



## 2005 Regional SO<sub>2</sub> Emissions and Milestone Report

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## 2005 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 national parks and wilderness areas on the Colorado Plateau. Five states -- Arizona, New Mexico, Oregon, Utah, and Wyoming -- exercised this option by submitting plans to EPA by December 31, 2003. The tribes were not subject to the deadline and still can opt into the program at any time. Under the Section 309 plans, these five states have begun to track 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 with the implementation and management of the regional emission reduction program.

As part of this program, the participating 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 first report was submitted in 2004 for the calendar year 2003.

The milestone for 2005 was set at 446,903 tons for the five-state region. To determine whether or not the milestone was met, the 2003, 2004, and 2005 adjusted emissions were averaged, and this average was compared to the 2005 milestone. The adjustments to reported emissions were required to allow the current emissions estimates to be comparable to the emissions monitoring or calculation method used in the base year inventory (1999 for utilities and 1998 for all other sources).

The states of Arizona, New Mexico, Oregon, Utah, and Wyoming reported 284,911 tons of SO<sub>2</sub> emissions for the calendar year 2005. The total emissions increased to 304,591 tons of SO<sub>2</sub> after making adjustments to account for changes in monitoring and calculation methods. The adjustments result in an additional 19,680 tons of SO<sub>2</sub> emissions, which is about 7% of the reported total emissions. Adjustments required for changes in Part 75, Acid Rain Program, flow monitor quality assurance methods account for about 17,619 tons (90%) of the increase in the estimate, with the remaining 2,061 tons from other types of monitoring and calculation method changes. The 2005 adjusted emissions total of 304,591 tons was lower than the 2004 adjusted emissions total of 337,970 tons. The average of 2003, 2004, and 2005 adjusted emissions is 324,413 tons.

Based on this average adjusted annual emissions estimate, a determination has been made that the five states have met the 2005 regional SO<sub>2</sub> milestone of 446,903 tons. The 446,903 ton milestone was determined as described in Section 51.309(h)(1)(i) and the 309 State Implementation Plans (SIPs). The milestone includes an adjustment to the base milestone to subtract emissions for western states

**Based on the adjusted milestone and emissions data, the average of 2003, 2004, & 2005 emissions is about 27% below the 2005 five state regional milestone.**

not participating. The SIPs contain additional provisions to adjust the milestones to reflect variations in smelter operations, and 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 SIP requirements regarding adjustments to the milestones, the 2005 period does not require a smelter adjustment, or adjustments for enforcement actions.

The SIPs also require that the annual report identify changes in the source population from year to year and significant changes in a source's emissions from year to year. The significant emissions changes from 2004 to 2005 are included in Section 7 of this report. A list of facilities added to or removed from the list of subject sources included in the base year inventories is included in Appendix B.

**Table ES-1**  
**Overview of 2005 Regional Milestone and Emissions for Section 309 Participating States**

<b><u>2005 Sulfur Dioxide Milestone</u></b>	
Base Regional 2005 Milestone*	682,000 tons
Adjustments**	
States and Tribes not Participating in the Program	-235,097 tons
Smelter Operations	0 tons
Enforcement	0 tons
Adjusted 5-State 2005 Milestone	446,903 tons
<b><u>2005 Sulfur Dioxide Emissions</u></b>	
Reported 5-State 2005 Emissions	284,911 tons
Adjustments***	
Part 75 Flow Rate Procedures	17,619 tons
Other Emission Monitoring and Calculation Methods	2,061 tons
Adjusted 5-State 2005 Emissions	304,591 tons
<b><u>Average Sulfur Dioxide Emissions (2003, 2004 &amp; 2005)</u></b>	
Adjusted 5-State 2005 Emissions	304,591 tons
Adjusted 5-State 2004 Emissions	337,970 tons
Adjusted 5-State 2003 Emissions	330,679 tons
Average of 2003, 2004 & 2005 Adjusted 5-State Emissions	324,413 tons
<b><u>Comparison of Emissions to Milestone</u></b>	
Average of 2003, 2004 & 2005 Adjusted 5-State Emissions	324,413 tons
Adjusted 5-state 2005 Milestone	446,903 tons
Difference (negative value = emissions < milestone)	-122,490 tons
2003 - 2005 Emissions Average as Percent of 2005 Milestone	73%

\* See 40 CFR 51.309(h)(1), Table 1, Column 3, and the Regional Milestones section of each state's 309 SIP. (Applies if neither the BHP San Manuel nor the Phelps Dodge smelter facilities resume operation.)

\*\* See 40 CFR 51.309(h)(1)(i), and (ii), and (v)-(viii), and the Regional Milestones section of each state's 309 SIP.

\*\*\* See 40 CFR 51.309(h)(1)(iii) and (iv), and the Annual Emissions Report section of each state's 309 SIP.

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## **2005 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 plans to reduce regional haze emissions that impair visibility at 16 Class I national parks and wilderness areas on the Colorado Plateau. Five states -- Arizona, New Mexico, Oregon, Utah, and Wyoming -- and the city of Albuquerque, New Mexico exercised this option by submitting plans to EPA by December 1, 2003. The tribes were not subject to this deadline and still can opt into the program at any time.

Under the Section 309 State Implementation Plans (SIPs), these five states have begun to track emissions under the pre-trigger requirements of the SO<sub>2</sub> Milestone and Backstop Trading Program. 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, the states have established annual SO<sub>2</sub> emissions targets (from 2003 to 2018). These voluntary emissions reduction targets represent reasonable progress in reducing the 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 third 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 2005. Based on the first three years, the voluntary milestone phase of the program is working, 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 Environmental Protection Agency (EPA) issued regulations to address regional haze in 156 national parks and wilderness areas across the country. These regulations were published 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 60 years, and requires states to adopt implementation plans.

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. These strategies must be shown to 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 same strategies can also be used by the nine western states and tribes to protect the other Class I areas within their own jurisdictions.

### 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 have submitted Section 309 SIPs to EPA. These states are Arizona, New Mexico, Oregon, Utah, and Wyoming. In addition, the City of Albuquerque has also submitted a Section 309 SIP. 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 Regional Haze Rule.

