



## 2017 Regional SO<sub>2</sub> Emissions and Milestone Report

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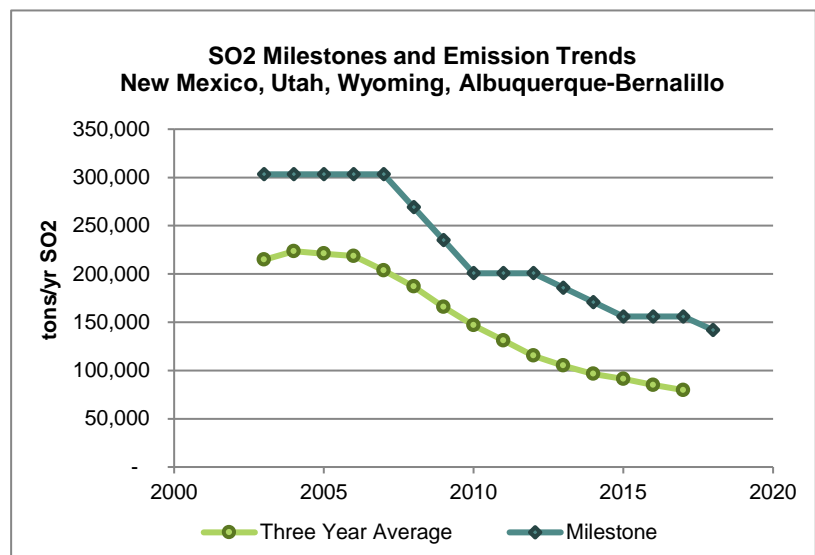
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## 2017 Regional SO<sub>2</sub> Emissions and Milestone Report

### Executive Summary

Under Section 309 of the Federal Regional Haze Rule, nine western states, and tribes within those states, have the option of submitting plans to reduce regional haze emissions that impair visibility at 16 Class I areas on the Colorado Plateau. Five states – Arizona, New Mexico, Oregon, Utah, and Wyoming – and Albuquerque-Bernalillo County initially exercised this option by submitting plans to the Environmental Protection Agency (EPA) by December 31, 2003. Oregon elected to cease participation in the program in 2006 and Arizona elected to cease participation in 2010. The tribes were not subject to the deadline and still can opt into the program at any time. Under the Section 309 plans, the three participating states and Albuquerque-Bernalillo County have tracked the emissions of the applicable stationary sources as part of the pre-trigger portion of the SO<sub>2</sub> Milestone and Backstop Trading Program. The Western Regional Air Partnership (WRAP) is assisting these states and county with the implementation and management of the regional emission reduction program. As used in this document, “Section 309 states” means the states of New Mexico, Utah, and Wyoming and Albuquerque-Bernalillo County. (For CAA purposes, this report treats Albuquerque-Bernalillo County as a state because it has authority under federal and state law to administer the CAA separately from the rest of New Mexico).

As part of this program, the Section 309 states must submit an annual Regional Sulfur Dioxide (SO<sub>2</sub>) Emissions and Milestone Report that compares emissions to milestones. A milestone is a maximum level of annual emissions for a given year. The states submitted the first report in 2004 for the calendar year 2003. Over the course of the program, the states have consistently stayed below the milestones.



The regional milestone for 2017 is 155,940 tons. The states averaged the 2015, 2016, and 2017 adjusted emissions as required by Section 309 of the CAA. We compared this average to the 2017 milestone to determine whether the states met the milestone. The adjustments to reported emissions were required to allow the basis of current emission estimates to be comparable to the emissions monitoring or calculation method used in the most recent base year inventory.

As presented in Table ES-1, the Section 309 states reported 67,245 tons of SO<sub>2</sub> emissions for the calendar year 2017. The total emissions increased to 76,504 tons of SO<sub>2</sub> after making

adjustments to account for changes in monitoring, calculation methods, and enforcement actions. The adjustments result in an additional 9,259 tons of SO<sub>2</sub> emissions. The adjusted emissions values for 2015 and 2016 were 81,454 and 81,170 tons, respectively. The average of 2015, 2016, and 2017 adjusted emissions was 79,709 tons.

Based on this average annual emissions estimate, the Section 309 states determined that emissions in 2017 were below the regional SO<sub>2</sub> milestone for 2017. The states' Section 309 plans contain provisions to adjust the milestones to account for enforcement actions (to reduce the milestones where an enforcement action identified that emissions in the baseline period were greater than allowable emissions). Based on emissions data received from the states and plan requirements regarding adjustments to the milestones, no enforcement action adjustment is required.

The plans also require that the annual report identify, first, changes in the total number of sources from year to year and, second, significant changes in a source's emissions from year to year. The significant emission changes from 2016 to 2017 are included in Section 6 of this report. A list of facilities added to, or removed from, the list of subject sources in the original base year inventories is included in Appendix B.

**Table ES-1  
Overview of 2017 Regional Milestones and Emissions for Section 309 Participating States**

<b><u>2017 Sulfur Dioxide Milestones</u></b>	
Regional 2017 Milestone*	155,940 tons
Adjusted 2017 Milestone	155,940 tons
<b><u>2017 Sulfur Dioxide Emissions</u></b>	
Reported 2017 Emissions	67,245 tons
Adjustments**	
Emission Monitoring, Calculation Methods, and Enforcement Actions	9,259 tons
Adjusted 2017 Emissions (rounded number)	76,504 tons
<b><u>Average Sulfur Dioxide Emissions (2015, 2016, 2017)</u></b>	
Adjusted 2017 Emissions	76,504 tons
Adjusted 2016 Emissions	81,170 tons
Adjusted 2015 Emissions	81,454 tons
Average of 2015, 2016, & 2017 Adjusted Emissions	79,709 tons
<b><u>Comparison of Emissions to Milestone</u></b>	
Average of 2015, 2016, 2017 Adjusted Emissions	79,709 tons
Adjusted Three-State 2017 Milestone	155,940 tons
Difference (Negative Value = Emissions < Milestone)	-76,231 tons
2015 – 2017 Emissions Average as Percent of 2017 Milestone	51%

\* See the Regional Milestones section of each state's 309 plan.

