of emissions from permitted emission points and fugitive emissions as provided in the permit, including documentation of the method of measurement, calculation, or estimation, determined pursuant to subsection (C), of the following regulated air pollutants:

a-i. ~~Any~~ single regulated air pollutant in a quantity greater than 1 ton or the amount listed for the pollutant in the definition of "significant" in R18-2-101(131)(a) or (b), whichever is less.

b-ii. ~~Any~~ combination of regulated air pollutants in a quantity greater than 2 1/2 tons.

d. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

4. An amendment to an emissions inventory questionnaire, containing the documentation required by subsection (A)(3), shall be submitted to the Director by any source whenever it discovers or receives notice, within two years of the original submittal, that incorrect or insufficient information was submitted to the Director by a previous emissions inventory questionnaire. The amendment shall be submitted to the Director within 30 days of discovery or receipt of notice. If the incorrect or insufficient information resulted in an incorrect annual emissions fee, the Director shall require that additional payment be made or shall apply an amount as a credit to a future annual emissions fee. The submittal of an amendment under this subsection shall not subject the owner or operator to an enforcement action or a civil or criminal penalty if the original submittal of incorrect or insufficient information was not due to willful neglect.

5. The Director may require submittal of supplemental emissions inventory questionnaires for air contaminants pursuant to A.R.S. §§ 49-422, 49-424, and 49-426.03 through 49-426.08.

**B. Emissions Statement Requirements**

1. Any stationary source located in an ozone nonattainment area that has actual emissions of 25 tons or more of nitrogen oxides (NOx) or volatile organic compounds (VOCs) during the calendar year shall complete and submit to the Director an emissions statement no later than June 1 of the following year, except as provided in subsection (B)(5).
2. The emissions statement shall be on an electronic or paper form provided by the Director and shall require the following information for the previous calendar year:
 - a. The source's name, description, mailing address, contact person and contact person phone number, and physical address and location, if different than the mailing address.
 - b. Process information for the source, including design capacity, throughput, operations schedule, and emissions control devices, their description and efficiencies.
 - c. Actual emissions of NOx and VOC including documentation of the method of measurement, calculation, or estimation, determined pursuant to subsection (C).
 - d. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
3. If either NOx or VOC annual emissions are greater than or equal to 25 tons, the other pollutant shall be included in the emissions statement even if less than 25 tons.
4. An amendment to an emissions statement, containing the documentation required by subsection (B)(2), shall be submitted to the Director by any source whenever it discovers or receives notice, within two years of the original submittal, that incorrect or insufficient information was submitted to the Director by a previous emissions statement. The amendment shall be submitted to the Director within 30 days of discovery or receipt of notice. The submittal of an amendment under this subsection shall not subject the owner or operator to an enforcement action or a civil or criminal penalty if the original submittal of incorrect or insufficient information was not due to willful neglect.
5. A source that submits an emissions inventory questionnaire under subsection (A) is exempt from subsection (B) requirements for that submission year.