The following summarizes a few key elements of the Section 309 process for the five states:

1. Section 309(d)(4)(i) requires SO<sub>2</sub> milestones in the SIP. Section 309(h)(1) contains the actual SO<sub>2</sub> milestones for each year from 2003 to 2018, and includes provisions for making adjustments to these milestones if necessary.
2. Section 309(d)(4)(ii) 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. Section 309(h)(2) specifies that monitoring and reporting starts in 2003, and applies to all sources with reported SO<sub>2</sub> emissions over 100 tons per year. Section 309(h)(2) also contains provisions on how to document emission calculations, conduct recordkeeping, and comply with other reporting requirements.
3. Section 309(d)(4)(iii) requires that a SIP contain criteria and procedures for activating the trading program within 5 years if an annual milestone is exceeded. A Section 309 SIP

also must provide assessments in 2008, 2013, and 2018. Section 309(h)(3) describes the mechanism for comparing emissions to the milestones using annual emission reports, and allows for a regional planning organization like the WRAP to assist in performing this function. It also includes requirements for public and independent review.

This report responds to Item 3, above, and provides the annual report that compares the 2005 emissions against the milestones for the states 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 flow rate measurement methods;
  - 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). Since this is the third report, 2003, 2004, and 2005 emissions are averaged.
4. Regional milestone adjustments to account for states/tribes not participating in the program and the operational status of certain smelters.

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

While the WRAP assists with the preparation of this report, each state reviews the information in the report, and proposes a draft determination that the regional SO<sub>2</sub> milestone has either been met or exceeded. The draft determination is then submitted for public review and comment during the first part of 2007, culminating in a final report sent to EPA by March 31, 2007.

### **1.2 Report Organization**

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

- Reported SO<sub>2</sub> Emissions in 2005
- Monitoring Methodology Emissions Adjustments
- Three-year Average Emissions



- Enforcement Milestone Adjustments
- Smelter Milestone Adjustments
- Quality Assurance (including Source Change information)
- Preliminary Milestone Determination
- Appendix A - Facility Emissions and Emissions Adjustments
- Appendix B - Changes to SO<sub>2</sub> Emissions and Milestone Source Inventory

## 2.0 Reported SO<sub>2</sub> Emissions in 2005

All stationary sources with reported emissions of 100 tons or more per year in 2000 or any subsequent year are required to report annual SO<sub>2</sub> emissions. Table 1 summarizes the annual reported emissions from applicable sources in each state. The 2005 reported SO<sub>2</sub> emissions for each applicable source are listed in Appendix A, Table A-1.

**Table 1**  
**Reported 2005 SO<sub>2</sub> Emissions by State**

State	Reported 2005 SO <sub>2</sub> Emissions (tons/year)
Arizona	72,157
New Mexico	34,138
Oregon	16,549
Utah	42,233
Wyoming	119,834
TOTAL	284,911

## 3.0 Monitoring Methodology Emissions Adjustments

The annual emissions reports for each state include proposed emissions adjustments to ensure consistent comparison of emissions to the milestones. The adjustments account for any differences in emissions that result from changes in the monitoring or calculation methodology used in 2005 as compared to the methodology used to calculate baseline year emissions. The adjustments described in the following sections will also be performed in subsequent reports until the milestones are revised in the SIPs.

### 3.1 Changes in Part 75 Flow Rate Methodology

The 309 SIPs and Section 51.309(h)(1)(iv) spell out three specific methods for adjusting Part 75 Acid Rain Program electric generating unit emissions due to changes in quality assurance procedures for the flow monitor component of SO<sub>2</sub> continuous emission monitoring systems. These changes involve the use of new flow reference methods in the Relative Accuracy Test Audit (RATA), which were not available in the 1999 baseline year. The use of these new

methods (reference methods 2F, 2G, 2H, and 2J) are expected to result in a decrease in the SO<sub>2</sub> emissions measurement.

The three methods in the SIPs for adjusting for flow RATA reference method changes are outlined below:

1. Directly determine the difference in flow rate through a side-by-side comparison of data collected with the new and old flow reference methods during a RATA test.
2. Compare the annual average heat rate using Acid Rain heat input data (mmBtu) and total generation (MWhrs) as reported to the federal Energy Information Administration (EIA). Under this approach, the flow adjustment factor shall be calculated using the following ratio:

$$\frac{\text{Heat input/MW for first full year of data using new flow rate method}}{\text{Heat input/MW for last full year of data using old flow rate method}}$$

3. Compare the standard CFM per MW before and after the new flow reference method based on CEM data submitted in the Acid Rain Program, as follows:

$$\frac{\text{SCF/Unit of Generation for first full year of data using new flow rate method}}{\text{SCF/Unit of Generation for last full year of data using old flow rate method}}$$

New Mexico, Utah, Arizona, and Wyoming provided adjusted emissions for changes in the Part 75 flow RATA reference method for several plants: the Public Service Corp of New Mexico San Juan plant and the Tri-State Escalante plant in New Mexico; the PacifiCorp Carbon, Hunter, and Huntington plants and the Intermountain Power Service Corporation plant in Utah; the AEPCO Apache Station and Pinnacle West - Cholla Generating Station in Arizona; and the Pacificorp Dave Johnston, Jim Bridger, Naughton, and Wyodak plants in Wyoming. Changes in the RATA flow reference method result in an upward adjustment for the 2005 SO<sub>2</sub> emissions of 17,619 tons.

The adjustment for each of these plants is listed below in Table 2. The Appendix table A-1 provides additional information on the flow RATA reference method changes, and which adjustment method was used for each plant.

**Table 2**  
**Adjustments for Changes in Part 75 Flow RATA**

State	Source	Reported 2005 SO <sub>2</sub> Emissions (tons)	Flow RATA Adjustment (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)
AZ	AEPCO - Apache Station	2,657	13	2,670
AZ	Pinnacle West - Cholla Generating Station	22,027	77	22,104
NM	Public Service Co of New Mexico/San Juan Generating Station	16,587	2,584	19,171
NM	Tri-State Gen & Transmission/Escalante Station	1,293	538	1,831
UT	Intermountain Power Service Corporation - Intermountain Generation Station	3,596	18	3,614
UT	PacifiCorp - Carbon Power Plant	5,411	853	6,264
UT	PacifiCorp - Hunter Power Plant	6,277	940	7,217
UT	PacifiCorp - Huntington Power Plant	17,364	2,972	20,336
WY	PacifiCorp - Dave Johnston	19,751	4,109	23,860
WY	PacifiCorp - Jim Bridger	21,651	1,573	23,224
WY	PacifiCorp - Naughton	23,229	3,478	26,707
WY	PacifiCorp - Wyodak	7,732	464	8,196

### 3.2 Changes in Emissions Monitoring and Calculation Methodology

In addition to the specific flow reference method related requirement for Part 75 program sources, there is also a general requirement to account for any changes in emissions monitoring or calculation methods. The reported emissions are adjusted so that the adjusted emissions levels are comparable to the levels that would result if the state used the same emissions monitoring or calculation method that was used in the base year inventory (1999 for utilities and 1998 for all other sources). The net impact throughout the region as a result of these adjustments is an increase of 2,061 tons from the reported 2005 emissions. Table 3 summarizes these results, and Appendix A provides additional source information. Some key aspects of the adjustments include:

- Oregon adjusted its 2005 SO<sub>2</sub> emissions inventory upwards by 2 tons.
- Utah adjusted their emissions upwards by 70 tons.

