TESTIMONY OF KURT E. BLASE
SUBCOMMITTEE ON ENERGY AND POWER
HEARING ON" FARM DUST"
October 25, 2011

Summary of Major Points

1. Dust emissions currently are subject to stringent regulation pursuant to the current national ambient air quality standard for PM10.

2. Dusts composed primarily of crustal material have been reported to be harmful only at ambient levels much higher than the current PM10 standard of 150 micrograms per cubic meter over a twenty-four hour period.

3. The current PM10 standard limits production, and therefore employment, in dust-producing industries by imposing stringent dust emission limits in permits and state plans.

4. Recent research has made it increasingly clear that coarse PM emissions are subject to great local variability and are not amenable to a national regulation where "one size fits all."

5. EPA's PM Policy Assessment recommends consideration of a potential new PM10 standard set at approximately half the level of the current standard, with a change to the 98% statistical form. The Policy Assessment concludes that such a standard would be roughly equivalent to the current standard. However, a detailed study sponsored by our Coalition concludes that such a standard would be much more stringent than the current standard, particularly in the West, Southwest and Midwest.

6. Our Coalition is encouraged by Administrator Jackson's recent letter to Senator Klobuchar indicating that EPA will propose to retain the current PM10 standard. However, for the reasons discussed above, we believe that state and local regulation would be a much more efficient and effective means of protecting public health against fugitive crustal dust emissions that have a very localized impact. Accordingly, we strongly support H.R. 1633 and urge the Subcommittee to adopt it.

TESTIMONY
OF
KURT E. BLASE
ON BEHALF OF THE
COARSE PARTICULATE MATTER COALITION

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER
HOUSE COMMITTEE ON ENERGY AND COMMERCE
HEARING ON
"FARM DUST"

October 25, 2011

Good morning Chairman Whitfield, Ranking Member Rush and Members of the Subcommittee. Thank you for inviting me to testify this morning. My testimony is offered on behalf of the Coarse Particulate Matter Coalition, an organization of industry groups with an interest in scientifically valid regulation of coarse particulate matter (PM) ambient air concentrations. The current members of the Coalition are listed in my written statement.[1]

Coarse PM, as we use the term, means particles that fall within the size fraction of 2.5-10 micrometers as measured by EPA reference test methods. These particles currently are regulated under the National Ambient Air Quality Standard (NAAQS) for PM10, which also includes PM2.5 particles in the fraction 0- 2.5

[1] Current members include the National Stone Sand & Gravel Association, National Oilseed Processors Association, National Cotton Council, Corn Refiners Association, Kennecott Utah Copper, LLC and the Rubber Manufacturers Association.

micrometers as measured by EPA reference test methods. For over 15 years now, our Coalition has supported reasonable regulation of coarse PM emissions where necessary to protect public health and welfare.

In the past two reviews of the PM10 NAAQS, EPA and the Clean Air Scientific Advisory Committee (CASAC) have focused increasingly on urban road dusts as a potential public health threat. The theory has been that dusts by urban roadsides can become contaminated by other materials that render them more toxic. In contrast, dusts composed primarily of crustal material have been reported to be harmful only at ambient levels much higher than the current PM10 NAAQS of 150 micrograms per cubic meter over a 24- hour period.

Our Coalition consistently has supported retention of the current federal NAAQS, while exploring avenues for relief for fugitive crustal dusts emitted by extremely difficult-to-control sources such as natural dust emissions from unvegetated land, dirt roads, farms, and material storage and handling operations. The current PM10 NAAQS limits production, and therefore employment, in dust-producing industries by imposing stringent dust emission limits in permits and state plans. After available controls are employed, if the NAAQS is not attained the only way to reduce emissions is to cut production. The current NAAQS limits production at most, if not all of the facilities operated by our members. We have, therefore, been quite surprised at recent contentions that the regulation of dust is

inconsequential in terms of its impacts on PM sources. It is anything but that, as all of our members would attest. In fact, the existing PM10 NAAQS is quite stringent.

In recent years, we have grown increasingly frustrated with the failure of the federal process to reflect the differences in coarse PM toxicity that are clearly demonstrated in the scientific record. In addition, recent research has made it increasingly clear that coarse PM emissions are subject to great local variability and are not amenable to a national regulation where "one size fits all." For these reasons, we strongly support the provisions of H.R. 1633, which would cease federal regulation of crustal dusts in areas where state and local regulators are doing the job.