C. Emissions Estimation Methodology

1. Actual quantities of emissions shall be determined using the following emission factors or data.
 - ~~1-a.~~ Whenever available, emissions estimates shall either be calculated from continuous emissions monitors certified pursuant to 40 CFR 75, Subpart C and referenced appendices, or data quality assured pursuant to Appendix F of 40 CFR 60.
 - ~~2-b.~~ When sufficient data pursuant to subsection (C)(1)(a) is not available, emissions estimates shall be calculated from data from source performance tests conducted pursuant to R18-2-312 in the calendar year being reported or, when not available, conducted in the most recent calendar year representing the operating conditions of the year being reported.
 - ~~3-c.~~ When sufficient data pursuant to subsection (C)(1)(a) or ~~(2)(b)~~ is not available, emissions estimates shall be calculated using emissions factors from EPA Publication No. AP-42 "Compilation of Air Pollutant Emission Factors," Volume I: Stationary Point and Area Sources, Fifth Edition, 1995, U.S. Environmental Protection Agency, Research Triangle Park, NC, including Supplements A through F and all updates published through July 1, 2011 (and no future editions). AP-42 is incorporated by reference and is on file with the Department of Environmental Quality and can be obtained from the Government Printing Office, 732 North Capitol Street, NW, Washington, D.C. 20401, telephone (202) 512-1800, or by downloading the document from the web site for the EPA Clearinghouse for Emission Inventories and Emission Factors.
 - ~~4-d.~~ When sufficient data pursuant to subsections (C)(1)(a) through ~~(C)(3)(c)~~ is not available, emissions estimates shall be calculated from material balance using engineering knowledge of process.
 - ~~5-e.~~ When sufficient data pursuant to subsections (C)(1)(a) through ~~(4)(d)~~ is not available, emissions estimates shall be calculated by equivalent methods approved by the Director. The Director shall only approve methods that are demonstrated as accurate and reliable as one of the methods in subsections (C)(1)(a) through ~~(4)(d)~~.
 - ~~D-2.~~ Actual quantities of emissions calculated under subsection (C) shall be determined on the basis of actual operating hours, production rates, in-place process control equipment, operational process control data, and types of materials processed, stored, or combusted.
- ~~E.~~ An amendment to an annual emission inventory questionnaire, containing the documentation required by subsection (B)(3), shall be submitted to the Director by any source whenever it discovers or receives notice, within two years of the original submittal, that incorrect or insufficient information was submitted to the Director by a previous questionnaire. If the incorrect or insufficient information resulted in an incorrect annual emissions fee, the Director shall require that additional payment be made or shall apply an amount as a credit to a future annual emissions fee. The submittal of an amendment under this subsection (shall) not subject the owner or operator to an enforcement action or a civil or criminal penalty if the original submittal of incorrect or insufficient information was due to reasonable cause and not willful neglect.
- ~~F.~~ The Director may require submittal of supplemental emissions inventory questionnaires for air contaminants pursuant to A.R.S. §§ 49-422, 49-424, and 49-426.03 through 49-426.08.

Exhibit C-II: Notice of Final Rulemaking



Arizona
Secretary
of State

Digitally signed
by Arizona
Secretary of State
Date: 2020.12.03
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Arizona Administrative REGISTER

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Vol. 26, Issue 49

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December 4, 2020

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DIRECTOR
Administrative Rules Division
Scott Cancelosi

PUBLISHER
Secretary of State
KATIE HOBBS

RULES MANAGING EDITOR
Arizona Administrative Register
Rhonda Paschal

From the Publisher

ABOUT THIS PUBLICATION

The authenticated pdf of the *Administrative Register* (A.A.R.) posted on the Arizona Secretary of State's website is the official published version for rulemaking activity in the state of Arizona.

Rulemaking is defined in Arizona Revised Statutes known as the Arizona Administrative Procedure Act (APA), A.R.S. Title 41, Chapter 6, Articles 1 through 10.

The *Register* is cited by volume and page number. Volumes are published by calendar year with issues published weekly. Page numbering continues in each weekly issue.

In addition, the *Register* contains notices of rules terminated by the agency and rules that have expired.

ABOUT RULES

Rules can be: made (all new text); amended (rules on file, changing text); repealed (removing text); or renumbered (moving rules to a different Section number). Rulemaking activity published in the *Register* includes: proposed, final, emergency, expedited, and exempt rules as defined in the APA, and other state statutes.

New rules in this publication (whether proposed or made) are denoted with underlining; repealed text is stricken.

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The *Arizona Administrative Code* (A.A.C.) contains the codified text of rules. The A.A.C. contains rules promulgated and filed by state agencies that have been approved by the Attorney General or the Governor's Regulatory Review Council. The *Code* also contains rules exempt from the rulemaking process.

The authenticated pdf of *Code* chapters posted on the Arizona Secretary of State's website are the official published version of rules in the A.A.C. The *Code* is posted online for free.

LEGAL CITATIONS AND FILING NUMBERS

On the cover: Each agency is assigned a Chapter in the *Arizona Administrative Code* under a specific Title. Titles represent broad subject areas. The Title number is listed first; with the acronym A.A.C., which stands for the *Arizona Administrative Code*; following the Chapter number and Agency name, then program name. For example, the Secretary of State has rules on rulemaking in Title 1, Chapter 1 of the *Arizona Administrative Code*. The citation for this chapter is 1 A.A.C. 1, Secretary of State, Rules and Rulemaking

Every document filed in the office is assigned a file number. This number, enclosed in brackets, is located at the top right of the published documents in the *Register*. The original filed document is available for 10 cents a page.

