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# STATE OF COLORADO

John W. Hickenlooper, Governor  
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Executive Director and Chief Medical Officer



Colorado Department  
of Public Health  
and Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

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May 11, 2011

James B. Martin  
Regional Administrator  
USEPA Region VIII  
1595 Wynkoop Street  
Denver, CO 80202-1129

RECEIVED  
U.S. EPA Region 8  
RA's Office  
MAY 16 2011

RE: 2010 Colorado Designations for 1-hour Sulfur Dioxide NAAQS

Dear Mr. Martin:

Pursuant to the provisions of section 107(d)(1) of the Clean Air Act, the state of Colorado submits to the Environmental Protection Agency the attached area designations for the 1-Hour Sulfur Dioxide National Ambient Air Quality Standard (NAAQS), as revised on June 2, 2010. Federal law requires that the state of Colorado submit the recommended designations for the 1-Hour Sulfur Dioxide NAAQS to the EPA by June 2, 2011, and this letter provides the designations of "attainment" and "attainment/unclassifiable" as applicable for all air quality control regions (AQCRs) in Colorado. These recommended designations and underlying technical support were originally sent to you on March 18, 2011. Because they were sent prior to Governor Hickenlooper's April 11, 2011 letter to you designating me as the official Colorado representative for submitting documents to EPA on behalf of the State, we are resubmitting the recommended designations and technical support documentation.

The enclosed technical support document provides a table and map which describes each AQCR and its designation and provides supporting analysis. The technical support document makes a strong case that these designation recommendations are accurate and supportable for EPA approval. The attainment designations for the Denver Metropolitan Area (AQCR 3) are based on actual air quality monitoring data for the 2008-2010 time periods. The attainment/unclassifiable designations for areas lacking representative monitoring are based on the State's estimation that 1-Hour Sulfur Dioxide levels in these AQCRs are not out of compliance with the 1-Hour Sulfur Dioxide NAAQS.

The enclosed area classifications for the 2010 1-Hour Sulfur Dioxide NAAQS were adopted by the Colorado Air Quality Control Commission following a public hearing held on March 17, 2011. If you have any questions regarding this submittal, please contact Garry Kaufman, Interim Administrator for the Air Quality Control Commission, at (303) 692-3478 or Paul Tourangeau, Director of the Air Pollution Control Division, at (303) 692-3114.

Sincerely,



Christopher E. Urbina, MD, MPH  
Executive Director and Chief Medical Officer  
Colorado Department of Public Health and Environment

Enclosure

- State of Colorado, Technical Support Document for 1-Hour Sulfur Dioxide Standard Attainment in Colorado

# State of Colorado

## Technical Support Document for 1-Hour Sulfur Dioxide Standard Attainment in Colorado



February 18, 2011

**Colorado Department of Public Health and Environment**  
Air Pollution Control Division  
4300 Cherry Creek Drive South  
Denver, Colorado 80246

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# Colorado Analysis for 1-Hour Sulfur Dioxide Attainment

## Designation Recommendation

The State recommends that the entire state of Colorado be designated as attainment or attainment/unclassifiable for the 2010 revised 1-hour sulfur dioxide standard. This recommendation is based on monitoring information that indicates the region is in compliance with the revised 1-hour sulfur dioxide standard.

## Overview

On June 2, 2010, the U.S. Environmental Protection Agency (EPA) promulgated a new National Ambient Air Quality Standard (NAAQS) for nitrogen dioxide as a 1-hour average. The level was set at 75 ppb as the 3-year average of the 99<sup>th</sup> percentile 1-hour daily maximum values. States are required to submit area designation recommendations to EPA by June 2, 2011.

The Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE) currently operates two sulfur dioxide analyzers in Colorado, both in the Denver metropolitan area. All sulfur dioxide monitoring for the 2008-2010 period shows the 3-year averages of the 99<sup>th</sup> percentile 1-hour daily maximum values to be below the level of the NAAQS. There are no other known monitoring sites for sulfur dioxide in Colorado that are currently in operation and meet EPA quality assurance criteria. Thus, the APCD is proposing that Colorado be designated as attainment or attainment/unclassifiable for the entire state (excluding tribal lands over which the APCD has no jurisdiction).