Both EPA staff and CASAC have recognized that coarse PM concentrations vary widely on a local and regional basis.[2] A recent study commissioned by our Coalition and performed by Dr. John Richards of Air Control Techniques, P.C., sheds further light on this issue.[3] A copy of Dr. Richards' report is attached to my testimony. The report presents the following conclusions:

1. The coarse fraction of PM10 travels only short distances and has primarily a local impact.

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[2] See, e.g., OAQPS, *Policy Assessment for the Review of the PM NAAQS* (April 2011) at pp. 3-14-17 (citing EPA Integrated Science Assessment for PM); Letter from Dr. Jonathan Samet, CASAC Chair, to EPA Administrator Jackson re: CASAC Review of Policy Assessment for the Review of the PM NAAQS – Second External Review Draft (September 10, 2010), p. 8.

[3] Air Control Techniques, *Evaluation of Potential Changes to the Coarse Particulate Matter Ambient Air Quality Standard* (June 2011).

2. Permits require sources of dust emissions to maintain compliance with the federal NAAQS in all areas at and beyond their property line. Due to the localized impact of the coarse fraction of PM10, the NAAQS is more stringent when applied close to the source than when applied to widely-spaced county monitors used for attainment demonstration.

3. PM10 in the West, Southwest, and Midwest is composed primarily of coarse particulate matter, while PM10 in the eastern U.S. is composed primarily of fine particulate matter (PM2.5).

4. The West, Southwest, and Midwest have areas with low rainfall and frequent high winds. Fugitive dust emissions in these areas cause frequent PM10 spikes in 24-hour concentrations -- often more than the 8 spikes in a year that would show exceedance of the federal NAAQS even at widely spaced county monitors. These do not occur with such frequency in other areas of the country.

Our study includes a comparison of the monitor-to-monitor differences in PM10 concentrations within specific counties. This comparison clearly demonstrates the localized impact and short transport distances of the coarse fraction of PM10 in the West, Southwest, and Midwest. In these regions, the variations among PM10 concentrations within single counties averaged a very high value of 48.4 micrograms per cubic meter (μg/m3). By contrast, the within-county differences in the East averaged only 11.2 μg/m3.

Our study also finds that the short transport distances of the coarse fraction of PM10 are confirmed by conventional dispersion modeling of fugitive dust sources and point sources. Significant differences in PM10 concentrations are calculated for receptors located at distances of less than one-half mile from a

source. Given the highly localized nature of dust emissions and impacts, we believe that state and local , rather than federal regulators, are in the best position to determine the regulatory measures needed to protect the public health and welfare.

The localized nature of dust impacts also leads to great disparity in the effects of a single federal NAAQSon different areas of the country. Our study focuses on the impacts of a potential new standard recommended for consideration in the PM Policy Assessment cited above. The potential new standard would be set somewhere within the range of 65-85 μg/m3, with a change to the 98% statistical form. The Policy Assessment concludes that a standard of 85 μg/m3 with the change in form would be roughly equivalent to the current standard. However, our study concludes that the new standard would be much more stringent than the current standard, particularly in the West, Southwest and Midwest.

Attached to my testimony is a map of the United States, taken from Dr. Richards' report, indicating that under the potential new standard, localized areas in all of the highlighted areas would be especially vulnerable to exceedances of the potentially revised PM10 NAAQS. In the especially vulnerable areas of the West, Southwest and Midwest, farmers, owners of dirt roads, and operators of material storage and handling equipment will have few, if any, reasonable options to reduce emissions. Employment in businesses generating fugitive crustal dust will be

impacted. This impact would occur despite the conclusion in the Policy Assessment that the current NAAQS can reasonably be judged to provide sufficient public health protection.

Given the choice between the current and potential new federal standards, we have consistently supported retention of the current standard. In that respect, we are encouraged by the Administrator's recent letter to Senator Klobuchar indicating that EPA will propose to retain the current standard.[4] However, for the reasons I have discussed, we believe that state and local regulation is a much more efficient and effective means of protecting public health against fugitive crustal dust emissions that have a very localized impact. Accordingly, we strongly support H.R. 1633 and urge the Subcommittee to adopt it. I would be glad to answer any questions you may have.