Arizona Administrative REGISTER

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PUBLISHER
SECRETARY OF STATE
Katie Hobbs

ADMINISTRATIVE RULES STAFF

DIRECTOR
Scott Cancelosi

RULES MANAGING EDITOR
Rhonda Paschal

ADMINISTRATIVE REGISTER
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ADMINISTRATIVE CODE
A price list for the *Arizona Administrative Code* is available online. You may also request a paper price list by mail. To purchase a paper Chapter, contact us at (602) 364-3223.

PUBLICATION DEADLINES
Publication dates are published in the back of the *Register*. These dates include file submittal dates with a three-week turnaround from filing to published document.

CONTACT US
Administrative Rules Division
Office of the Secretary of State
1700 W. Washington Street, Fl. 2
Phoenix, AZ 85007
(602) 364-3223

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Participate in the Process

Look for the Agency Notice

Review (inspect) notices published in the *Arizona Administrative Register*. Many agencies maintain stakeholder lists and would be glad to inform you when they proposed changes to rules. Check an agency's website and its newsletters for news about notices and meetings.

Feel like a change should be made to a rule and an agency has not proposed changes? You can petition an agency to make, amend, or repeal a rule. The agency must respond to the petition. (See A.R.S. § 41-1033)

Attend a public hearing/meeting

Attend a public meeting that is being conducted by the agency on a Notice of Proposed Rulemaking. Public meetings may be listed in the Preamble of a Notice of Proposed Rulemaking or they may be published separately in the *Register*. Be prepared to speak, attend the meeting, and make an oral comment.

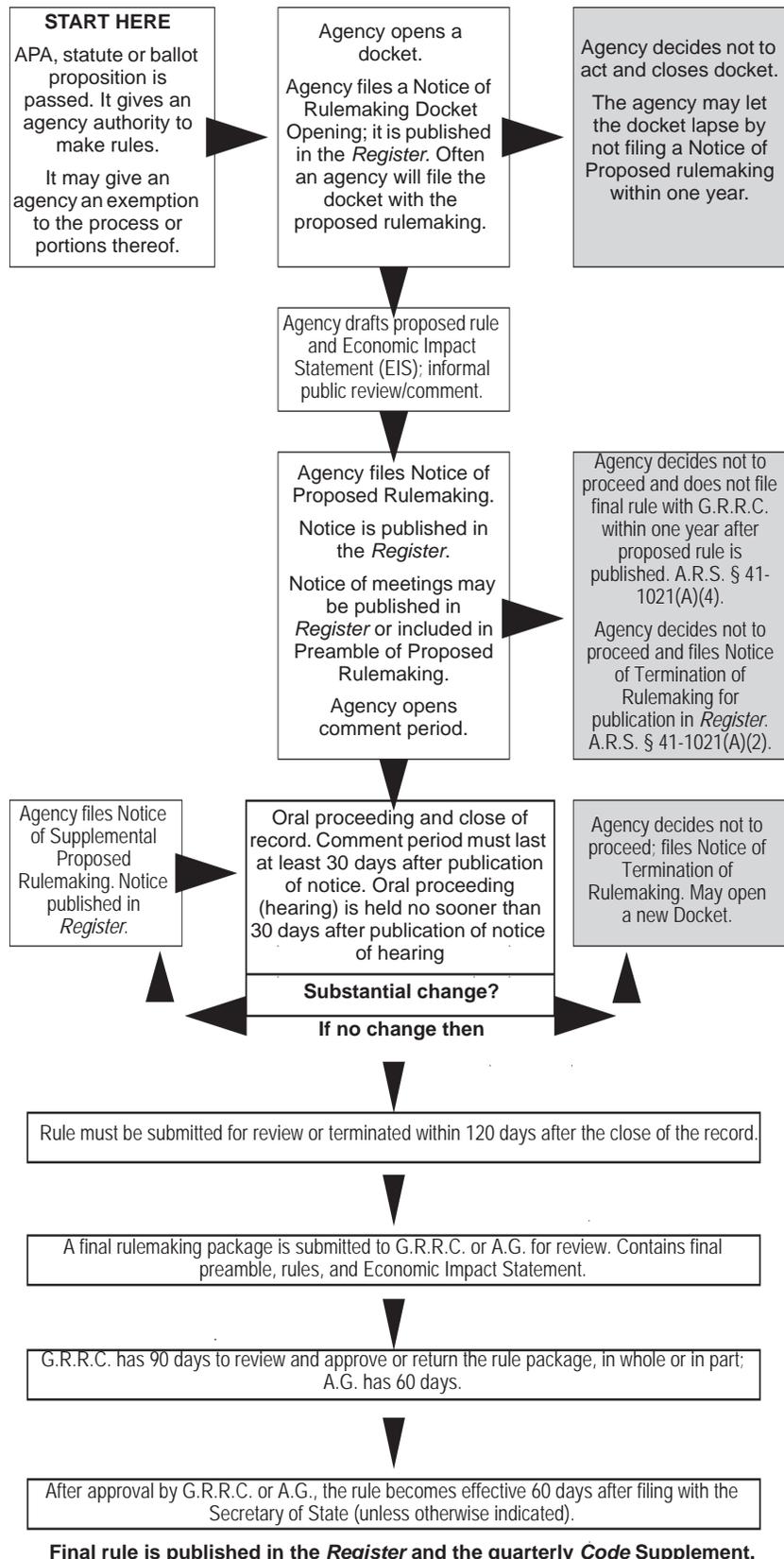
An agency may not have a public meeting scheduled on the Notice of Proposed Rulemaking. If not, you may request that the agency schedule a proceeding. This request must be put in writing within 30 days after the published Notice of Proposed Rulemaking.