The EPA requires states base their designation recommendations on monitoring data results from the most current complete three year period. The following analysis discusses air quality data as necessary to demonstrate that Colorado should be designated as attainment or attainment/unclassifiable for the new 1-hour sulfur dioxide NAAQS. It must also be noted that this attainment demonstration applies only to non-tribal lands over which the State of Colorado has direct air quality jurisdiction.

## Air Quality Data

The air quality analysis looked at all known monitoring sites for the 1-hour sulfur dioxide standard in Colorado for 2008 through 2010. A map of the two APCD site locations currently in operation in Colorado (CAMP and Welby) is presented in Figure 1. Other historic sites were also examined.

Figure 2 presents long term trends for the APCD's CAMP and Welby sites as the 3-year average of the 99<sup>th</sup> percentile daily maximum values, as well as data for a historic APCD site (South Adams). It is evident that ambient 1-hour sulfur dioxide levels have decreased dramatically over

time and are now well below the level of the new 1-hour NAAQS. Much of this decrease is likely due to emissions reductions in major stationary sources and reduced sulfur levels in diesel fuels.

Figure 3 presents trends from some historic sites that were operated by Colorado Springs Utilities. While these sites ended operation in 2001, they do provide information that attainment of the new 1-hour NAAQS is likely in other areas of Colorado.

Table 1 presents a summary of the 99<sup>th</sup> percentile data for all these sites, as well as the 3-year average calculations. The table also indicates years that are not complete for true data assessments, but have been used in this analysis.