[4] Letter from Administrator Jackson to Sen. Klobuchar (October 14, 2011).

EVALUATION OF POTENTIAL CHANGES TO THE COARSE PARTICULATE MATTER NATIONAL AMBIENT AIR QUALITY STANDARD

Report Prepared for:

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EVALUATION OF POTENTIAL CHANGES TO THE COARSE PARTICULATE MATTER NATIONAL AMBIENT AIR QUALITY STANDARD

1. PURPOSE AND SCOPE

EPA is presently considering a change in both the format and stringency of the Coarse Particulate Matter (coarse PM) NAAQS. EPA has discussed a possible change in the format of the coarse PM NAAQS from a PM_{10}[1] 24-hour average of 150 microgram per cubic meter ($\mu g/m^3$) with a one exceedance per year format to a PM_{10} concentration of 85 $\mu g/m^3$ with a 98th percentile format (the potentially revised standard). EPA has suggested that these two standards are generally equivalent and that converting the standard to a 98th percentile format is desirable because it would then be consistent with the format used for other air pollutant NAAQS, including the $PM_{2.5}$ NAAQS.

EPA has approached the possible revisions to the Coarse PM NAAQS from an air quality management and planning perspective. It has evaluated the stringency of the existing and potentially revised NAAQS based only on the limited data provided by the PM_{10} ambient air monitoring network. Only 12% of the counties in the U.S. have a PM_{10} monitor and the majority of these monitors are located in urban areas. EPA has not evaluated the stringency of the existing and potentially revised Coarse PM NAAQS in localized areas around fugitive dust sources such as farms, unpaved roads, and other rural-based operations.

State and local agencies require that all agricultural, and other fugitive dust sources minimize emissions to the extent necessary to avoid exceedances of the Coarse PM NAAQS at any localized point on the source property line or beyond the property line. This can result in production and emission limits being imposed on facilities as needed to demonstrate compliance with the Coarse PM NAAQS whether determined by site-specific ambient monitors or calculated by EPA-approved dispersion models. Once set, these Coarse PM NAAQS-based limits for specific sources must be met regardless of the cost or availability of technically feasible controls. The stringency of the Coarse PM NAAQS in the immediate vicinity of agricultural, and other fugitive dust sources is much greater than is indicated by analyses based only on widely spaced agency-operated PM_{10} monitors.

The localized stringency of the NAAQS is significant for coarse PM, which travels only short distances from the emission point. The coarse particles settle quickly by gravity and impact on the ground and vegetation surfaces. The rapid deposition of coarse PM is especially important for ground-level emissions of fugitive dust from unpaved roads, farms, and unvegetated soil.

[1] EPA uses PM_{10} as a surrogate for coarse particulate matter. PM_{10} includes coarse particulate matter in the size range of 2.5 to 10 micrometers and fine particulate matter ($PM_{2.5}$) in the size range equal to or below 2.5 micrometers (aerodynamic).

Most fugitive dust emissions do not reach an EPA, state, or local agency-operated PM_{10} monitor. Due to its rapid removal from the atmosphere in areas close to its emission source, coarse PM is fundamentally different from all other criteria air pollutants regulated under Title I of the Clean Air Act. Other criteria pollutants such as $PM_{2.5}$, ozone, carbon monoxide, nitrogen oxides, and sulfur dioxide persist longer in the atmosphere and disperse over wider areas. As such, EPA, state, and local agency ambient air quality monitors for these other criteria air pollutants better characterize the ambient air levels of these pollutants. In contrast, coarse PM monitors are not reflective of coarse PM ambient air levels because of the tendency for coarse particles to settle rapidly near their source. The Coarse PM NAAQS evaluation process should take this difference into account.

There are significant regional differences in the levels of coarse PM and in the sources of coarse PM. Fugitive dust emissions from unpaved roads, agricultural operations, and unvegetated soil are especially important in arid and/or windy areas of the West, Southwest, and Midwest. These fugitive dust sources are located primarily in rural areas. EPA, state, and local agency PM_{10} monitors located primarily in urban areas do not adequately characterize localized levels of PM_{10} in rural areas.