Write the agency

Put your comments in writing to the agency. In order for the agency to consider your comments, the agency must receive them by the close of record. The comment must be received within the 30-day comment timeframe following the *Register* publication of the Notice of Proposed Rulemaking.

You can also submit to the Governor's Regulatory Review Council written comments that are relevant to the Council's power to review a given rule (A.R.S. § 41-1052). The Council reviews the rule at the end of the rulemaking process and before the rules are filed with the Secretary of State.

Arizona Regular Rulemaking Process



Definitions

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Session Laws or "Laws": When an agency references a law that has not yet been codified into the Arizona Revised Statutes, use the word "Laws" is followed by the year the law was passed by the Legislature, followed by the Chapter number using the abbreviation "Ch.," and the specific Section number using the Section symbol (§). For example, Laws 1995, Ch. 6, § 2. Session laws are available at www.azleg.gov.

United States Code (U.S.C.): The Code is a consolidation and codification by subject matter of the general and permanent laws of the United States. The Code does not include regulations issued by executive branch agencies, decisions of the federal courts, treaties, or laws enacted by state or local governments.

Acronyms

A.A.C. – *Arizona Administrative Code*

A.A.R. – *Arizona Administrative Register*

APA – *Administrative Procedure Act*

A.R.S. – *Arizona Revised Statutes*

CFR – *Code of Federal Regulations*

EIS – *Economic, Small Business, and Consumer Impact Statement*

FR – *Federal Register*

G.R.R.C. – *Governor's Regulatory Review Council*

U.S.C. – *United States Code*

About Preambles

The Preamble is the part of a rulemaking package that contains information about the rulemaking and provides agency justification and regulatory intent.

It includes reference to the specific statutes authorizing the agency to make the rule, an explanation of the rule, reasons for proposing the rule, and the preliminary Economic Impact Statement.

The information in the Preamble differs between rulemaking notices used and the stage of the rulemaking.



NOTICES OF FINAL RULEMAKING

This section of the Arizona Administrative Register contains Notices of Final Rulemaking. Final rules have been through the regular rulemaking process as defined in the Administrative Procedures Act. These rules were either approved by the Governor's Regulatory Review Council or the Attorney General's Office. Certificates of Approval are on file with the Office.

The final published notice includes a preamble and

text of the rules as filed by the agency. Economic Impact Statements are not published.