- Wyoming adjusted their emissions upward by 826 tons.
- Arizona did not report any emissions adjustments.
- The city of Albuquerque, New Mexico reported that plant baseline emissions were incorrect for two facilities which should not have been included in milestone calculations. In each case, the 1998 baseline emissions were based on the facility potential to emit, and not on reported emissions, which were less than 100 tons per year in 1998 and in each year since then. Thus, their emissions would not typically be included in this report, but until the milestones can be revised in the next SIP revision to correct the baseline error, these sources will be included and adjusted up to their potential to emit so that "paper decreases" in emissions are not counted towards meeting the milestones.
- New Mexico did not have information on the baseline year emissions calculation and monitoring methodologies, and thus did not make any adjustments for facilities under the state's jurisdiction. The 1998 baseline year corresponded to a period when New Mexico's inventory relied on the sources to calculate and report emissions. Also, during that period, New Mexico prepared an emissions inventory every other odd year (1997 and 1999).

**Table 3**  
**Adjustments for Changes in Monitoring Methodology**  
**(Oregon, Utah, Wyoming, and Albuquerque, New Mexico)**

<b>State</b>	<b>Source</b>	<b>Reported 2005 SO<sub>2</sub> Emissions (tons)</b>	<b>Adjusted 2005 SO<sub>2</sub> Emissions (tons)</b>	<b>Monitoring Methodology Adjustment (tons)</b>	<b>Comment</b>
NM	GCC Rio Grande Cement	16	1,103	1,087	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential emissions.
NM	Southside Water Reclamation Plant	44	120	76	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between reported and potential emissions.

(cont.)

**Table 3**  
**Adjustments for Changes in Monitoring Methodology**  
**(Oregon, Utah, Wyoming, and Albuquerque, New Mexico) (cont.)**

State	Source	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Monitoring Methodology Adjustment (tons)	Comment
OR	Weyerhaeuser Company	229	231	2	State emission factor changed. Methodology did not.
UT	Chevron Products Co. - Salt Lake Refinery	2,201	1,780	-421	AP42 emission factor changed. In calculating flares, method changed from AP42 to engineering data.
UT	Graymont Western US Inc. - Cricket Mountain Plant	8	415	407	AP42 emission factors changed. Method of calculating kiln emissions changed from permit limit to stack test.
UT	Tesoro West Coast - Salt Lake City Refinery	880	846	-34	Reported emissions include SO <sub>3</sub> . SO <sub>3</sub> was not included in 1998.
UT	Holly Ref. - Phillips Refinery	574	692	118	Changed the estimation method from AP42 in 1998 to CEM.
WY	Anadarko E&P Co LP - Brady Gas Plant	84	149	65	Thermal oxidizer used stack test and hours of operation in 1998; went to CEM in 2002.
WY	Black Hills Corporation - Neil Simpson I	945	1,013	68	Mass balance approach replaced the 1990 stack test results used in the baseline year.
WY	Frontier Oil & Refining - Cheyenne	1,438	1,460	22	Source 43 coker flare used stack test and coke cycle time for hours in 1998; went to permitted limit and ratio of reported/permitted throughput in 2001.
WY	Solvay Minerals - Soda Ash Plant	68	100	32	Change in calculation method from base year.
WY	Sinclair Oil Company - Sinclair Refinery	1,740	2,379	639	FCC unit used stack test and hours of operation in 1998; went to CEM in 2004.

#### 4.0 Three-Year Average Emissions (2003, 2004, and 2005)

The SIPs require multi-year averaging of emissions from 2004 to 2017 for the milestone comparison. From 2005 to 2017, a three-year average (which includes the reporting year and the two previous years) will be calculated to compare with the milestone. The average of the three years' emissions from 2003 to 2005 is 324,413 tons, which is less than the 2005 adjusted milestone of 446,903 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 Sulfur Dioxide Emissions (2003, 2004 & 2005)**

Year	Adjusted SO <sub>2</sub> Emissions (tons/year)
2003	330,679
2004	337,970
2005	304,591
Three Year Average (2003, 2004, 2005)	324,413

#### 5.0 Enforcement Milestone Adjustments

The SIPs require that each state report on proposed milestone adjustments that are 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 approved SIP revision before taking effect (See Section 51.309(h)(1)(v) of the Regional Haze Rule).

##### Enforcement Milestone Adjustment

There were no proposed enforcement action related milestone adjustments reported for 2005.

#### 6.0 Smelter Milestone Adjustments

##### Smelter Adjustment Scenarios

There are two general milestone adjustment scenarios for smelters in the 309 SIPs and 40 CFR 51.309(h)(1)(ii). First, if either the BHP San Manuel (Arizona) or Phelps Dodge Hidalgo (New Mexico) smelter resumes operation, the milestones will be increased. Once the adjustments have been made for each smelter, the milestones would not be changed due to future suspensions or changes in plant operations, except as specifically provided in the regulations. At this point neither of these smelters has resumed operation, so this type of adjustment does not apply for the 2005 period.

The second type of adjustment applies to the operations at the remaining smelters. If one or both of the BHP San Manuel or Phelps Dodge Hidalgo smelters do not resume operation, the state or tribe will determine the amount of facility specific set-aside, if any, that will be added to the milestone to account for operational increases at the remaining smelters. This set-aside is only available for use if the annual sulfur input and emissions from the copper smelters are above the baseline levels listed in the applicable SIP. The increase to the milestone is based on a smelter's proportional increase above its baseline sulfur input.

### 2005 Smelter Adjustment

A comparison of smelter 2005 emissions to baseline levels in Table 3B of Section 51.309 is provided in Table 5, and shows that none of the operating smelters reported 2005 SO<sub>2</sub> emissions that exceed the baseline emissions. Therefore, the milestone adjustment from the facility-specific set-asides does not apply in 2005.

**Table 5**  
**Smelter 2005 SO<sub>2</sub> Emissions and Baseline SO<sub>2</sub> Emissions**

State	Source	Reported 2005 SO <sub>2</sub> Emissions (tons)	SO <sub>2</sub> Baseline Emissions (tons)
AZ	BHP San Manuel	0	16,000
AZ	Asarco Hayden	12,723	23,000
AZ	Phelps Dodge Miami	7,366	8,000
NM	Phelps Dodge Hurley	1	16,000
NM	Phelps Dodge Hidalgo	0	22,000
UT	Kennecott Salt Lake	777	1,000

## 7.0 Quality Assurance

The states provided 2005 emissions data based on their state emissions inventories. For this report, additional quality assurance (QA) procedures were used 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.