The Coarse Particulate Matter Coalition ("Coalition") and other stakeholders have expressed concerns regarding the severe consequences of the potential change in the Coarse PM NAAQS. The Coalition has retained Air Control Techniques, P.C. to conduct a review of the national PM_{10} concentration data over the 2007 to 2009 period—the most recent data available to assess the impact of the potentially revised NAAQS on agricultural, and other fugitive dust sources operating in the West, Southwest, and Midwest.

Section 2 presents the conclusions based on this air quality data evaluation. Section 3 summarizes the scope of this evaluation and the procedures used to determine PM_{10} concentration levels. Section 4 addresses the issue of localized PM_{10} impact and the importance of considering this factor when evaluating the stringency of the Coarse PM NAAQS. Section 5 concerns the impact of the potentially revised Coarse PM NAAQS on the compliance status of counties with PM_{10} monitors. All of the PM_{10} data discussed in this report are summarized in a set of tables presented in Appendices B through H.

2. CONCLUSIONS

In its determination that the potentially revised Coarse PM NAAQS is generally equivalent to the current standard, EPA has not adequately considered four fundamentally important factors.

1. The coarse fraction of PM_{10} travels only short distances and has primarily a local impact.

2. Agricultural and other fugitive dust sources must maintain compliance with the NAAQS in all areas at and beyond their property line. Due to the localized impact of the coarse fraction of PM_{10}, the NAAQS is more stringent as applied in areas close to the sources than as applied to the widely spaced, sparsely located county PM_{10} monitors. This concern is exacerbated when modeling, rather than monitoring, is required to show NAAQS compliance.

3. PM_{10} in the West, Southwest, and Midwest is composed primarily of coarse particulate matter, while PM_{10} in the eastern U.S. is composed primarily of fine ($PM_{2.5}$) particulate matter.

4. The West, Southwest, and Midwest have areas with low rainfall and frequent high winds. Fugitive dust emissions in these areas cause frequent PM_{10} spikes in 24-hour concentrations -- often more than the 8 spikes in a year that would show a NAAQS exceedance if the 98th percentile format were used.

Due to these important factors, the potentially revised standard will be more stringent than the current standard, especially in the immediate vicinity of sources located in the West, Southwest, and Midwest.

PM_{10} characterization data provided in the Integrated Science Assessment (ISA) indicate that PM_{10} in the West and Southwest is composed of 60% to 80% coarse PM and that PM_{10} in the East is composed of 20% to 40% coarse PM. These data are not necessarily representative of the PM_{10} concentration spikes common in the West, Southwest, and Midwest where the coarse particulate fraction can substantially exceed the 90% level. Coarse PM deposits on the ground and vegetation surfaces quickly, especially when fugitive dust sources are located at or near ground level.

EPA has used a flawed linear regression analysis in selecting a 98th percentile concentration that it claims is "generally equivalent" to the existing one-exceedance-per-year format (99.7^{th} percentile format). EPA's simple linear regression analysis does not include (1) a justification for the existence of a consistent and linear relationship between the two formats over the wide concentration range in the U.S., (2) an examination of the degree of scatter present in both the nationwide and regional regression analyses, or (3) an explanation for the significant positive intercept of the nationwide data set regression analysis. EPA's linear regression analysis masks

regional differences and fails to consider large spatial variations in PM_{10} concentrations in areas dominated by fugitive dust emissions.

A comparison of the monitor-to-monitor differences in the 98th percentile PM_{10} concentrations within specific counties clearly demonstrates the localized impact and short transport distances of the coarse fraction of PM_{10} in the West, Southwest, and Midwest. In these regions, the within-county 98th percentile PM_{10} concentration differences averaged a very high value of 48.4 $\mu g/m^3$. In many cases, a few monitors were well below the potentially revised NAAQS, and others exceeded the standard. By contrast, the within-county differences in 98th percentile PM_{10} concentrations in the East averaged only 11.2 $\mu g/m^3$.

The short transport distances of the coarse fraction of PM_{10} are also demonstrated by conventional dispersion modeling of fugitive dust sources and point sources. Significant differences in PM_{10} concentrations are calculated for receptors located at distances of less than one-half mile from the source. A study of PM_{10} deposition downwind of a quarry provides similar dispersion patterns to those predicted by dispersion modeling.