The Office of the Secretary of State is the filing office and publisher of these rules. Questions about the interpretation of the final rules should be addressed to the agency that promulgated them. Refer to Item #5 to contact the person charged with the rulemaking. The codified version of these rules will be published in the Arizona Administrative Code.

NOTICE OF FINAL RULEMAKING
TITLE 18. ENVIRONMENTAL QUALITY
CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR POLLUTION CONTROL

[R20-202]

PREAMBLE

- 1. Article, Part, or Section Affected (as applicable) Rulemaking Action
2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):
3. The effective date of the rule:
4. Citations to all related notices published in the Register as specified in R1-1-409(A) that pertain to the record of the proposed rule:
5. The agency's contact person who can answer questions about the rulemaking:
6. An agency's justification and reason why a rule should be made, amended, repealed or renumbered, to include an explanation about the rulemaking:
Summary.
Ozone Emission Statement Requirements



Implementation Plan (FIP). The final rule will be submitted to EPA as a revision to the Arizona State Implementation Plan (SIP).

Annual Emissions Inventory Questionnaire (AEIO) Reporting Frequency

In addition, A.A.C. R18-2-327 prescribes the procedures a source permitted under A.A.C. Title 18, Chapter 2, Article 3 must follow to submit an annual emission inventory questionnaire to ADEQ. ADEQ has identified amendments to A.A.C. R18-2-327 that would alleviate a burdensome regulatory reporting requirement for some Class II air quality permitted sources. Amendments to the rule change the frequency from annual reporting to a minimum of once every three years. ADEQ estimates these amendments will alleviate the reporting requirements for an average of 275 sources each year and will free up at least 100 hours of ADEQ staff time per year. At the same time, ADEQ will retain the discretionary ability to require Class II sources to submit annual emission reports.

7. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

Not applicable

8. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. A summary of the economic, small business, and consumer impact:

The following discussion addresses each of the elements required for an Economic, Small Business, and Consumer Impact Statement (EIS) under A.R.S. § 41-1055.

An identification of the rulemaking.

This EIS addresses a rulemaking designed to bring ADEQ's emission reporting rules into compliance with federal requirements and reduce the reporting requirements of some Class II air quality permitted sources.

ADEQ anticipates the overall economic impact of this rulemaking will have a positive effect on businesses, consumers, and ADEQ because of the reduction in required annual emission inventory questionnaires. ADEQ anticipates emission statements required by federal law will only affect those sources located in ozone nonattainment areas that produce 25 tons or more of NOx and VOCs annually. A more detailed analysis of these changes is addressed in Section 6 of this Notice of Final Rulemaking.

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

The proposed changes affect permitted air quality sources statewide and stationary sources located in ozone nonattainment areas that emit ozone precursors. Some Class II air quality permitted sources will directly benefit from this rulemaking by reducing the reporting burden from annually to a minimum of once every three years, and as required by the Director. Stationary sources located in ozone nonattainment areas that emit ozone precursors will directly bear the costs of producing the new federal emission statement requirements.

A cost benefit analysis of the following:

(a) The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.

ADEQ will directly benefit from the changes in reporting frequency from Class II air quality permitted sources. ADEQ anticipates this proposed rulemaking will free up at least 100 hours of staff time per year by reducing the number of questionnaires the agency must review within a three-year period. ADEQ will bear the additional costs associated with reviewing the new federally required emission statements.

(b) The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking.

ADEQ does not anticipate any economic impacts to political subdivisions of the state as a result of this rulemaking.

(c) The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.

ADEQ anticipates some Class II permitted air quality sources will directly benefit from this rulemaking by reducing the number of emission inventory questionnaires required in a three year period. ADEQ anticipates these amendments will reduce the reporting requirements and associated costs on approximately 275 sources.

ADEQ anticipates the costs associated with the new federal reporting requirements on sources located in ozone nonattainment areas that emit ozone precursors to be minimal. ADEQ estimates the new federally required emission statements will require approximately two hours of administrative staff time per source per year.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

ADEQ anticipates any additional costs imposed on businesses because of this rulemaking will be minimal as per the reasons described above. Accordingly, ADEQ anticipates minimal impact on private employment or on the employment of any political subdivision subject to the proposed amendments.

A statement of the probable impact of the rulemaking on small businesses.