### 7.1 Source Change Report

Section 51.309(v) and 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:

- 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; and
- An explanation for emissions variations at any applicable source that exceeds  $\pm 20$  percent from the previous year.

No sources were added or removed from the program inventory in 2005. A list of sources that were added or removed from the program inventory in previous reporting years is provided in Appendix B. Table 6 provides explanations for the emissions variations from 2004 to 2005 that are greater than 20 percent. Plants with variations greater than 20 percent, but reported emissions of less than 20 tons, are not included in Table 6. Information on these plants is provided in Appendix A.



**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year**

State	County FIP Code	State Facility ID	Reported 2004 SO <sub>2</sub> Emissions (tons)	Reported 2005 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
AZ	017	1807	2,020	1,516	Abitibi - Snowflake Pulp Mill	Reduced operations and decrease in coal sulfur content
AZ	019	2869	107	6	Arizona Portland Cement	Emissions back to normal
AZ	007	2435	19,395	12,723	ASARCO - Hayden Smelter	Reduced throughput
AZ	003	2148	126	755	CLC - Douglas Lime Plant	Facility fully operational
AZ	001	4477	13,950	10,480	SRP - Coronado Generating Station	Decrease in coal sulfur content
AZ	001	3222	17,976	9,882	TEP - Springerville Generating Station	Low sulfur coal used and upgraded existing controls
AZ	015	5992	850	1,025	CLC - Nelson Lime Plant	Use of higher sulfur content fuel
AZ	017	447	18,241	22,027	Pinnacle West - Cholla Generating Station	Increased production. No capacity increase.
NM	007	350070001	196	149	Raton Pub. Service/Raton Power Plant	Retired standby/back-up boiler #4
NM	015	350150002	465	295	Frontier Field Services/Empire Abo Plant [Old names: BP America Production/Empire Abo Plant; Arco Permian/Empire Abo Plant]	Decreased usage of emergency flares and amine unit
NM	015	350150008	2,565	905	Marathon Oil/Indian Basin Gas Plant	Decreased usage of emergency flares and amine unit
NM	015	350150010	142	102	Navajo Refining Co/Artesia Refinery	Change in operation
NM	015	350150011	1,210	528	Duke Energy Field Services/Artesia Gas Plant	Decreased usage of emergency flares and SRU
NM	025	350250007	535	771	J L Davis Gas Processing/Denton Plant	Increased usage of the Zink acid gas flare

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIP Code	State Facility ID	Reported 2004 SO <sub>2</sub> Emissions (tons)	Reported 2005 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
NM	025	350250035	7,837	1,874	Duke Energy Field Services/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	Decreased usage of amine units
NM	025	350250044	8,023	305	Duke Energy Field Services/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	Decreased usage of flares
NM	025	350250060	1,933	2,567	Targa Midstream Services/Eunice Gas Plant[Old names: Dynegy Midstream Services/Eunice Gas Plant; WARREN PETROLEUM/EUNICE GAS PLANT]	Increased usage of flares and SRU
NM	025	350250061	2,416	1,114	Targa Midstream Services/Monument Plant [Old names: Dynegy Midstream Services/Monument Plant; WARREN PETROLEUM/MONUMENT PLANT]	Decreased usage of flares and SRU
NM	025	350250063	569	358	Targa Midstream Services/Saunders Plant [Old names: Dynegy Midstream Services/Saunders Plant; WARREN PETROLEUM/SAUNDERS PLANT]	Decreased usage of flares and SRU
OR	005	2145	516	203	West Linn Paper Company	Production activity decreased from 2004 to 2005.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIP Code	State Facility ID	Reported 2004 SO <sub>2</sub> Emissions (tons)	Reported 2005 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
OR	041	0005	418	259	Georgia-Pacific West, Inc.	Production activity decreased from 2004 to 2005.
OR	043	0471	160	229	Weyerhaeuser Company	Production activity increased from 2004 to 2005.
OR	045	0002	775	0	The Amalgamated Sugar Company	No processing of sugar beets in 2005.
UT	011	10119	1,365	2,201	Chevron Products Co. - Salt Lake Refinery	The company had a large increase in breakdowns from 2004 to 2005. AP42 emission factor change (adjustment of +0.44). Calculation method for flares changed from AP42 to engineering data (Adjustment of -421.02).
UT	037	10034	795	293	EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	The company had a large decrease in natural gas consumption.
UT	011	10123	474	574	Holly Refining and Marketing Co.-Phillips Refinery	There was a large increase in the amount of mixed fuel consumed.
UT	027	10313	418	8	Graymont Western US Inc. - Cricket Mountain Plant	AP42 emission factors changed (adjustment of -0.027). Method of calculating kiln emissions changed from permit limit to stack test (adjustment of +406.857).
WY	011	0002	68	211	American Colloid Mineral Co. - East Colony	Natural Process Variation: SO <sub>2</sub> emissions associated with natural gas combustion in the unit & belt heaters is included in the dryer emissions.
WY	011	0003	51	180	American Colloid Mineral Co. - West Colony	Natural Process Variation: The only sources of SO <sub>2</sub> emissions are the dryers & heaters, all of which are combustion emissions.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

State	County FIP Code	State Facility ID	Reported 2004 SO <sub>2</sub> Emissions (tons)	Reported 2005 SO <sub>2</sub> Emissions (tons)	Facility Name	Reason for Change
WY	013		2,163	0	Burlington Resources - Bighorn Wells	Natural Process Variation: No flaring from the Madden Field in 2005.
WY	013	0028	2,230	1,232	Burlington Resources - Lost Cabin Gas Plant	Natural Process Variation: Lower SO <sub>2</sub> emissions due to improved plant operation, resulting in fewer flaring episodes.
WY	041	0009	26	1,122	Chevron USA - Carter Creek Gas Plant	Process Change: Turnaround in August 2005 & a change in the operating plan.
WY	037		150	0	Chevron USA - Table Rock Field	Natural Process Variation: No flares in 2005.
WY	041		812	385	Chevron USA - Whitney Canyon/Carter Creek Wellfield	Natural Process Variation: Emergency and planned flaring breaks.
WY	013	0008	37	59	Devon Energy Corp. - Beaver Creek Gas Plant	Natural Process Variation: EP-14 Plant Flare (F-1)
WY	023		46	20	Exxon Mobil Corporation - LaBarge Black Canyon Facility	Natural Process Variation from 4 emission points: FL 240/(A), FL 240/(B), FL2402(A) & FL2402(B).
WY	023	0013	1,237	2,300	Exxon Mobil Corporation - Shute Creek	Natural Process Variation: Emission event exceedance on 4/5/05. Increased flare volumes for the month of July, and a flaring event on 12/14/2005.
WY	037	0049	5,387	54	FMC Wyoming Corp. - Granger Soda Ash Plant	#1 Coal-fired Boiler was restarted after 3+ years of inactivity. (Facility was mothballed in 2002)
WY	001	0002	197	139	Mountain Cement Co. - Laramie Plant	Natural Process Variation: (Kiln #1 & Kiln #2 with CEMS). Reflected in the Quarterly Ambient Air Quality Reports.
WY	037	0003	955	618	P4 Production, LLC - Rock Springs Coal Calcining Plant	Natural Process Variation: Decrease in SO <sub>2</sub> emissions was due to lower tested values.