The EPA AQS PM_{10} data files indicate that many PM_{10} concentration spikes are measured by PM_{10} monitors in the West, Southwest, and Midwest. A few of these spikes are marked as "probable exceptional events" due to high winds, wildfires, or other natural conditions. Most of the concentration spikes lack any codes or qualifiers in the AQS data files. The frequency and severity of the PM_{10} concentration spikes almost entirely determine (1) the occurrence of NAAQS exceedances and (2) the PM_{10} design value calculated in accordance with EPA procedures.

The unmarked (no codes or qualifiers) PM_{10} concentration spikes occur almost exclusively in the arid regions of the U.S. in the West, Southwest, and Midwest. These arid regions are also subject to frequent high winds.

One of the major issues affecting the stringency of the potentially revised NAAQS is EPA's exceptional events policy. The potentially revised NAAQS will be extremely stringent if EPA chooses to ignore all but the most severe PM_{10} concentration spikes due to high winds and wildfires. The stringency of the NAAQS also increases if agencies operating the monitors are unable or unwilling to identify concentration spikes due to natural factors. The EPA three-year average design data provided recently and summarized in Appendix C suggest that EPA has not considered state agency requests for data exclusion due to exceptional events.

The vulnerability to NAAQS exceedances under the potentially revised NAAQS is increased by a number of data quality issues. Much of the PM_{10} data on which EPA relied were obtained using old style monitors operating on a once-every-six-day schedule (sixth-day sampling). Some of the data from sixth-day monitors appear to be lower than the data from collocated monitors operating every day. As agencies switch to more frequent monitoring, the measured concentrations could increase.

This report includes a national map highlighting a broad area of the West, Southwest, and Midwest as especially vulnerable to localized exceedances of the potentially revised NAAQS. These areas are identified based primarily on (1) the within-county variations in the 98th percentile PM_{10} concentrations, (2) the typical 98th percentile concentrations occurring in monitored areas of the states, (3) the precipitation and wind characteristics, and (4) the presence of natural, agricultural, industrial, and area sources of fugitive dust emissions. In these areas, frequent PM_{10} concentration spiking could cause localized exceedances of the NAAQS 85 μg/m^3 level.

Due to the magnitude of fugitive dust emissions during high wind periods in arid regions, year-to-year weather changes can significantly impact the 98th percentile PM_{10} concentrations. Data compiled previously by EPA for a period of approximately 20 years demonstrate large fluctuations in the monitoring site design value levels. Variations in the second-highest high PM_{10} concentrations (existing Coarse PM NAAQS exceedance threshold) of more than 100 μg/m^3 from year to year have been observed for monitoring sites in the West, Southwest, and Midwest. Large year-to-year variations in the 98th percentile PM_{10} concentrations due to weather conditions are anticipated based on these second-highest high concentration data. These variations are masked when EPA combines all of the data from 1988 through 2008 into a single data analysis in the Agency's linear regression analysis. These EPA reported year-to-year changes from 1990 through 2009 are briefly summarized in this report.

The potentially revised NAAQS of 85 μg/m^3 on a 98th percentile basis penalizes the West, Southwest, and Midwest due to PM_{10}concentration-spiking conditions largely associated with weather conditions and the mix of natural and agricultural sources that are beyond reasonable and practical control measures.

This report also addresses the impact of the potentially revised NAAQS set at levels of either 75 or 65 μg/m^3. Three-year-average data provided by EPA for the entire U.S. were used to evaluate possible changes in compliance status. The results indicate that some areas now in compliance with the existing NAAQS will exceed the potentially revised NAAQS. Changes in attainment status impact primarily the West, Southwest, and the Midwest.

The impact on the EPA analyses of quality assurance issues related to PM_{10} data cannot be fully determined. The authors of both the ISA and the Policy Assessment Document (April 2011) are silent on this important issue. EPA simply assumes that all of the PM_{10} ambient air quality data are accurate and sufficient. A detailed review of the AQS files does not support this assumption. Many areas of the U.S. are not in compliance with the minimum PM_{10} monitoring network requirements stated in 40 CFR Part 58, Appendix D. The number of PM_{10} monitoring locations reporting to AQS has declined significantly since 2007. Some of the PM_{10} monitoring sites reporting to AQS have PM_{10} data with probable flaws such as (1) long periods of noncredible low values, (2) days with missing hours, and (3) frequent quality assurance flags. PM_{10} design values calculated from monitors operating once every sixth day might be biased low as compared to monitors operating every day. Finally, the ISA and the Policy Assessment Document do not include a review of the precision of collocated PM_{10} monitors—one of the most well-accepted quality assurance checks for particulate matter monitors.