\*\* See the Annual Emissions Report section of each state's 309 plan.

# 2017 Regional SO<sub>2</sub> Emissions and Milestone Report

## 1.0 Introduction

### 1.1 Background

Under Section 309 of the Federal Regional Haze Rule (40 CFR Part 51), nine western states, and the tribes within those states, have the option of submitting State Implementation Plans (SIPs) to reduce regional haze emissions that impair visibility at 16 Class I areas on the Colorado Plateau. Five states — Arizona, New Mexico, Oregon, Utah, and Wyoming — and Albuquerque-Bernalillo County exercised this option by submitting SIPs to the EPA by December 1, 2003. In October 2006, when EPA modified Section 309, Oregon elected to cease participation in the SO<sub>2</sub> Milestone and Backstop Trading Program by not resubmitting a Section 309 SIP. In 2010, Arizona elected to cease participation in the program. The tribes were not subject to this deadline and still can opt into the program at any time.

Under the Section 309 SIPs, these three states and one local air agency have been tracking emissions under the pre-trigger requirements of the SO<sub>2</sub> Milestone and Backstop Trading Program since 2003. The Western Regional Air Partnership (WRAP) is assisting these states with the implementation and management of this regional emission reduction program.

Under the milestone phase of the program, Section 309 states have established annual SO<sub>2</sub> emissions targets (from 2003 to 2018). These voluntary emissions reduction targets represent reasonable progress in reducing emissions that contribute to regional haze. If the participating sources fail to meet the milestones through this voluntary program, then the states will trigger the backstop trading program and implement a regulatory emissions cap for the states, allocate emissions allowances (or credits) to the affected sources based on the emissions cap, and require the sources to hold sufficient allowances to cover their emissions each year.

This report is the fifteenth annual report for the milestone phase of this program. The report provides background on regional haze and the Section 309 program, the milestones established under the program, and the emissions reported for 2017. Based on the first fourteen years, the voluntary milestone phase of the program is meeting its reasonable progress targets, and emissions are well below the target levels.

### **What is Regional Haze?**

Regional haze is air pollution that is transported long distances and reduces visibility in national parks and wilderness areas across the country. Over the years, this haze has reduced the visual range from 145 kilometers (90 miles) to 24 – 50 kilometers (15 – 31 miles) in the East, and from 225 kilometers (140 miles) to 56 – 145 kilometers (35 – 90 miles) in the West. The pollutants that create this haze are sulfates, nitrates, organic carbon, elemental carbon, and soil dust. Human-caused haze sources include industry, motor vehicles, agricultural and forestry burning, and windblown dust from roads and farming practices.

### **What U.S. EPA Requirements Apply?**

In 1999, the EPA issued regulations to address regional haze in 156 national parks and wilderness areas across the country. EPA published these regulations in the Federal Register on

July 1, 1999 (64 FR 35714). The goal of the Regional Haze Rule (RHR) is to eliminate human-caused visibility impairment in national parks and wilderness areas across the country. It contains strategies to improve visibility over the next six decades, and requires states to adopt implementation plans.

The EPA's RHR provides two paths to address regional haze. One is 40 CFR 51.308 (Section 308), and requires most states to develop long-term strategies out to the year 2064. States must show that these strategies make "reasonable progress" in improving visibility in Class I areas inside the state and in neighboring jurisdictions. The other is 40 CFR 51.309 (Section 309), and is an option for nine states — Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming — and the 211 tribes located within these states to adopt regional haze strategies for the period from 2003 to 2018. These strategies are based on recommendations from the Grand Canyon Visibility Transport Commission (GCVTC) for protecting the 16 Class I areas on the Colorado Plateau. Adopting these strategies constitutes reasonable progress until 2018. These nine western states and tribes can also use the same strategies to protect the other Class I areas within their own jurisdictions.

The EPA revised the RHR on July 6, 2005 (70 FR 39104), and again on October 13, 2006 (71 FR 60612) in response to two legal challenges. The October 13, 2006 revisions modified Section 309 to provide a methodology consistent with the Court's decision for evaluating the equivalence of alternatives to Best Available Retrofit Technology (BART), such as the alternative Section 309 strategy based on the GCVTC recommendations.

### **How Have the WRAP States Responded to EPA Requirements?**

Of the nine states, and tribes within those states, that have the option under Section 309 of participating in a regional strategy to reduce SO<sub>2</sub> emissions, five states originally submitted Section 309 SIPs to EPA. These states were Arizona, New Mexico, Oregon, Utah, and Wyoming. In addition, Albuquerque-Bernalillo County also submitted a Section 309 SIP. Due to legal challenges, EPA did not approve the initial SIP submittals. EPA did, however, fully approve the regional milestone and backstop trading program in 2012.

Oregon and Arizona have opted out of submitting a revised Section 309 SIP under the modified RHR, which leaves three participating states and Albuquerque-Bernalillo County. To date, no tribes have opted to participate under Section 309, and the other four states of the original nine opted to submit SIPs under Section 308 of the RHR.

The following summarizes SO<sub>2</sub> related elements of the Section 309 process for the participating Section 309 states:

1. Section 309(d)(4)(i) requires SO<sub>2</sub> milestones in the SIP and includes provisions for making adjustments to these milestones, if necessary. The milestones must provide for steady and continuing emission reductions through 2018 and greater reasonable progress than BART.
2. Section 309(d)(4)(iii) requires monitoring and reporting of stationary source SO<sub>2</sub> emissions in order to ensure the SO<sub>2</sub> milestones are met. The SIP must commit to reporting to the WRAP as well as to EPA.

3. Section 309(d)(4)(iv) requires that a SIP contain criteria and procedures for activating the trading program within five years if an annual milestone is exceeded. A Section 309 SIP must also provide for assessments of the state's progress in 2013 and 2018.

This report responds to Item 2, above, and provides the annual report that compares the 2016 emissions against the milestones for the states and city that have submitted Section 309 SIPs to EPA.