(a) An identification of the small businesses subject to the rulemaking.



Under A.R.S. § 41-1001(21) "Small business" means a concern, including its affiliates, which is [1] independently owned and operated, which is [2] not dominant in its field and which [3] employs fewer than one hundred full-time employees or which had gross annual receipts of less than four million dollars in its last fiscal year.

Currently ADEQ does not have a method to determine which of the approximately 275 Class II air quality permitted sources meet the criteria of a small business. However, given that the proposed amendments to the reporting frequency for these sources is of a beneficial nature, ADEQ is confident that any of the sources that meet the criteria of a small business would benefit from removing this cumbersome reporting requirement.

For stationary sources located in ozone nonattainment areas that emit ozone precursors, ADEQ has not positively identified any sources that meet the definition of a small business. Within the Yuma ozone nonattainment area, ADEQ has identified two dry cleaners and one carpet manufacturer as potentially meeting the criteria of a small business that may be subject to the proposed emission statement requirements.

(b) The administrative and other costs required for compliance with the rulemaking.

ADEQ currently estimates the administrative cost to comply with the proposed emission statement requirements to be approximately two hours of administrative staff time per source per year. ADEQ does not anticipate any additional costs to be placed on small businesses as a result of this proposed rulemaking.

(c) A description of the methods that the agency may use to reduce the impact on small businesses.

(i) Establishing less costly compliance requirements in the rulemaking for small businesses.

ADEQ is committed to working closely with small businesses subject to this rulemaking to streamline the creation and submittal of required emissions statements. ADEQ has streamlined the process of submitting all questionnaires discussed in the rulemaking by giving participants the option to submit electronic or paper copies as demonstrated in R18-2-327(A)(3). ADEQ also anticipates the provisions of this rulemaking will limit the amount of administrative staff time necessary to comply with the proposed amendments.

(ii) Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.

Due to federally mandated deadlines for emissions reporting, ADEQ is not able to establish less stringent deadlines for small businesses other than those offered to all sources. ADEQ commits to working closely with small businesses subject to emission statement requirements to further mitigate any issues related to submission schedules and deadlines.

(iii) Exempting small businesses from any or all requirements of the rulemaking.

ADEQ has identified that under 42 U.S.C. 7511a(a)(3)(B)(ii) the agency may waive the application of federally required emission statement requirements to any class or category of stationary sources which emit less than 25 tons per year of ozone precursors contingent on the agency meeting other inventory submission requirements. ADEQ anticipates this will serve to exempt any small business that emits fewer than 25 tons per year of ozone precursors from being subject to the new federal emission statement requirements.

(d) The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.

Not applicable.

A statement of the probable effect on state revenues.

Not applicable.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

ADEQ was unable to identify any less intrusive or less costly alternative methods of achieving the proposed amendments to A.A.C. R18-2-327.

A description of any data on which a rule is based with a detailed explanation of how the data was obtained and why the data is acceptable data. An agency advocating that any data is acceptable data has the burden of proving that the data is acceptable. For the purposes of this paragraph, "acceptable data" means empirical, replicable and testable data as evidenced in supporting documentation, statistics, reports, studies or research.

This rulemaking impacts sources producing specific volumes of emissions, which is testable and replicable by the source owners and oversight agency, in this case ADEQ.

10. A description of any changes between the proposed rulemaking, to include supplemental notices, and the final rulemaking:

ADEQ did not make any changes to the rule language in response to comments or otherwise between the proposed rule and the final rule.

11. An agency's summary of the public or stakeholder comments made about the rulemaking and the agency response to the comments:

ADEQ received one comment related to the rulemaking in support of the changes to the reporting requirements. ADEQ acknowledged that comment during the public hearing held on May 11, 2020.

12. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

There are no matters prescribed by statute applicable specifically to ADEQ or this specific rulemaking.

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

These rules do not require any permits.