The data and analyses presented in this report support the following four major recommendations.

1. EPA should retain the current Coarse PM NAAQS.

2. If EPA intends to continue to use PM_{10} as a surrogate for coarse PM, EPA should require state and local agencies to (i) upgrade their monitoring networks to comply with the minimum standards specified in 40 CFR Part 58, Subpart D and (ii) upgrade quality assurance monitoring of the PM_{10} air quality data, so that critical regulatory decisions are made only on the basis of high quality data.

3. Considering the frequency of PM_{10} concentration spikes due to natural sources, wildfires, agricultural operations, and unpaved roads, it is essential that EPA include a comprehensive and clear exceptional events identification procedure. This procedure should be an integral part of the Coarse PM NAAQS.

4. EPA should encourage and support state and local agencies in their deployment of coarse PM concentration monitors. The 80 NCore coarse PM monitors deployed by January 1, 2011 will not be sufficient. As soon as there are a reasonable number of monitors available to directly measure coarse PM, EPA should abandon PM_{10} surrogacy.

3. EVALUATION PROCEDURES

3.1 Scope of the Ambient PM_{10} Data Review

Air Control Techniques, P.C. has evaluated the PM_{10} data for the 2007 through 2009 time period as presented in the following EPA detailed data AQS notepad files available at the epa.gov/ttn/AQS website.

RD_501_81102_2009.zip
RD_501_81102_2008.zip
RD_501_81102_2007.zip

These notepad-based text files include day-by-day and hour-by-hour PM_{10} concentrations for many of the PM_{10} monitoring sites active in the U.S. Air Control Techniques, P.C. has compared the yearly PM_{10} design values calculated from these files with similar data provided by EPA in late April 2011.[2] These EPA calculated data values are very similar to those calculated based on the three files listed above.

This study includes all of the notepad-based data for PM_{10} monitoring sites in 114 counties located in the states listed in Table 2-1. The specific counties are listed using the county codes provided by EPA at the AQS website and reproduced, in part, in a list in Appendix A of this report. The study focused primarily on 451 monitoring site data sets for 2009. These data are summarized in Appendix B of this report. The PM_{10} design value data received from EPA are reproduced in Appendix C. EPA evaluated data from 1,044 sites for 2007 through 2009 to compile three-year average PM_{10} design concentrations expressed on a 98th percentile format.

The Coalition has expressed concerns regarding the impact of the potentially revised NAAQS in the West, Southwest, and Midwest. Accordingly, most of the states included in the scope of the study are in these areas. The term "West" as used in this report includes Alaska, California, Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming. The term "Southwest" includes Arizona, Nevada, New Mexico, and Texas. The term "Midwest" includes the states of Arkansas, Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, and South Dakota. Approximately 85% of the PM_{10} monitoring sites providing data reviewed in this project are from these 21 states. Most of the monitoring sites in the West, Southwest, and Midwest have PM_{10} air quality dominated by coarse particulate matter.

As indicated in Table 3-1, a few states in the Eastern U.S. are included in the scope of the study. The Eastern U.S. is defined as all areas east of the Mississippi River. The Eastern U.S. data are included primarily to check for the impact of the potentially revised NAAQS in areas where the PM_{10} air quality is dominated by fine particulate matter.

[2] Coalition representatives initially requested the EPA data during an October 13, 2010 meeting and restated this request during a meeting on February 25, 2011. EPA provided these data on April 28, 2011.

At several points in this evaluation, the term "coastal Pacific Northwest" is used to describe the area starting near San Francisco and extending to the north along the Pacific Ocean to the northern border of the state of Washington. The climate of this area differs significantly from areas in California, Oregon, and Washington that are east of the mountains. These latter areas are included in the West.