### **What Elements Must the Regional SO<sub>2</sub> Emissions and Milestone Report Contain?**

To facilitate compliance with the Section 309 SIPs, the WRAP has committed to compiling a regional report on emissions for each year. In accordance with the SIPs, the WRAP will compile the individual state emission reports into a summary report that includes:

1. Reported regional SO<sub>2</sub> emissions (tons/year).
2. Adjustments to account for:
  - Changes in emissions monitoring or calculation methods; or
  - Enforcement actions or settlement agreements as a result of enforcement actions.
3. As applicable, average adjusted emissions for the last three years (which are compared to the regional milestone). Per requirements in the Section 309 SIPs, 2015, 2016, and 2017 emissions are averaged.

### **How Is Compliance with the SO<sub>2</sub> Milestone Determined?**

While the WRAP assists with the preparation of this report, each Section 309 state reviews the information in the report and proposes a draft determination that the regional SO<sub>2</sub> milestone is either met or exceeded for that year. Each state submits the draft determination for public review and comment, in accordance with its SIP, during the first part of 2019, culminating in a final report sent to EPA by March 31, 2019.

## *1.2 Report Organization*

This report presents the regional SO<sub>2</sub> emissions and milestone information required by the 309 SIPs for the Section 309 states. The report is divided into the following sections, including two appendices:

- Reported SO<sub>2</sub> Emissions in 2017;
- Emissions Adjustments Related to Monitoring Methodology or Enforcement Actions;
- Three-Year Average Emissions;
- Enforcement Milestone Adjustments;
- Quality Assurance (Including Source Change Information);
- Milestone Determination;
- Appendix A -- Facility Emissions and Emissions Adjustments; and
- Appendix B -- Changes to SO<sub>2</sub> Emissions and Milestone Source Inventory.

## *2.0 Reported SO<sub>2</sub> Emissions in 2017*

The Section 309 SIPs require all stationary sources with reported emissions of 100 tons or more per year in the year 2000, or any subsequent year, to report annual SO<sub>2</sub> emissions. Albuquerque-Bernalillo County reported that they have no emissions sources over 100 tons per

year. Table 1 summarizes the annual reported emissions from applicable sources in each state. The 2017 reported SO<sub>2</sub> emissions for each applicable source are in Appendix A, Table A-1.

**Table 1. Reported 2017 SO<sub>2</sub> Emissions by State**

State	Reported 2017 SO <sub>2</sub> Emissions (tons/year)
New Mexico	10,419
Utah	11,337
Wyoming	45,489
TOTAL	67,245

In the 2016 Milestone Report, four sources from New Mexico and Wyoming were reported incorrectly. Below is a table listing these sources and corrected emissions.

**Table 2. Corrected 2016 emissions**

State	Source	Incorrect Emissions reported in 2016 (SO <sub>2</sub> tpy)	Correct Emissions for 2016 (SO <sub>2</sub> tpy)
New Mexico	Agave Energy Co./Agave Dagger Draw Gas Plant	1	28
New Mexico	DCP Midstream/Linam Ranch Gas Plant	106	322
Wyoming	Exxon Mobile Corporation – Shute Creek Plant	16,930	1,693
Wyoming	TATA Chemicals (Soda Ash Partners)-- Green River Plant	6,034	4,163

Although this resulted in over reporting 2016 emissions by 19,565 tons, it did not cause an exceedance of the 2016 or the 2017 milestones. Emissions from these three plants are correct in the tables and calculations in this report.

### **3.0 Emissions Adjustments Related to Monitoring Methodology or Enforcement Actions**

The annual emissions reports for each state include proposed emissions adjustments to ensure consistent comparison of emissions to the milestone. Each state adjusted the reported emissions levels so that they are comparable to the levels that would result if the state used the same emissions monitoring or calculation method used in the base year inventory (2006). The net impact throughout the region, because of adjustments related to the monitoring methodology, is an increase of 1,254 tons from the reported 2017 emissions.

Utah adjusted the emissions from the Carbon Power Plan due to an enforcement action. As part of Utah's BART alternative for NO<sub>x</sub>, they required that the Carbon Power Plant shut down. Though there is an actual emissions reduction of 8,005 tons of SO<sub>2</sub> per year, the Utah Air Quality Board approved a Commitment SIP stating that the emissions reductions from the closure will not be counted for both the SO<sub>2</sub> Milestone program and the BART alternative controls. Therefore, an additional 8,005 tons of SO<sub>2</sub> are included in the calculations for this milestone report. Table 3 summarizes the emissions adjustments made for changes in monitoring methodology or enforcement actions.

**Table 3. Adjustments for Changes in Monitoring Methodology or Enforcement Actions**

State	Source	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	Monitoring Methodology Adjustment (tons)	Enforcement Action Adjustment (tons)	Description
UT	Chevron Products Co. -- Salt Lake Refinery	32	878	846	--	Increase in Adjusted SO <sub>2</sub> Emissions is due to a correction in the calculation of Adjusted SO <sub>2</sub> Emissions. The previous formula used to calculate SO <sub>2</sub> included flow meters and engineering judgment etc. The current formula for calculating now incorporates CEM data.
UT	Big West Oil Company - Flying J Refinery	33	198	165	--	Now using CEM data
UT	Holcim-Devil's Slide Plant	196	439	243	--	Facility changed emissions calculation methodology from stack tests to CEM.
UT	PacifiCorp -- Carbon Power Plant	0	8,005	--	8,005	An Utah Enforceable Commitment SIP resolves that SO <sub>2</sub> emissions reductions from the closure of the Carbon plant will not be counted as part of achieving the SO <sub>2</sub> Milestone and as part of the Alternative to BART SIP for NO <sub>x</sub> .



#### 4.0 *Three-Year Average Adjusted Emissions (2015, 2016, and 2017)*

The SIPs require multi-year averaging of emissions from 2004 to 2017 for the milestone comparison. From 2005 to 2017, states compare a three-year average (which includes the reporting year and the two previous years) with the milestone. The average of the three years' emissions from 2015 to 2017 is 79,709 tons. Table 4 shows the adjusted emissions for each year and three-year average emissions. The following report sections describe the adjusted milestone determination.