(cont.)

**Table 6**  
**Sources with an Emissions Change of > ±20% from the Previous Year (cont.)**

<b>State</b>	<b>County FIP Code</b>	<b>State Facility ID</b>	<b>Reported 2004 SO<sub>2</sub> Emissions (tons)</b>	<b>Reported 2005 SO<sub>2</sub> Emissions (tons)</b>	<b>Facility Name</b>	<b>Reason for Change</b>
WY	007	0001	2,749	1,740	Sinclair Oil Company - Sinclair Refinery	Natural Process Variation: Change in calculation methodology for the fluid catalytic cracking unit (FCCU) (Source #9).
WY	037		53	68	Solvay Minerals - Soda Ash Plant	Natural Process Variation: 67.13 tons of SO <sub>2</sub> emissions from 2 boilers, & 1.15 tons of SO <sub>2</sub> Emissions from 3 other emission points.
WY	015	0001	99	131	The Western Sugar Cooperative - Torrington	Natural Process Variation: 36% increase in the operating hours for the 4 Sterling boilers.
WY	001	0005	204	150	University of Wyoming - Heat Plant	Natural Process Variation: Plant usually burns coal year round.

## **7.2 Part 75 Data**

Federal Acid Rain Program emissions monitoring data (required by 40 CFR Part 75) were used to check reported power plant emissions, and whether or not a monitoring method adjustment was required for changes in Part 75 quality assurance procedures as described in section 3.1 of this report.

Sources in the region subject to Part 75 emitted about 70% of the region's reported emissions in 2005. EPA's Data and Maps website was queried to obtain power plant SO<sub>2</sub> emissions in the five states which were then compared to totals reported by each state for those plants. The regional haze rule requires the use of Part 75 methods for Part 75 sources, so the reported emissions should match.

EPA's database for the Acid Rain Program also was queried to obtain the flow reference method used in the RATAs reported by the plants since the 1999 baseline year. This information was used to check if there had been a change in flow reference methods since the 1999 baseline year.

## **8.0 Milestone Determination**

The average of 2003, 2004 and 2005 adjusted emissions were determined to be 324,413 tons. Therefore, the participating states have met the adjusted regional 2005 milestone of 446,903 tons.

The 2005 milestone for the five participating states was determined as provided in Section 51.309(h)(1) of the rule and the Section 309 SIPs. First, the 682,000 ton milestone in Table 1 (column 3) of the rule is adjusted for states and tribes that have not yet opted to participate in the 309 program by subtracting the amount, as provided in Section 51.309(h)(1)(i), Table 2, for each state or tribe. The milestone does not need to be adjusted to account for changes in smelter operations or enforcement actions. This results in an adjusted milestone of 446,903 tons. Table 7 shows each element of the 2005 milestone calculation.

## **9.0 Public Comments**

Arizona, New Mexico, Utah, and Wyoming each published a draft of this report for public review and comment. No comments were submitted to any of these states. Oregon did not publish a draft of the report for public notice because Oregon has elected to cease participation in the SO<sub>2</sub> Milestone and Backstop Trading Program, and to not resubmit a Section 309 SIP by the current Regional Haze Program deadline in December, 2007.

**Table 7**  
**Regional 2005 SO<sub>2</sub> Emissions Milestone for the Five States**

<b>Base Regional 2005 Milestone*</b> .....	682,000 tons
<b>Milestone Adjustments**</b>	
States and Tribes not participating in the backstop program:	
California .....	-37,343 tons
Colorado .....	-98,897 tons
Idaho .....	-18,016 tons
Nevada .....	-20,187 tons
Shoshone-Bannock Tribe of the Fort Hall Reservation .....	-4,994 tons
Navajo Nation .....	-53,147 tons
Ute Indian Tribe of the Uintah and Ouray Reservation .....	-1,129 tons
Wind River Reservation .....	-1,384 tons
Smelter Set-Aside*** .....	0 tons
Enforcement .....	0 tons
<b>Adjusted 5-State 2005 Milestone</b>	
(Arizona, New Mexico, Oregon, Utah, Wyoming) .....	446,903 tons

\* See 40 CFR 51.309(h)(1), Table 1, Column 3, and the Regional Milestones section of each state's 309 SIP (applies if neither the BHP San Manuel nor the Phelps Dodge smelter facilities resume operation).

\*\* See 40 CFR 51.309(h)(1)(i), and (ii), and (v)-(viii), and the Regional Milestones section of each state's 309 SIP.

\*\*\* The potential Smelter Set-Aside is 38,000 tons

## Appendix A

**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
AZ	017	1807		Abitibi - Snowflake Pulp Mill	2621	322121	1,516	1,516			Reduced operations & low sulfur coal used.
AZ	003	3532	160	AEPCO - Apache Generating Station	4911	221112	2,657	2,670	13		
AZ	019	2869		Arizona Portland Cement	3241	32731	6	6			Emissions back to normal.
AZ	007	2435		ASARCO - Hayden Smelter	3331	331411	12,723	12,723			Reduced operations.
AZ	021	15582		BHP - San Manuel Smelter	3331	331411	0	0			Facility has been shut down.
AZ	003	2148		CLC - Douglas Lime Plant	3274	32741	755	755			Facility in full operation.
AZ	015	5992		CLC - Nelson Lime Plant	3274	32741	1,025	1,025			
AZ	007	5129		Phelps Dodge - Miami Smelter	3331	331411	7,366	7,366			
AZ	025	2393		Phoenix Cement	3241	32731	7	7			
AZ	017	447	113	Pinnacle West - Cholla Generating Station	4911	221112	22,027	22,104	77		
AZ	001	4477	6177	SRP - Coronado Generating Station	4911	221112	10,480	10,480			Low sulfur coal used.
AZ	019		126	TEP - Irvington Generating Station	4911	221112	3,713	3,713			
AZ	001	3222	8223	TEP - Springerville Generating Station	4911	221112	9,882	9,882			Low sulfur coal used and upgraded existing controls.