- b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:**
These rules help Arizona comply with the federal Clean Air Act, Title 1, Part D. These rules are no more stringent than required by federal law.
- c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:**
No person(s) submitted an analysis to ADEQ.
- 13. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:**
Not applicable
- 14. Whether the rule was previously made, amended or repealed as an emergency rule. If so, cite the notice published in the Register as specified in R1-1-409(A). Also, the agency shall state where the text was changed between the emergency and final rulemaking packages:**
Not applicable
- 15. The full text of the rules follows:**

**TITLE 18. ENVIRONMENTAL QUALITY
CHAPTER 2. DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR POLLUTION CONTROL**

ARTICLE 3. PERMITS AND PERMIT REVISIONS

Section

R18-2-327. ~~Annual~~ Emissions Inventory Questionnaire and Emissions Statement

ARTICLE 3. PERMITS AND PERMIT REVISIONS

R18-2-327. ~~Annual~~ Emissions Inventory Questionnaire and Emissions Statement

A. Emissions Inventory Questionnaire Requirements

- 1.** Every source subject to permit requirements under this Chapter shall complete and submit to the Director an ~~annual~~ emissions inventory questionnaire ~~as follows: The questionnaire is due by March 31 or 90 days after the Director makes the inventory form available, whichever occurs later, and shall include emission information for the previous calendar year.~~
 - a.** Sources Requiring a Class I Permit under R18-2-302(B). Sources requiring a Class I permit under R18-2-302(B) shall complete and submit to the Director an emissions inventory questionnaire no later than June 1 of each year.
 - b.** Sources Requiring a Class II Permit under R18-2-302(B)
 - i.** Sources requiring a Class II permit under R18-2-302(B) shall complete and submit to the Director an emissions inventory questionnaire no later than June 1 every three years beginning June 1, 2021.
 - ii.** At the Director's request, sources requiring a Class II permit under R18-2-302(B) may be required to complete and submit emissions inventory questionnaires in addition to the triennial emissions inventory questionnaire required under subsection (A)(1)(b)(i). The Director shall notify the owner or operator of the source in writing of the decision to require additional emissions inventory questionnaires.
- 2.** These requirements apply whether or not a permit has been issued and whether or not a permit application has been filed.
- ~~B.3.~~** The emissions inventory questionnaire shall be on an electronic or paper form provided by the Director and shall include the following information for the previous calendar year:
 - ~~1-a.~~ The source's name, description, mailing address, contact person and contact person phone number, and physical address and location, if different than the mailing address.
 - ~~2-b.~~ Process information for the source, including design capacity, throughput, operations schedule, and emissions control devices, their description and efficiencies.
 - ~~3-c.~~ The actual quantity of emissions from permitted emission points and fugitive emissions as provided in the permit, including documentation of the method of measurement, calculation, or estimation, determined pursuant to subsection (C), of the following regulated air pollutants:
 - ~~a-i.~~ Any single regulated air pollutant in a quantity greater than 1 ton or the amount listed for the pollutant in the definition of "significant" in R18-2-101(131)(a) or (b), whichever is less.
 - ~~b-ii.~~ Any combination of regulated air pollutants in a quantity greater than 2 1/2 tons.
 - d.** A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- 4.** An amendment to an emissions inventory questionnaire, containing the documentation required by subsection (A)(3), shall be submitted to the Director by any source whenever it discovers or receives notice, within two years of the original submittal, that incorrect or insufficient information was submitted to the Director by a previous emissions inventory questionnaire. The amendment shall be submitted to the Director within 30 days of discovery or receipt of notice. If the incorrect or insufficient information resulted in an incorrect annual emissions fee, the Director shall require that additional payment be made or shall apply an amount as a credit to a future annual emissions fee. The submittal of an amendment under this subsection shall not subject the owner or operator to an enforcement action or a civil or criminal penalty if the original submittal of incorrect or insufficient information was not due to willful neglect.



5. The Director may require submittal of supplemental emissions inventory questionnaires for air contaminants pursuant to A.R.S. §§ 49-422, 49-424, and 49-426.03 through 49-426.08.