Table 3-1. Geographical Scope of the 2009 PM_{10} Data Review

Region	State	Counties[3]
West	Alaska	20, 170
	California	9, 11, 17, 19, 23, 25, 27, 31, 37, 51, 65, 67, 71, 77, 89, 93, 105, 113
	Colorado	3, 51, 99, 107, 117
	Idaho	1, 5, 77
	Montana	29, 53, 63, 89
	Oregon	2, 9, 35, 39, 51, 59, 61
	Utah	5, 11, 35, 49, 57
	Washington	63, 65, 77
	Wyoming	5, 7, 9, 13, 21, 23, 25
Southwest	Arizona	3, 13, 19, 21, 23, 25, 27
	Nevada	3, 31
	New Mexico	1, 5, 13, 17, 25, 29, 49, 55
	Texas	29, 113, 141, 167, 201
Midwest	Arkansas	119
	Iowa	33, 163
	Kansas	177, 181, 209
	Missouri	510
	Nebraska	25, 47, 55
	North Dakota	15, 17, 25, 53, 57
	Oklahoma	1, 5, 109, 143
	South Dakota	11, 13, 93, 99, 103
East.	District of Columbia	1
	Florida	86, 105
	Georgia	21, 121
	Illinois	31, 119
	Indiana	127
	Maine	3
	Michigan	163
	Ohio	61, 95, 99
	Pennsylvania	3, 7

[3] Appendix A includes the names of the listed counties

Air Control Techniques, P.C. chose the specific counties listed in Table 3-1 based partly on the availability of data. PM_{10} ambient air monitors operate in only 12% of the counties in the U.S. Most counties chosen are in the West, Southwest, and Midwest because that is the area of primary concern for the Coalition.

3.2 Data Handling Procedures

Air Control Techniques, P.C. imported the notepad PM_{10} data and supporting information into EXCEL2010 files. Daily average PM_{10} concentrations for filter-based monitors operating on a 24-hour basis were used directly. Hourly average PM_{10} concentration data from continuously operating instruments were converted to daily average concentration values prior to processing.

Air Control Techniques, P.C. set aside data from a few PM_{10} monitoring sites. These sites include those used only on a seasonal basis and those providing very incomplete data. The quality of a few PM_{10} hourly data sets suffered from numerous multi-hour "dropouts" that affected the accuracy of the daily average value calculated from the data. Data sets with more than four days affected by "dropouts" were set aside due to (1) concerns regarding the impact of missing data on the 98th percentile calculations and (2) the extensive labor needed to calculate the 24-hour averages. Unfortunately, none of these "dropout" periods were denoted by any quality assurance codes or other markers to assist in the data review.

Many of the data sets included state and local agency codes denoting possible exceptional events. Based on the agreement of the 2009 data calculated by Air Control Techniques, P.C. (Appendix B) and the 2009 data provided by EPA (Appendix C), it is clear that EPA has not excluded the possible exceptional event data in calculating its PM_{10} design values.

The 98th percentile concentrations are calculated based on the procedures described in 40 CFR Part 50, Appendix N for $PM_{2.5}$ particulate matter. Considering that EPA might revise the PM_{10} NAAQS to match the format of the $PM_{2.5}$ NAAQS, it is reasonable to assume that EPA will use the same "look-up" table calculation approach described in Appendix N and summarized in Table 3-2. The three-year average PM_{10} 98th percentile design concentrations are based on Equation 6 of Appendix N.

The 99.7th percentile calculations are based on the procedures described in the PM_{10} SIP Guidance Manual.[4] As indicated in Table 3-3, the 99.7th percentile concentration for data sets of less than 347 values is the maximum value in the data set. The 99.7th percentile concentration for data sets having equal to or more than 347 data sets is the second highest value.

[4] Page 6-5, U.S. EPA. "PM_{10} SIP Development Guideline, U.S. EPA Publication EPA-450/2-86-001, June 1987

Table 3-2. Appendix N Look-Up Table[5] for 98th Percentile Concentrations	
Annual creditable number of samples for year "y" (cn_y)	$P_{0.98, y}$ is the nth maximum value of the year, where n is the listed number
1–50	1
51–100	2
101–150	3
151–200	4
201–250	5
251–300	6
301–350	7
351–366	8

The three-year PM_{10} concentrations in the existing NAAQS format are based on the combined three-year data sets and the look-up table provided in the PM_{10} SIP Development Guidance.