**Figure 1. Map of 1-Hour Sulfur Dioxide Ambient Air Monitoring Sites 2008-2010**

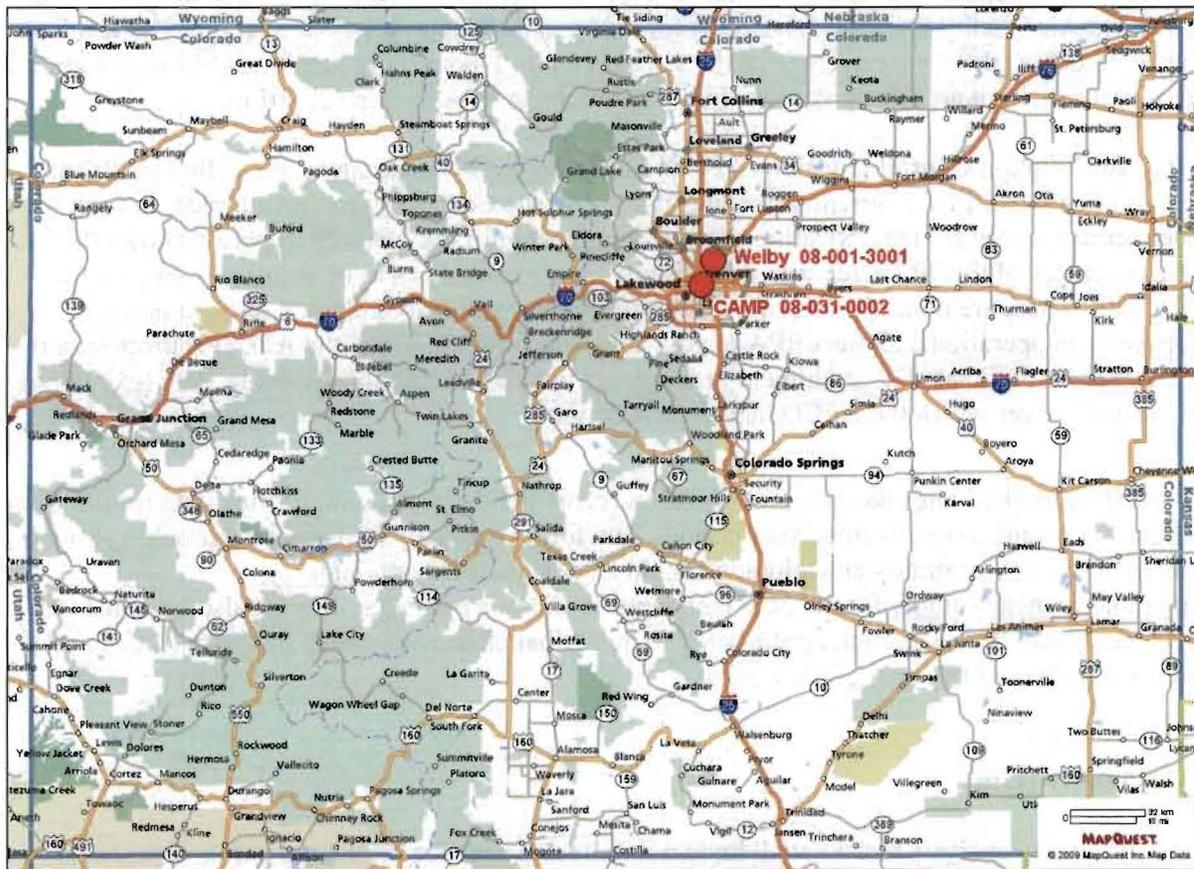