**Table 4. Average Adjusted SO<sub>2</sub> Emissions (2015, 2016, & 2017)**

Year	Adjusted SO <sub>2</sub> Emissions (tons/year)
2015	81,454
2016	81,170
2017	76,504
Three-Year Average (2015, 2016, 2017)	79,709

#### 5.0 *Enforcement Milestone Adjustments*

The SIPs require that each state report on proposed milestone adjustments due to enforcement actions, which affect baseline year emissions. The purpose of this adjustment is to remove emissions that occurred above the allowable level in the baseline year from the baseline and the annual milestones. The enforcement milestone adjustments require an EPA-approved SIP revision before taking effect. There were no proposed enforcement action related milestone adjustments reported for 2017.

#### 6.0 *Quality Assurance*

The states provided 2017 emissions data based on their state emissions inventories. States used additional quality assurance (QA) procedures for this report to supplement the normal QA procedures the states follow for their emissions inventories. First, each state submitted a source change report, and second, the states compared their inventory data for utility sources against 40 CFR Part 75 Acid Rain Program monitoring data.

##### 6.1 *Source Change Report*

The SIPs require that this annual SO<sub>2</sub> emissions and milestone report include a description of source changes or exceptions report to identify the following:

- Any new sources that were not contained in the previous calendar year's emissions report, and an explanation of why the sources are now included in the program.
- Identification of any sources that were included in the previous year's report and are no longer included in the program, and an explanation of why this change has occurred.
- An explanation for emissions variations at any applicable source that exceeds  $\pm 20\%$  from the previous year.

Table 5 provides explanations for the emissions variations from applicable sources from 2016 – 2017 that are greater than 20%. Plants with variations greater than 20%, but reported emissions of less than 20 tons in both 2016 and 2017, are not included in Table 5. Information on these plants is provided in Appendix A.

Appendix B provides a list of all sources added or removed from the program inventory in previous reporting years. The states have not added any sources since the 2012 report.