B. Emissions Statement Requirements

- 1. Any stationary source located in an ozone nonattainment area that has actual emissions of 25 tons or more of nitrogen oxides (NO_x) or volatile organic compounds (VOCs) during the calendar year shall complete and submit to the Director an emissions statement no later than June 1 of the following year, except as provided in subsection (B)(5).
- 2. The emissions statement shall be on an electronic or paper form provided by the Director and shall require the following information for the previous calendar year:
 - a. The source's name, description, mailing address, contact person and contact person phone number, and physical address and location, if different than the mailing address.
 - b. Process information for the source, including design capacity, throughput, operations schedule, and emissions control devices, their description and efficiencies.
 - c. Actual emissions of NO_x and VOC including documentation of the method of measurement, calculation, or estimation, determined pursuant to subsection (C).
 - d. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- 3. If either NO_x or VOC annual emissions are greater than or equal to 25 tons, the other pollutant shall be included in the emissions statement even if less than 25 tons.
- 4. An amendment to an emissions statement, containing the documentation required by subsection (B)(2), shall be submitted to the Director by any source whenever it discovers or receives notice, within two years of the original submittal, that incorrect or insufficient information was submitted to the Director by a previous emissions statement. The amendment shall be submitted to the Director within 30 days of discovery or receipt of notice. The submittal of an amendment under this subsection shall not subject the owner or operator to an enforcement action or a civil or criminal penalty if the original submittal of incorrect or insufficient information was not due to willful neglect.
- 5. A source that submits an emissions inventory questionnaire under subsection (A) is exempt from subsection (B) requirements for that submission year.

C. Emissions Estimation Methodology

- 1. Actual quantities of emissions shall be determined using the following emission factors or data.
 - ~~1-a.~~ Whenever available, emissions estimates shall either be calculated from continuous emissions monitors certified pursuant to 40 CFR 75, Subpart C and referenced appendices, or data quality assured pursuant to Appendix F of 40 CFR 60.
 - ~~2-b.~~ When sufficient data pursuant to subsection (C)(1)(a) is not available, emissions estimates shall be calculated from data from source performance tests conducted pursuant to R18-2-312 in the calendar year being reported or, when not available, conducted in the most recent calendar year representing the operating conditions of the year being reported.
 - ~~3-c.~~ When sufficient data pursuant to subsection (C)(1)(a) or ~~(2)(b)~~ is not available, emissions estimates shall be calculated using emissions factors from EPA Publication No. AP-42 "Compilation of Air Pollutant Emission Factors," Volume I: Stationary Point and Area Sources, Fifth Edition, 1995, U.S. Environmental Protection Agency, Research Triangle Park, NC, including Supplements A through F and all updates published through July 1, 2011 (and no future editions). AP-42 is incorporated by reference and is on file with the Department of Environmental Quality and can be obtained from the Government Printing Office, 732 North Capitol Street, NW, Washington, D.C. 20401, telephone (202) 512-1800, or by downloading the document from the web site for the EPA Clearinghouse for Emission Inventories and Emission Factors.
 - ~~4-d.~~ When sufficient data pursuant to subsections (C)(1)(a) through ~~(C)(3)(c)~~ is not available, emissions estimates shall be calculated from material balance using engineering knowledge of process.
 - ~~5-e.~~ When sufficient data pursuant to subsections (C)(1)(a) through ~~(4)(d)~~ is not available, emissions estimates shall be calculated by equivalent methods approved by the Director. The Director shall only approve methods that are demonstrated as accurate and reliable as one of the methods in subsections (C)(1)(a) through ~~(4)(d)~~.
- ~~D-2.~~ Actual quantities of emissions calculated under subsection (C) shall be determined on the basis of actual operating hours, production rates, in-place process control equipment, operational process control data, and types of materials processed, stored, or combusted.

~~E.~~ An amendment to an annual emission inventory questionnaire, containing the documentation required by subsection (B)(3), shall be submitted to the Director by any source whenever it discovers or receives notice, within two years of the original submittal, that incorrect or insufficient information was submitted to the Director by a previous questionnaire. If the incorrect or insufficient information resulted in an incorrect annual emissions fee, the Director shall require that additional payment be made or shall apply an amount as a credit to a future annual emissions fee. The submittal of an amendment under this subsection (shall) not subject the owner or operator to an enforcement action or a civil or criminal penalty if the original submittal of incorrect or insufficient information was due to reasonable cause and not willful neglect.

~~F.~~ The Director may require submittal of supplemental emissions inventory questionnaires for air contaminants pursuant to A.R.S. §§ 49-422, 49-424, and 49-426.03 through 49-426.08.