Figure 2. Colorado 1-Hour Sulfur Dioxide Ambient Air Concentration Trends (CDPHE)

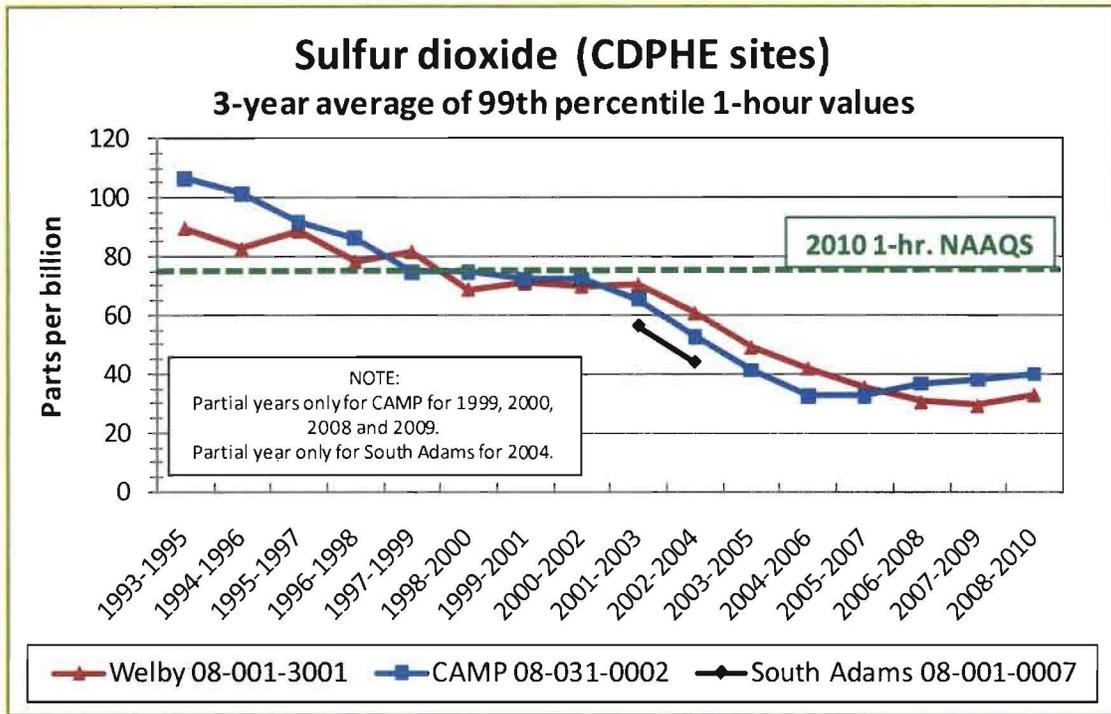
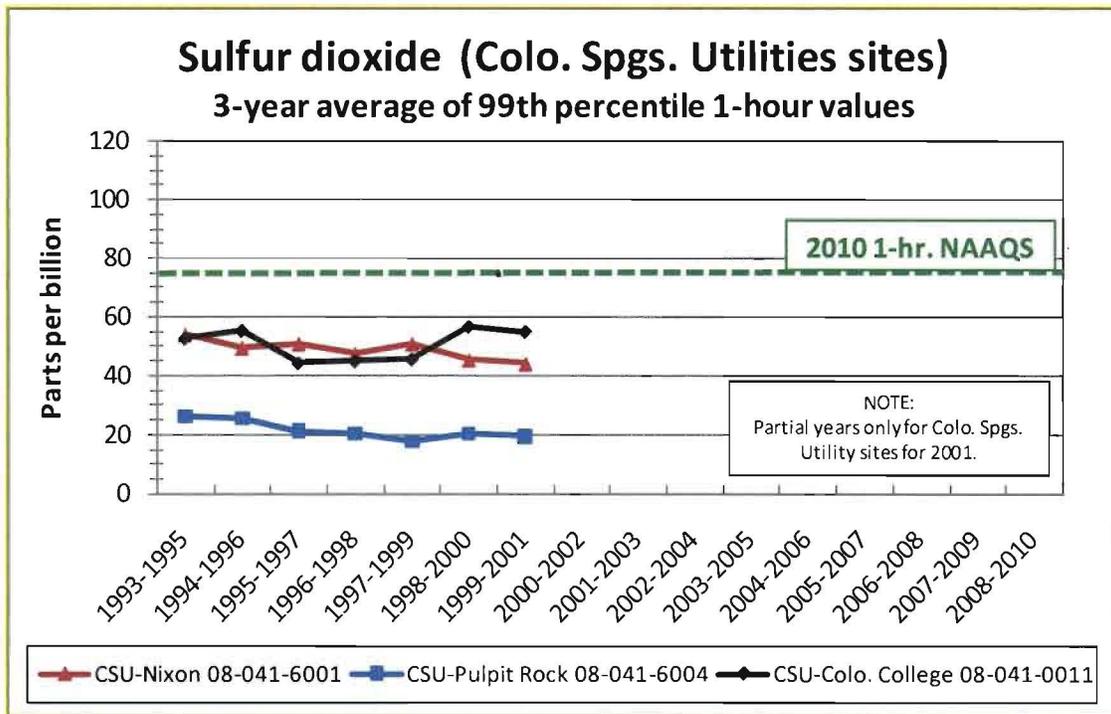