(cont.)

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**Table A-1**  
**2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	007	350070001		Raton Pub. Service/Raton Power Plant	4911	221112	149	149			
NM	015	350150002		Frontier Field Services/Empire Abo Plant [Old names: BP America Production/Empire Abo Plant; Arco Permian/Empire Abo Plant]	1321	211112	295	295			Empire Abo Gas Plant is now owned and operated by Frontier Energy Services, LLC.
NM	015	350150008		Marathon Oil/Indian Basin Gas Plant	1321	211112	905	905			
NM	015	350150010		Navajo Refining Co/Artesia Refinery	2911	32411	102	102			
NM	015	350150011		Duke Energy Field Services/Artesia Gas Plant	1321	211112	528	528			
NM	015	350150024		Agave Dagger Draw Gas Plant (Old name: Agave Energy/Agave Gas Plant)	1311	211111	1,936	1,936			Agave Gas Plant and Duke Dagger Draw merged to form Agave Dagger Draw.
NM	025	350150138		Duke - Magnum/Pan Energy - Burton Flats	1321	211112	1	1			No longer a major source.
NM	015	350150285		Duke Energy/Dagger Draw Gas Plant	1321	211112	0	0			Agave Gas Plant and Duke Dagger Draw merged to form Agave Dagger Draw. See Facility ID 350150024.
NM	017	350170001		Phelps Dodge Hurley Smelter/Concentrator	3331	331411	1	1			
NM	023	350230003		Phelps Dodge Hidalgo Smelter	3331	331411	0	0			No longer a major source.

(cont.)

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**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	025	350250004		Frontier Field Services/Maljamar Gas Plant	1321	211112	2,163	2,163			
NM	025	350250007		J L Davis Gas Processing/Denton Plant	1311	211111	771	771			
NM	025	350250008		Sid Richardson Gasoline/Jal #3	1321	211112	1,401	1,401			
NM	025	350250035		Duke Energy Field Services/Linam Ranch Gas Plant [Old name: GPM GAS/LINAM RANCH GAS PLANT]	1321	211112	1,874	1,874			
NM	025	350250044		Duke Energy Field Services/Eunice Gas Plant [Old name: GPM GAS EUNICE GAS PLANT]	1321	211112	305	305			
NM	025	350250051		Targa Midstream Services/Eunice South Gas Plant (Old name: Dynegy Midstream Services/Eunice South Gas Plant)	1321	211112	1	1			Eunice South Gas Plant is now owned by Versado Gas Processors, LLC and operated by Targa Midstream Services, LP. No longer a major source.
NM	025	350250060		Targa Midstream Services/Eunice Gas Plant[Old names: Dynegy Midstream Services/Eunice Gas Plant; WARREN PETROLEUM/EUNICE GAS PLANT]	1321	211112	2,567	2,567			Eunice Gas Plant is now owned by Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.

(cont.)

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**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
NM	025	350250061		Targa Midstream Services/Monument Plant [Old names: Dynegy Midstream Services/Monument Plant; WARREN PETROLEUM/MONUMENT PLANT]	1321	211112	1,114	1,114			Monument Gas Plant is now owned by Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.
NM	025	350250063		Targa Midstream Services/Saunders Plant [Old names: Dynegy Midstream Services/Saunders Plant; WARREN PETROLEUM/SAUNDERS PLANT]	1321	211112	358	358			Saunders Gas Plant is now owned by Versado Gas Processors, LLC and operated by Targa Midstream Services, LP.
NM	031	350310008		Giant Industries/Ciniza Refinery [Old name: GIANT REFINING/CINIZA]	2911	32411	942	942			
NM	031	350310032	87	Tri-State Gen & Transmission/Escalante Station	4911	221112	1,293	1,831	538		
NM	045	350450023		Giant Industries/San Juan Refinery (Bloomfield) [old name: GIANT INDUSTRIES/BLOOMFIELD REF]	2911	32411	393	393			
NM	045	350450247		Western Gas Resources/San Juan River Gas Plant	1321	211112	392	392			
NM	045	350450902	2451	Public Service Co of New Mexico/San Juan Generating Station	4911	221112	16,587	19,171	2,584		

(cont.)

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**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
OR	005	2145		West Linn Paper Company	2621	322121	203	203			
OR	007	0004		Fort James Operating Company	2621	322121	893	893			
OR	009	1849		Boise Cascade Corporation	2611	322121	1,728	1,728			
OR	041	0005		Georgia-Pacific West, Inc.	2631	322130	259	259			
OR	043	0471	54944	Weyerhaeuser Company	2621	322130	229	231		2	
OR	043	3501		Pope & Talbot, Inc.	2611	322121	488	488			
OR	045	0002	54612	The Amalgamated Sugar Company	2063	311313	0	0			
OR	049	0016	6106	Portland General Electric Company	4911	221121	12,022	12,022			
OR	051	1876		Owens-Brockway Glass Container Inc.	3221	327213	125	125			
OR	065	0001		Northwest Aluminum Company, Inc.	3334	331312	0	0			
OR	071	6142		Smurfit Newsprint Corporation	2611	322122	602	602			
UT	049	10790		Brigham Young University - Main Campus	8221	611310	154	154			AP42 Table 3.3-1 emission factor changed (adjustment of +0.134 tons/yr). Percent of sulfur and heating value changed for some fuels (no adjustment made).
UT	027	10311		Brush Resources Inc. - Delta Mill	1099	212299	0	0			Fuel changed from #5 fuel oil to natural gas and #2 diesel (no adjustment made).

(cont.)