**Table 5. Sources with an Emissions Change of > ±20% from the Previous Year**

State	County FIPS	State Facility Identifier	Plant Name	Reported 2016 SO <sub>2</sub> Emissions (tons)	Reported 2017 SO <sub>2</sub> Emissions (tons)	Description Change > ±20% 2016 to 2017
NM	15	350150002	Frontier Field Services /Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant; BP America Production]	271	94	Empire Abo Gas Plant was converted into a compressor station early April 2016. The SRU being taken out of service would be the decrease of SO <sub>2</sub> emissions.
NM	15	350150011	DCP Midstream/Artesia Gas Plant	25	9	DCP installed a second acid gas compressor allowing DCP to push acid gas downhole instead of flaring when the one unit went down.
NM	25	350250035	DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	322	393	DCP installed a second acid gas compressor allowing DCP to push acid gas downhole instead of flaring when the one unit went down.
NM	25	350250060	VERSADO GAS PROCESSORS, LP/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT]	23	75	This emission event resulted from a sudden and unexpected third-party purchase power interruption causing the Eunice North compressor station and Eunice Gas Plant to shut down and flare gas. Residue and field gas are flared at the compressor station during a compressor station and gas plant outage. The power interruptions continued over an extended period. Once power was reestablished and upon restarting the plant, the pressure drop across a subcooler exceeded the normal operating range. This required a plant shutdown to perform maintenance to remove the blockage in the subcooler causing flaring to occur at the compressor station.
NM	25	350250004	Frontier Field Services/Maljamar Gas Plant	213	113	The drop in SO <sub>2</sub> emissions in 2017 from Maljamar Gas Plant was from the reduction of flaring from the acid gas flare- unit 17. This was accomplished by adding a redundancy system to the acid gas injection station and operations reducing flaring volume that was sent to the flare.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2016 SO <sub>2</sub> Emissions (tons)	Reported 2017 SO <sub>2</sub> Emissions (tons)	Description Change > ±20% 2016 to 2017
NM	31	350310008	Western Refining Southwest Inc-Gallup Refinery {Old names:Western Refinery/Ciniza Refinery (Gallup) and GIANT REFINING/CINIZA}	33	51	An increase in the sulfur content of the FCC feed. In 2016, sulfur content of the FCCU feed averaged approximately 0.153% by weight. In 2017, the sulfur content increased to 0.174% by weight. The FCCU is capable of accommodating feed with varied composition (including sulfur) depending on the available crude supplies and product demand. An increase in the total FCCU feed. In 2016, the FCCU feed totaled 2.7 million barrels. In 2017, the FCCU feed totaled 3.0 million barrels. This change is due to increased onstream time (there was a unit turn around in 2016) and related, elevated production rate, year-over-year.
NM	25	350250007	Davis Gas Processing/Denton Plant	952	688	The primary reason for this decrease in SO <sub>2</sub> emissions in 2017 is from the decrease of acid gas generation at the Denton Gas Plant. This is the result of a lower gas processing rate in 2017 versus 2016 along with a decrease in the quantity of H <sub>2</sub> S in the inlet gas for 2017. For 2017, the site generated about 41,316 MCFY (113.19 MCFD) of acid gas versus 55,575 MCFY (152.26 MCFD) in 2016. This was a decrease of about 26% on acid gas and thus the resulting decrease of SO <sub>2</sub> emissions.
NM	15	350150008	OXY USA WTP Limited Partnership - Indian Basin Gas Plant [Old Name -Marathon Oil/Indian Basin Gas Plant]	51.29	16	There was an authorized acid gas compressor overhaul in 2016 claimed under ES-50-SSM, which lasted for 86.7 hours (almost 4 days). The longer duration of maintenance activity resulted in a higher total gas volume flared, hence the reason for the higher SO <sub>2</sub> emissions recorded for 2016. There were no major maintenance on the acid gas compressor in 2017, therefore the total duration of the minor maintenance activities (and total gas volume flared in 2017 were less.
NM	15	350150010	Navajo Refining Co/Artesia Refinery	38	52	The principal reason for the increase is due to an increase in SSM flare activity from 2016 to 2017.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2016 SO <sub>2</sub> Emissions (tons)	Reported 2017 SO <sub>2</sub> Emissions (tons)	Description Change > ±20% 2016 to 2017
NM	45	350450902	Public Service Co of New Mexico/San Juan Generating Station	2,923	4,535	The reason for the increase in SO <sub>2</sub> emissions was due to unit operation inefficiencies. During February through December 2016, Unit 3 experienced 60 days of "Process Off/Down Time" due to maintenance issues and/or other unexpected malfunctions. However, in 2017, Unit 3 operated at a greater efficiency with only 38 days of downtime, which resulted in the 1400 tpy increase in SO <sub>2</sub> emissions (with all four units in operation).
NM	25	350250008	Regency Field Services/Jal #3 [Old Name Southern Union Gas] /Jal #3	1,968	207	A large portion of the difference in the SO <sub>2</sub> emissions between 2016 and 2017 is attributed to the number, duration, and magnitude of the sites emissions events. It should also be noted that we processed more gas in 2016 than in 2017 resulting in a higher acid gas volume going to the SRU and ultimately higher SO <sub>2</sub> emissions at the thermal oxidizer..
NM	25	350250061	Versado Gas Processors, LLC / Monument Plant [Old name(s) TARGA MIDSTREAM SERVICES LP, WARREN PETROLEUM/MONUMENT PLANT]	1,953	1,007	The reason for the increase in SO <sub>2</sub> emissions at Monument in 2016 was that the AGI well at Monument failed and we had to permit and drill a new one. We began flaring acid gas I believe it was on 8/8/2016. We flared acid gas for the remainder of 2016 and into 2017 so the increase in SO <sub>2</sub> was significant for 2016. Targa completed the new well and flaring ceased toward the end of March 2017. There were five months of flaring in 2016, which increased SO <sub>2</sub> emissions as compared to only three months of flaring in 2017, which decreased SO <sub>2</sub> emissions.
NM	25	350250063	Versado Gas Processors, LLC/Saunders Plant [Old name(s): TARGA MIDSTREAM SERVICES, LP, WARREN PETROLEUM/SAUNDERS PLANT]	417	568	The reason for the observed increase in emissions was that the throughput was higher in 2017 compared to 2016. Also, the plant was shut down for approximately one week in 2016 which led to an observed decrease in the acid gas volume.
NM	45	350450247	CCI San Juan, LLC /San Juan River Gas Plant	143	272	The changes were related more to feed gas composition than to feed gas quantity. The plant began to process a new type of feed gas with higher CO <sub>2</sub> concentrations compared to typical historical feed gas compositions. The higher CO <sub>2</sub> concentrations in the feed gas contributed to the increased rate of acid gas flaring in 2017.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2016 SO <sub>2</sub> Emissions (tons)	Reported 2017 SO <sub>2</sub> Emissions (tons)	Description Change > ±20% 2016 to 2017
NM	25	350250113	ConocoPhillips-Midland Office / East Vacuum Liquid Recovery and CO <sub>2</sub> Plant	92	38	The reason for the decrease in SO <sub>2</sub> from 2017 to 2016 was that 2016 was an isolated year, higher than typical years. There were some process and equipment issues during 2016. The demister pad on the inlet separator had to be cleaned. There was plugging of inlet screens on the reinjection compressors with a sand/salt material. In 2017, we did not have any of the operational issues with the demister or compressor inlet screens. Also, in April of 2017, Train 2 reinjection compressors were started up and remained online allowing for spare compression to be used.
UT	49	10790	Brigham Young University -- Main Campus	137	-	Coal boiler is no longer in operation and being removed from facility.
UT	11	10123	Holly Refining and Marketing Co. -- Phillips Refinery	91	44	Decrease in SO <sub>2</sub> emissions due to installation of additional Wet Scrubber.
UT	35	10572	Kennecott Utah Copper Corp. -- Power Plant/Lab/Tailings Impoundment	2,152	1,036	Decrease in SO <sub>2</sub> emissions was due to removal of Boilers #1, #2, and #3.
UT	35	10346	Kennecott Utah Copper Corp. -- Smelter & Refinery	735	588	Decrease in SO <sub>2</sub> emissions was due to a decrease in the CEM value at Main Stack along with lower fugitive emissions.
UT	37	10034	CCI Paradox Midstream LLC (was Patara Midstream LLC, and was EnCana Oil & Gas (USA) Incorporated and Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	78	-	Facility was not in operation in 2017.
WY	5	146	Black Hills Corporation - Wygen 1	343	455	Increase in Operating time
WY	5	281	Black Hills Corporation - Wygen III	232	281	Increase in Operating Time
WY	13	0009	Burlington Resources -- Bighorn Wells	2	0	Flaring and maintenance
WY	13	28	Burlington Resources -- Lost Cabin Gas Plant	1,901	1,209	Lower Emissions Caused by downtime and adjustments in startup and shutdown procedures
WY	41	9	Chevron USA -- Carter Creek Gas Plant	130	55	The CY2017 SO <sub>2</sub> Emissions reflect a 57.85% decrease due to fewer plant upsets, better reaction time, and improved plant efficiency occurring in CY2017, compared to CY2016.