Figure 3. Colorado 1-Hour Sulfur Dioxide Ambient Air Concentration Trends (Other)



**Table 1. Colorado 1-Hour Sulfur Dioxide Monitoring Data Summary (CDPHE)**

Year	CDPHE-APCD sites						
	<u>Welby</u>		<u>CAMP</u>		<u>South Adams</u>		
	AQS# 08-001-3001	AQS# 08-031-0002	AQS# 08-001-0007	99%ile 1-hr. (ppb)	3-yr. Avg. (ppb)	99%ile 1-hr. (ppb)	3-yr. Avg. (ppb)
1993	92		117				
1994	76		107				
1995	100	89	95	106			
1996	71	82	101	101			
1997	94	88	78	91			
1998	69	78	79	86			
1999	81	81	67 *	75			
2000	56	69	78 *	75			
2001	75	71	71	72	69		
2002	78	70	68	72	64		
2003	58	70	57	65	36	56	
2004	46	61	33	53	32 *	44	
2005	43	49	34	41			
2006	37	42	31	33			
2007	27	36	33	33			
2008	28	31	46 *	37			
2009	33	29	35 *	38			
2010	38	33	39	40			

**New Standard: 3-yr. Avg. of 1-hr. 99th percentile = 75 ppb**

**NOTE:** \* 1999, 2000, 2008, 2009 are incomplete years for CAMP  
\* 2004 is an incomplete year for South Adams

**Table 2. Colorado 1-Hour Sulfur Dioxide Monitoring Data Summary (Other)**

Year	Colorado Springs Utilities sites					
	<u>CSU-Nixon</u> AQS# 08-041-6001		<u>CSU-Pulpit Rock</u> AQS# 08-041-6004		<u>CSU-Colo. College</u> AQS# 08-041-6011	
	99%ile 1-hr. (ppb)	3-yr. Avg. (ppb)	99%ile 1-hr. (ppb)	3-yr. Avg. (ppb)	99%ile 1-hr. (ppb)	3-yr. Avg. (ppb)
1993	58		27		46	
1994	51		28		60	
1995	53	54	24	26	52	53
1996	45	50	25	26	54	55
1997	55	51	15	21	27	44
1998	43	48	22	21	54	45
1999	55	51	17	18	56	46
2000	39	46	23	21	60	57
2001	39 * (shut down)	44	19 * (shut down)	20	49 * (shut down)	55
<b>New Standard: 3-yr. Avg. of 1-hr. 99th percentile = 75 ppb</b>						
<b>NOTE:</b> * 2001 is an incomplete year for CSU-Nixon, CSU-Pulpit Rock, CSU-Colo. College						

### Summary Conclusions

The data and analysis presented provide documentation and compelling evidence supporting a finding that Colorado should be designated as attainment or attainment/unclassifiable for the 2010 1-hour sulfur dioxide NAAQS. It is important to note that only areas over which Colorado has direct air quality jurisdiction are included in this attainment/unclassifiable finding and recommendation. The Southern Ute Indian Tribe, and the Southern Ute Indian Tribe/State of Colorado Environmental Commission, as well as the Ute Mountain Ute Indian Tribe, are distinct nations or entities and consequently such Tribal lands are specifically excluded from this designation recommendation.

Table 3 provides a complete listing of the recommended designations, by area. Figure 4 provides a map of the Air Quality Control Regions for the 1-hour sulfur dioxide designations in Colorado. These recommendations are based on current monitoring information that indicates compliance with the revised standard.

**Table 3. Recommended 1-Hour Sulfur Dioxide Designations by Area for Colorado**

2010 Colorado Designations for the 1-Hour Sulfur Dioxide NAAQS (based on 2007–2009 monitoring data )	
Air Quality Control Regions (AQCR)	Sulfur Dioxide NAAQS Designation
State AQCR 01 Logan County Morgan County Phillips County Sedgwick County Washington County Yuma County	Attainment/Unclassifiable
State AQCR 02 Larimer County Weld County	Attainment/Unclassifiable
State AQCR 03 Adams County Arapahoe County Boulder County (including the portion of Rocky Mountain National Park therein) Broomfield County Clear Creek County Denver County Douglas County Jefferson County Gilpin County	Attainment
State AQCR 04 El Paso County Park County Teller County	Attainment/Unclassifiable
State AQCR 05 Cheyenne County Elbert County Kit Carson County Lincoln County	Attainment/Unclassifiable
State AQCR 06 Baca County Bent County Crowley County Kiowa County Otero County Prowers County	Attainment/Unclassifiable
State AQCR 07 Huerfano County Las Animas County Pueblo County	Attainment/Unclassifiable

2010 Colorado Designations for the 1-Hour Sulfur Dioxide NAAQS (based on 2007–2009 monitoring data )	
Air Quality Control Regions (AQCR)	Sulfur Dioxide NAAQS Designation
State AQCR 08 Alamosa County Conejos County Costilla County Mineral County Rio Grande County Saguache County	Attainment/Unclassifiable
State AQCR 09 Archuleta County (part) excluding Southern Ute Indian Tribe (SUIT) lands Dolores County La Plata County (part) excluding SUIT and Ute Mountain Ute Tribe lands Montezuma County (part) excluding SUIT and Ute Mountain Ute Tribe lands San Juan County	Attainment/Unclassifiable
State AQCR 10 Delta County Gunnison County Hinsdale County Montrose County Ouray County San Miguel County	Attainment/Unclassifiable
State AQCR 11 Garfield County Mesa County Moffat County Rio Blanco County	Attainment/Unclassifiable
State AQCR 12 Eagle County Grand County Jackson County Pitkin County Routt County Summit County	Attainment/Unclassifiable
State AQCR 13 Chaffee County Custer County Fremont County Lake County	Attainment/Unclassifiable

**Figure 4. Map of Air Quality Control Regions for 1-Hour Sulfur Dioxide Designations in Colorado**