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**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
UT	011	10119		Chevron Products Co. - Salt Lake Refinery	2911	324110	2,201	1,780		-421	AP42 emission factor change (adjustment of +0.44). Change from AP42 emission factor to engineering data in calculating flares (Adjustment of -421.02).
UT	037	10034		EnCana Oil & Gas (USA) Incorporated (was Tom Brown Incorporated) - Lisbon Natural Gas Processing Plant	2911	211111	293	293			
UT	011	10122		Flying J Refinery - (Big West Oil Company)	2911	324110	361	361			
UT	049	10796		Geneva Steel - Steel Manufacturing Facility	3312	331221	0	0			Source has closed down.
UT	027	10313		Graymont Western US Inc. - Cricket Mountain Plant	1422	212312	8	415		407	AP42 emission factors changed (adjustment of -0.027). Method of calculating kiln emissions changed from permit limit to stack test (adjustment of +406.857).
UT	029	10007		Holcim-Devil's Slide Plant	3241	327310	229	229			
UT	011	10123		Holly Refining and Marketing Co. - Phillips Refinery	2911	324110	574	692		118	The company changed the estimation method from AP42 in 1998 to CEMS.
UT	027	10327	6481	Intermountain Power Service Corporation- Intermountain Generation Station	4911	221112	3,596	3,614	18		Wall Adjustment Factor (WAF) of 0.995 used on Flow RATA.
UT	035	10572		Kennecott Utah Copper Corp. - Power Plant/Lab/Tailings Impoundment	1021	212234	3,009	3,009			

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(cont.)

**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
UT	035	10346		Kennecott Utah Copper Corp. - Smelter & Refinery	3331	331411	777	777			
UT	007	10081	3644	PacifiCorp - Carbon Power Plant	4911	221112	5,411	6,264	853		The RATA method changed from method 2 in 1999 to method 2FH. The Flow Adjustment Factor calculated is 1.17 for unit 1 and 1.15 for unit 2.
UT	015	10237	6165	PacifiCorp - Hunter Power Plant	4911	221112	6,277	7,217	940		Two RATA methods were used in 1999, 2 and 2FH. The RATA method changed to method 2FH for the entire year. The Flow Adjustment Factor calculated is 1.09 for unit 1, 1.21 for unit 2, and 1.15 for unit 3.
UT	015	10238	8069	PacifiCorp - Huntington Power Plant	4911	221112	17,364	20,336	2,972		Two RATA methods were used in 1999, 2 and 2FH. The RATA method changed to method 2FH for the entire year. The Flow Adjustment Factor calculated is 1.11 for unit 1 and 1.18 for unit 2.
UT	007	10096		Sunnyside Cogeneration Associates - Sunnyside Cogeneration Facility	4911	221112	932	932			AP42 emission factor changed from 157S to 142S.
UT	035	10335		Tesoro West Coast-Salt Lake City Refinery	2911	324110	880	846		-34	The actual emissions included SO <sub>3</sub> in 2005. SO <sub>3</sub> was not included in the 1998 emissions.
UT	043	10676		Utelite Corporation - Shale processing	3295		167	167			
WY	011	0002		American Colloid Mineral Co - East Colony	1459	212325	211	211			

(cont.)

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**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/Comments
WY	011	0003		American Colloid Mineral Co - West Colony	1459	212325	180	180			
WY	037	0008		Anadarko E&P Co LP - Brady Gas Plant	1321	211112	84	149		65	Calculation Methods (emission test, permitted allowable, & mass balance).
WY	037			Anadarko E&P Co LP - Table Rock Gas Plant	1321		250	250			Calculation Methods (CEMS & mass balance).
WY	023	0001		Astaris Production - Coking Plant	2999	324199	0	0			Plant is permanently shut down.
WY	031	0001	6204	Basin Electric - Laramie River Station	4911	221112	13,098	13,098			Calculation Method (CEMS Part 75).
WY	003	0012		Big Horn Gas Proc - Big Horn/Byron Gas Plant	1311	22121	0	0			Switched to sweet gas in Feb. 2001, and continues to process only treated gas.
WY	005	0002	4150	Black Hills Corporation - Neil Simpson I	4911	22112	945	1,013		68	Calculation Method (chemical mass balance).
WY	005	0063	7504	Black Hills Corporation - Neil Simpson II	4911	22112	498	498			Calculation Method (2005 CEMS EDR 4th Qtr. Report).
WY	045	0005	4151	Black Hills Corporation - Osage Plant	4911	22112	3,094	3,094			Calculation Method (1998 Base Year & 1988 stack test).
WY	005	0146	55479	Black Hills Corporation - Wygen 1	4911	22112	538	538			Calculation Method (2005 CEMS EDR 4th Qtr. Report).
WY	041			BP America Production Company - Whitney Canyon WellField	1311		2	2			
WY	041	0012		BP America Production Company - Whitney Canyon Gas Plant & Field	1311	211111	3,590	3,590			Calculation Methods (CEMS data, metered flow & emissions testing).

(cont.)

**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	013			Burlington Resources - Bighorn Wells	1311		0	0			No flaring at wellsite in 2005.
WY	013	0028		Burlington Resources - Lost Cabin Gas Plant	1311	211111	1,232	1,232			Emission volumes based upon data submitted in LCGP, quarterly reports, same as base year.
WY	041	0009		Chevron USA - Carter Creek Gas Plant	1311	211111	1,122	1,122			Turnaround in August 2005 & a change in the Operating Plan.
WY	037			Chevron USA - Table Rock Field	1311		0	0			No flares in 2005.
WY	041			Chevron USA - Whitney Canyon/Carter Creek Wellfield	1311		385	385			SO <sub>2</sub> Calculation in Chapter 6, Section 2, page B14.
WY	013			Devon Energy Production Co., L.P. - Beaver Creek Gas Field			47	47			Tons H <sub>2</sub> S (flared) * 1.8797 = SO <sub>2</sub> emitted.
WY	013	0008		Devon Gas Services, L.P. - Beaver Creek Gas Plant	1311	211111	59	59			Tons H <sub>2</sub> S (flared) * 1.8797 = SO <sub>2</sub> emitted.
WY	023			Exxon Mobil Corporation - LaBarge Black Canyon Facility	1311		20	20			Calculation Method: AP-42 and actual volumes.
WY	023	0013		Exxon Mobil Corporation - Shute Creek	1311	211111	2,300	2,300			Turbines in operation since 2004; therefore, no change in methodology. (CEMS & AP-42).
WY	037	0048		FMC Corp - Green River Sodium Products (Westvaco facility)	2812	327999	5,005	5,005			SO <sub>2</sub> emissions from "2" emission points: (NS-1A & NS -1B). CEMS lb/mmBtu * Annual heat input.
WY	037	0049		FMC Wyoming Corporation - Granger Soda Ash Plant	1474	212391	54	54			Partial year operation of the #1 Coal-fired Boiler, as the facility was restarted after 3+ years. (CEMS).

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Appendix A  
March 29, 2007

(cont.)