State	County FIPS	State Facility Identifier	Plant Name	Reported 2016 SO <sub>2</sub> Emissions (tons)	Reported 2017 SO <sub>2</sub> Emissions (tons)	Description Change > ±20% 2016 to 2017
WY	41	0008	Chevron USA -- Whitney Canyon/Carter Creek Well field	4		The 2015 SO2 emissions reflect a 78% increase from 2014 due to more emergency maintenance events and preventative maintenance activities.
WY	37	48	Tronox Alkali Wyoming Corporation -- Green River Sodium Products (Westvaco facility)	2,587	1,456	Change Due to fewer operating hours and lower sulfur coal
WY	13	0007	Devon Energy Production Co., L.P. -- Beaver Creek Gas Field	0		Sour Gas Production Ceased
WY	13	8	Devon Gas Services, L.P. -- Beaver Creek Gas Plant	0		Sour Gas Production ceased
WY	23	1	Exxon Mobil Corporation -- Labarge Black Canyon Facility	107	25	Increased Turnaround from 2016
WY	21	1	Holly Frontier Oil & Refining Company -- Cheyenne Refinery	373	250	New Control Equipment Added
WY	29	7	Marathon Oil Co -- Oregon Basin Gas Plant	290	227	No turnaround completed in 2017
WY	29	0010	Marathon Oil Co -- Oregon Basin Well field	77	49	No turnaround completed in 2017
WY	29		Merit Energy Company - Shoshone Unit Battery	13	18	Increase in Flaring
WY	29		Merit Energy Company - Frannie Unit Battery No 1	1	4	Increase in Flaring
WY	29		Merit Energy Company - Frannie 2 Battery	1	0	Less flaring Compared to last year
WY	41	0002	Merit Energy Company -- Whitney Canyon Well Field	0	0	Reduced Flaring Compared to Last Year
WY	5	46	Pacificorp -- Wyodak Plant	1,967	2,450	Increase is due to a unit outage in 2016 that wasn't present in 2017
WY	37	22	Simplot Phosphates LLC -- Rock Springs Plant	1,506	1,136	Decrease in Operating Hours
WY	37	5	Solvay Chemicals -- Soda Ash Plant (Green River Facility)	64	33	Increased Use of natural gas sources

State	County FIPS	State Facility Identifier	Plant Name	Reported 2016 SO <sub>2</sub> Emissions (tons)	Reported 2017 SO <sub>2</sub> Emissions (tons)	Description Change > ±20% 2016 to 2017
WY	37	49	Tronox Alkali Wyoming Corporation -- Granger Soda Ash Plant	322	189	Lower Sulfur coal used
WY	1	5	University of Wyoming - Heat Plant	29	53	Greater coal consumption
WY	56043	397	Washakie Midstream Services - Worland Gas Plant (WMS)	31	71	Increase due to compressor maintenance and an acid booster pump going down leading to an increase in flaring.



## 6.2 *Part 75 Data*

Federal Acid Rain Program emissions monitoring data (required by 40 CFR Part 75) were used to check reported power plant emissions.

Sources in the region subject to Part 75 emitted 69% of the region's reported emissions in 2017. We compared Acid Rain Program power plant emission data from EPA's Data and Maps website to plant totals reported by each state. The SIPs require the use of Part 75 methods for Part 75 sources. The reported emissions matched EPA's emission data<sup>a</sup>.

## 7.0 *Milestone Determination*

The Section 309 regional 2017 milestone is 155,940 tons SO<sub>2</sub>, which represents the average regional emissions milestone for the years 2015, 2016, and 2017. The average of 2015, 2016, and 2017 adjusted emissions is 79,709 tons SO<sub>2</sub>; therefore, the participating states have met the 155,940 tons SO<sub>2</sub> milestone.

## 8.0 *Public Comments*

New Mexico, Utah, and Wyoming each published a draft of this report for public review and comment. The draft was also available on the WRAP website.

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<sup>a</sup> The reported emissions for the San Juan Generating Station in NM contain an extra 10 tons of SO<sub>2</sub> emissions due to emission points that are not included in the acid rain data.

## Appendix A

**Table A-1  
2017 Reported and Adjusted Emissions for Sources Subject to  
Section 309 -- Regional Haze Rule**

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	2017 General New Monitoring Calculation Method Adjustment (tons)
NM	15	350150024		Agave Energy Co./Agave Dagger Draw Gas Plant	1311	211111	32	32	
NM	15	350150002		Frontier Field Services /Empire Abo Plant [Old name: Arco Permian/Empire Abo Plant; BP America Production]	1321	211112	94	94	
NM	15	350150011		DCP Midstream/Artesia Gas Plant	1321	211112	9	9	
NM	25	350250044		DCP Midstream/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1321	211112	1,385	1,385	
NM	25	350250035		DCP Midstream/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	1321	211112	393	393	
NM	15	350150138		Duke -- Magnum/Pan Energy -- Burton Flats	1321	211112			
NM	15	350150285		Duke Energy/Dagger Draw Gas Plant	1321	211112			
NM	25	350250060		VERSADO GAS PROCESSORS, LP/Eunice Gas Plant [Old name: WARREN PETROLEUM/EUNICE GAS PLANT]	1321	211112	75	75	
NM	25	350250004		Frontier Field Services/Maljamar Gas Plant	1321	211112	113	113	
NM	31	350310008		Western Refining Southwest Inc-Gallup Refinery (Old names:Western Refinery/Ciniza Refinery (Gallup) and GIANT REFINING/CINIZA)	2911	32411	51	51	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	2017 General New Monitoring Calculation Method Adjustment (tons)
NM	25	350250007		Davis Gas Processing/Denton Plant	1311	211111	688	688	
NM	15	350150008		OXY USA WTP Limited Partnership - Indian Basin Gas Plant [Old Name -Marathon Oil/Indian Basin Gas Plant]	1321	211112	16	16	
NM	15	350150010		Navajo Refining Co/Artesia Refinery	2911	32411	52	52	
NM	45	350450902	2451	Public Service Co of New Mexico/San Juan Generating Station	4911	221112	4,535	4,535	
NM	7	350070001		Raton Pub. Service/Raton Power Plant	4911	221112			
NM	25	350250008		Regency Field Services/Jal #3 [Old Name Southern Union Gas] /Jal #3	1321	211112	207	207	
NM	25	350250051		Versado Gas Processors, LP/Eunice South Gas Plant	1321	211112			
NM	25	350250061		Versado Gas Processors, LLC / Monument Plant [Old name(s):TARGA MIDSTREAM SERVICES LP, WARREN PETROLEUM/MONUMENT PLANT]	1321	211112	1,007	1,007	
NM	25	350250063		Versado Gas Processors, LLC/Saunders Plant [Old name(s): TARGA MIDSTREAM SERVICES, LP, WARREN PETROLEUM/SAUNDERS PLANT]	1321	211112	568	568	
NM	31	350310032	87	Tri-State Gen & Transmission/Escalante Station	4911	221112	729	729	
NM	45	350450247		CCI San Juan, LLC /San Juan River Gas Plant	1321	211112	272	272	
NM	45	350450023		Western Refining Southwest Inc./Bloomfield Products Terminal [Old name: GIANT INDUSTRIES/BLOOMFIELD REF]	2911	32411	0	0	
NM	25	350250075		ConocoPhillips-Midland Office / MCA Tank Battery No. 2	1311	211111	156	156	
NM	25	350250113		ConocoPhillips-Midland Office / East Vacuum Liquid Recovery and CO2 Plant	1311	211111	38	38	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	2017 General New Monitoring Calculation Method Adjustment (tons)
UT	49	10790		Brigham Young University -- Main Campus	8221	611310	-	-	
UT	11	10119		Chevron Products Co. -- Salt Lake Refinery	2911	324110	32	878	846
UT	11	10122		Big West Oil Company - Flying J Refinery	2911	324110	33	198	165
UT	27	10313		Graymont Western US Inc. -- Cricket Mountain Plant	1422	212312	18	18	
UT	29	10007		Holcim-Devil's Slide Plant	3241	327310	196	439	243
UT	11	10123		Holly Refining and Marketing Co. -- Phillips Refinery	2911	324110	44	44	
UT	27	10327	6481	Intermountain Power Service Corporation -- Intermountain Generation Station	4911	221112	2,484	2,484	
UT	35	10572		Kennecott Utah Copper Corp. -- Power Plant/Lab/Tailings Impoundment	1021	212234	1,036	1,036	
UT	35	10346		Kennecott Utah Copper Corp. -- Smelter & Refinery	3331	331411	588	588	
UT	27	10311		Materion Natural resources - Delta Mill (was Brush Resources)	1099	212299	-	-	
UT	7	10081	3644	PacifiCorp -- Carbon Power Plant	4911	221112	-	8,005	8,005
UT	15	10237	6165	PacifiCorp -- Hunter Power Plant	4911	221112	3,512	3,512	
UT	15	10238	8069	PacifiCorp -- Huntington Power Plant	4911	221112	2,281	2,281	
UT	37	10034		CCI Paradox Midstream LLC (was Patara Midstream LLC, and was EnCana Oil & Gas (USA) Incorporated and Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	2911	211111	-	-	
UT	7	10096		Sunnyside Cogeneration Associates -- Sunnyside Cogeneration Facility	4911	221112	477	477	
UT	35	10335		Tesoro West Coast -- Salt Lake City Refinery	2911	324110	499	499	
UT	43	10676		Utelite Corporation -- Shale processing	3295	212399	137	137	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	2017 General New Monitoring Calculation Method Adjustment (tons)
WY	11	2		American Colloid Mineral Co -- Colony East & West Plants	1459	212325	100	100	
WY	5	45	56609	Basin Electric -- Dry Fork Station	4911	22112	1,047	1,047	
WY	31	1	6204	Basin Electric -- Laramie River Station	4911	221112	6,522	6,522	
WY	3	12		Big Horn Gas Proc -- Big Horn/Byron Gas Plant	1311	22121			
WY	5	2	4150	Black Hills Corporation - Neil Simpson I	4911	22112			
WY	5	63	7504	Black Hills Corporation - Neil Simpson II	4911	22112	350	350	
WY	45	5	4151	Black Hills Corporation - Osage Plant	4911	22112			
WY	5	146	55479	Black Hills Corporation - Wygen 1	4911	22112	455	455	
WY	5	281	56596	Black Hills Corporation - Wygen III	4911	221112	281	281	
WY	13	0009		Burlington Resources -- Bighorn Wells	1300	21111			
WY	13	28		Burlington Resources -- Lost Cabin Gas Plant	1311	211111	1,209	1,209	
WY	41	9		Chevron USA -- Carter Creek Gas Plant	1311	211111	55	55	
WY	37	0177		Chevron USA -- Table Rock Field	1300	21111			
WY	37	14		Chevron USA -- Table Rock Gas Plant (Formerly Anadarko E&P Co LP)	1321	211111			
WY	41	0008		Chevron USA -- Whitney Canyon/Carter Creek Well field	1300	21111			
WY	5	225	56319	Cheyenne Light Fuel and Power Company -- Wygen II	4911	22112	267	267	
WY	37	48		Tronox Alkali Wyoming Corporation -- Green River Sodium Products (Westvaco facility)	2812	327999	1,456	1,456	
WY	13	0007		Devon Energy Production Co., L.P. -- Beaver Creek Gas Field	1300	21111			
WY	13	8		Devon Gas Services, L.P. -- Beaver Creek Gas Plant	1311	211111	0	0	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	2017 General New Monitoring Calculation Method Adjustment (tons)
WY	23	1		Exxon Mobil Corporation -- Labarge Black Canyon Facility	1300	21111	25	25	
WY	23	13		Exxon Mobil Corporation -- Shute Creek	1311	211111	1,582	1,582	
WY	43	3		Hiland Partners, LLC -- Hiland Gas Plant	1321	48621			
WY	21	1		Holly Frontier Oil & Refining Company -- Cheyenne Refinery	2911	32411	250	250	
WY	29	7		Marathon Oil Co -- Oregon Basin Gas Plant	1321	211112	227	227	
WY	29	0010		Marathon Oil Co -- Oregon Basin Well field	1300	21111	49	49	
WY	37	8		Merit Energy Company - Brady Gas Plant (formerly Anadarko E&P Co LP)	1321	211112	0	0	
WY	29			Merit Energy Company - Shoshone Unit Battery		211112	18	18	
WY	29			Merit Energy Company - Frannie Unit Battery No 1		211112	4	4	
WY	29			Merit Energy Company - Cody Battery		211112	11	11	
WY	29			Merit Energy Company - Frannie 2 Battery		211112	0	0	
WY	41	0002		Merit Energy Company -- Whitney Canyon Well Field	1300	21111	0	0	
WY	41	12		Merit Energy Company -- Whitney Facility	1311	211111	0	0	
WY	1	2		Mountain Cement Company -- Laramie Plant	3241	23571	162	162	
WY	37	3		P4 Production, L.L.C. -- Rock Springs Coal Calcining Plant	3312	331111	673	673	
WY	9	1	4158	Pacificorp - Dave Johnston Plant	4911	221112	8,209	8,209	
WY	37	1002	8066	Pacificorp -- Jim Bridger Plant	4911	221112	10,264	10,264	
WY	23	4	4162	Pacificorp -- Naughton Plant	4911	221112	4,048	4,048	
WY	5	46	6101	Pacificorp -- Wyodak Plant	4911	221112	2,450	2,450	