**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	021	0001		Frontier Oil & Refining Company - Cheyenne Refinery	2911	32411	1,438	1,460		22	Source 43 Coker Flare used Stack Test & Coke Cycle Time for Hours in 1998.
WY	037	0002		General Chemical - Green River Plant (Facility Name:General Chemical)	1474	327999	5,216	5,216			SO <sub>2</sub> emissions from "2" emission points: (C Boiler & D Boiler). Fuel use, fuel heat value, CEMS.
WY	043	0003		Hiland Partners, LLC - Hiland Gas Plant	1321	48621	109	109			SO <sub>2</sub> emissions from Acid Gas; Process & Safety Flares. Gas flow measurement, H <sub>2</sub> S concentration & engineering calculations.
WY	029	0012		Howell Petroleum Corp - Elk Basin Gas Plant	1311	211111	1,313	1,313			SO <sub>2</sub> emissions from "2" emission points: (SRU & F-1). CEMS and mass balance.
WY	029	0007		Marathon Oil Co - Oregon Basin Gas Plant	1321	211112	328	328			Oregon Basin went to a mass CEMS in 2002, but used a mass balance calculation in the base year. However they no longer keep adequate records of inlet gas concentration to utilize the mass balance method. SO <sub>2</sub> emissions from "3" emission points: (Gas Incinerator, Sour Gas & Field Flares).
WY	001	0002		Mountain Cement Company - Laramie Plant	3241	23571	139	139			SO <sub>2</sub> emissions from "2" emission points: (Kiln #1 & Kiln #2). CEMS.
WY	037	0003		P4 Production, L.L.C. - Rock Springs Coal Calcining Plant	3312	331111	618	618			New stack test results used for emission calculation do not represent a change in methodology.

(cont.)

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**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	009	0001	4158	Pacificorp - Dave Johnston Plant	4911	221112	19,751	23,860	4,109		SO <sub>2</sub> emissions from "4" emission points: (BW41, BW42, BW43 & BW44 & Flow Adjustment Factors: 1.11, 1.23, 1.19 & 1.28).
WY	037	1002	8066	Pacificorp - Jim Bridger Plant	4911	221112	21,651	23,224	1,573		SO <sub>2</sub> emissions from "4" emission points: (BW71, BW72, BW73 & BW74 & Flow Adjustment Factors: 1.04, 1.13, 1.03 & 1.13).
WY	023	0004	4162	Pacificorp - Naughton Plant	4911	221112	23,229	26,707	3,478		SO <sub>2</sub> Emissions from "3" emission points: (1, 2, & 3 & Flow Adjustment Factors: 1.05, 1.14, & 1.29).
WY	005	0046	6101	Pacificorp - Wyodak Plant	4911	221112	7,732	8,196	464		SO <sub>2</sub> Emissions from "1" emission point: (BW91 & a Flow Adjustment Factor of 1.06).
WY	037	0022		Simplot Phosphates LLC - Rock Springs Plant	2874	325312	2,003	2,003			Source Test x Op Hours, AP-42 estimates, & AP-42 x Op Hours.
WY	025	0005		Sinclair Wyoming Refining Company - Casper Refinery	2911	32411	742	742			SO <sub>2</sub> emissions from "23" emission points. Calculation Method is the same as the Base Year.
WY	007	0001		Sinclair Oil Company - Sinclair Refinery	2911	32411	1,740	2,379		639	FCC Unit used stack test x hours in 1998; went to a CEMS in 2004.
WY	037			Solvay Chemicals - Soda Ash Plant (Green River Facility)	1474		68	100		32	SO <sub>2</sub> Emissions from "5" emission points: (AQD #18, #19, #33, #73 & #89). Calculation Methods: (lb/MMBtu x MMBtu & pph stack test x hr/yr). The base year for AQD #18 & #19 were calculated with pph stack test x hr/yr.

(cont.)

**Table A-1  
2005 Reported and Adjusted Emissions for Sources Subject to Section 309 - Regional Haze Rule (cont.)**

State Abbreviation	County FIPS	State Facility Identifier	ORIS	Plant Name	Plant SIC	Plant NAICS	Reported 2005 SO <sub>2</sub> Emissions (tons)	Adjusted 2005 SO <sub>2</sub> Emissions (tons)	Part 75 Flow RATA Emission Adjustment (tons)	General New Monitoring Calculation Method Adjustment (tons)	Description/ Comments
WY	015	0001		The Western Sugar Cooperative - Torrington Plant	2063	311313	131	131			Coal fired Sterling Boilers #3, #4, #5, & #6. (36% increase in operating hours).
WY	001	0005		University of Wyoming - Heat Plant	8221	61131	150	150			SO <sub>2</sub> emissions from "5" emission points: (#1 thru #4 Boilers & a diesel generator). Process change - plant usually burns coal year round.
WY	045	0001		Wyoming Refining - Newcastle Refinery	2911	32411	762	762			
NM	001	00008		GCC Rio Grande Cement	3241	327310	16	1,103		1,087	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between potential and reported emissions.
NM	001	00145		Southside Water Reclamation Plant	4952	22132	44	120		76	Facility potential to emit was used for the baseline year calculation. Adjustment is equal to the difference between potential and reported emissions.

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**Appendix B**

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

<b>State</b>	<b>County FIP Code</b>	<b>State Facility ID</b>	<b>Facility Name</b>	<b>Report Year of Change</b>
OR	005	2145	West Linn Paper Company	2003
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		Anadarko E&P Company LP - Table Rock Gas Plant	2003
WY	005	0146	Black Hills Corporation - Wygen 1	2003
WY	041		BP America Production Company - Whitney Canyon Well Field	2003
WY	013		Burlington Resources - Bighorn Wells	2003
WY	037		Chevron USA - Table Rock Field	2003
WY	041		Chevron USA - Whitney Canyon/Carter Creek Wellfield	2003
WY	013	0008	Devon Energy Corp. - Beaver Creek Gas Plant	2003
WY	035		Exxon Mobil Corporation - Labarge Black Canyon Facility (also identified as Black Canyon Dehy Facility)	2003
AZ	019	2869	Arizona Portland Cement	2004
WY	013		Devon Energy Corp. - Beaver Creek Gas Field	2004

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

<b>State</b>	<b>County FIP Code</b>	<b>State Facility ID</b>	<b>Facility Name</b>	<b>Baseline Emissions (tons/year)</b>	<b>Reason for Change</b>	<b>Report Year of Change</b>
OR	019	0007	Glenbrook Nickel Co	113	Closed since 2000	2003
OR	019	0036	International Paper	1,006	Program did not meet 100 TPY program criteria	2003
OR	051	1851	Reynolds Metals Co	503	Closed since 2001	2003
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
AZ	021	15582	BHP - San Manuel Smelter	10,409	Facility is permanently closed.	2004
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