State	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2017 SO <sub>2</sub> Emissions (tons)	Adjusted 2017 SO <sub>2</sub> Emissions (tons)	2017 General New Monitoring Calculation Method Adjustment (tons)
WY	37	22		Simplot Phosphates LLC -- Rock Springs Plant	2874	325312	1,136	1,136	
WY	7	1		Sinclair Oil Company -- Sinclair Refinery	2911	32411	77	77	
WY	25	5		Sinclair Wyoming Refining Company -- Casper Refinery	2911	32411	146	146	
WY	37	5		Solvay Chemicals -- Soda Ash Plant (Green River Facility)	1474	325181	33	33	
WY	37	2		TATA Chemicals (Soda Ash Partners)-- Green River Plant (formerly General Chemical)	1474	327999	3,380	3,380	
WY	15	1		The Western Sugar Cooperative -- Torrington Plant	2063	311313	6	6	
WY	37	49		Tronox Alkali Wyoming Corporation -- Granger Soda Ash Plant	1474	212391	189	189	
WY	1	5		University of Wyoming - Heat Plant	8221	61131	53	53	
WY	29	12		Vanguard Operating, LLC -- Elk Basin Gas Plant	1311	211111	668	668	
WY	56043	397		Washakie Midstream Services - Worland Gas Plant (WMS)	1321	211112	71	71	
WY	45	1		Wyoming Refining -- Newcastle Refinery	2911	32411	14	14	

## Appendix B

**Table B-1**  
**Sources Added to the SO<sub>2</sub> Emissions and Milestone Report Inventory**

State	County FIP Code	State Facility ID	Facility Name	Report Year of Change
UT	043	10676	Utelite Corporation -- Shale processing	2003
WY	011	0002	American Colloid Mineral Company -- East Colony	2003
WY	011	0003	American Colloid Mineral Company -- West Colony	2003
WY	037	0014	Chevron USA (previously owned by Anadarko E&P Company LP) -- Table Rock Gas Plant	2003
WY	005	0146	Black Hills Corporation -- Wygen 1	2003
WY	041	0002	BP America Production Company -- Whitney Canyon Well Field	2003
WY	013	0009	Burlington Resources -- Bighorn Wells	2003
WY	037	0177	Chevron USA -- Table Rock Field	2003
WY	041	0008	Chevron USA -- Whitney Canyon/Carter Creek Well field	2003
WY	013	0008	Devon Energy Corp. -- Beaver Creek Gas Plant	2003
WY	035	0001	Exxon Mobil Corporation -- Labarge Black Canyon Facility (also identified as Black Canyon Dehy Facility)	2003
WY	013	0007	Devon Energy Corp. -- Beaver Creek Gas Field	2004
WY	005	0225	Cheyenne Light, Fuel and Power (a subsidiary of Black Hills Corporation) -- Wygen II	2008
WY	005	0281	Black Hills Corporation -- Wygen III	2010
WY	005	0045	Basin Electric -- Dry Fork Station	2011
NM	025	350250075	ConocoPhillips-Midland Office / MCA Tank Battery No. 2	2013
NM	025	350250113	ConocoPhillips-Midland Office / East Vacuum Liquid Recovery and CO <sub>2</sub> Plant	2013



**Table B-2**  
**Sources Removed from the SO<sub>2</sub> Emissions and Milestone Report Inventory**

State	County FIP Code	State Facility ID	Facility Name	1998 Baseline Emissions (tons/year)	Reason for Change	Report Year of Change
WY	043	0001	Western Sugar Company -- Worland	154	Emissions did not meet 100 TPY program criteria.	2003
WY	017	0006	KCS Mountain Resources -- Golden Eagle	942	Emissions did not meet 100 TPY program criteria.	2003
WY	003	0017	KCS Mountain Resources -- Ainsworth	845	Closed since 2000.	2003
WY	017	0002	Marathon Oil -- Mill Iron	260	Emissions did not meet 100 TPY program criteria.	2003
UT	049	10796	Geneva Steel -- Steel Manufacturing Facility	881	Plant is shut down and disassembled.	2004
WY	023	0001	Astaris Production -- Coking Plant	1,454	Plant is permanently shut down and dismantled.	2004
ABQ* NM	001	00008	GCC Rio Grande Cement	1,103	Not subject to program after baseline revisions.**	2008
ABQ NM	001	00145	Southside Water Reclamation Plant	120	Not subject to program after baseline revisions.**	2008
NM	023	35023000 3	Phelps Dodge Hidalgo Smelter	16,000	Facility is permanently closed.	2008
NM	017	35017000 1	Phelps Dodge Hurley Smelter/Concentrator	22,000	Facility is permanently closed.	2008
WY	003	00012	Big Horn Gas Processing -- Bighorn/Byron Gas Plant	605	Facility is permanently closed and dismantled.	2011

\* ABQ NM means Albuquerque-Bernalillo County.

\*\* 1998 baseline emissions were based on the facilities' potential to emit (PTE), and not actual emissions. Actual annual emissions have always been below 100 tons. Once the year 2006 baseline became effective, these facilities were removed from the inventory.