Table 3-3. Tabular Estimation of PM_{10} Design Concentrations[6]			
Number of Daily Values	Rank of Upper Bound	Rank of Lower Bound	Data Point Used for Design Concentration
≤347	-	1	Highest value
348-695	1	2	Second highest value
696-1042	2	3	Third highest value
1043-1390	3	4	Fourth highest value

Appendix B of this report contains the calculated PM_{10} design values for the existing and potentially revised NAAQS. Design values calculated using a continuous function rather than the EPA look-up tables are also included as a double check of the values calculated by EPA procedures. These additional values are useful because errors can be easily introduced in the manual calculation steps involved in the EPA calculations.

The Appendix B tables include notes regarding the quality and characteristics of the PM_{10} data. These notes are based, in part, on data quality codes or other qualifiers included in the EPA notepad files. However, in most cases, the notes in the Appendix B tables concern issues or important characteristics of the PM_{10} data that are not marked by any Agency-entered codes or qualifiers.

[5] Source: Table 1 of 40 CFR Part 50, Appendix N
[6] Source: Table 6-1 in "PM10 SIP Development Guideline", EPA-450/2-86-001, June 1987.

3.3 PM_{10} Data Quality

Extremely Limited Data Available for Eight States—The EPA PM_{10} monitoring data sets for 2007-2009 had very limited PM_{10} data for eight states. As indicated in Table 3-4, there are only two monitoring sites in the Metropolitan area of New York City, and both of these are located in New Jersey. The only PM_{10} monitor located in New York State is located upstate in the city of Malone. Data from only two to three monitoring sites are available for the states of Louisiana and for only one of the monitoring sites in Maryland. There are no 2009 data from Mississippi.

Table 3-4. States with Extremely Limited Number of PM_{10} Monitors

State	Number of Monitors	Number of Complete Three Year Datasets	Cities with Monitors
Arkansas	1	1	Little Rock
Delaware	1	1	New Castle
Louisiana	5	3	Caddo, East Baton Rouge, Lafayette, Bernard
Maryland	3	1	Baltimore, Anne Arundel (Baltimore area)
Mississippi	1	0	Jackson
New Hampshire	2	2	Hillsborough, Rockingham
New Jersey	6	5	Atlantic City, Bergen, Camden, Hudson, and Mercer
New York	1	1	Malone

Other states in the Eastern U.S. have more monitors than the eight states listed in Table 3-4, but these are still too few to adequately characterize the spatial distribution of PM_{10}. EPA has apparently not required some states to maintain a PM_{10} monitoring network consistent with the EPA's minimum requirements stated in 40 CFR Part 58, Subpart D, Table D-4 (Table 3-5 below).

Table 3-5. PM_{10} Monitoring Network Requirements
(40 CFR Part 58, Subpart D, Table D-4)

Population Category	Number of Monitors		
	High Concentration[2]	Medium Concentration[3]	Low Concentration[4]
>1,000,000	6–10	4–8	2–4
500,000–1,000,000	4–8	2–4	1–2
250,000–500,000	3–4	1–2	0–1
100,000	1-2	0-1	0

"[2]High concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding the PM_{10}NAAQS by 20 percent or more. [3]Medium concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding 80 percent of the PM_{10}NAAQS. [4]Low concentration areas are those for which ambient PM_{10} data show ambient concentrations less than 80 percent of the PM_{10}NAAQS." 40 CFR Part 58

Areas with inadequate PM_{10} monitoring include, but are not necessarily limited to the following.

- New York City, New York
- Albany, New York
- Buffalo, New York
- Rochester, New York
- New Orleans, Louisiana
- Lansing, Michigan
- Jackson, Mississippi

It is apparent that there are major gaps in the PM_{10} data available to EPA to evaluate possible revisions to the NAAQS.

Downward Trend in the Number of PM_{10} Monitoring Locations—The EPA data set included AQS data from 2007 through 2009. Nine hundred forty eight monitoring locations operated in 2007. In 2008 that number dropped to 916. By 2009, the number of monitoring locations had fallen to 862. It is apparent that state and local agencies are deactivating more PM_{10} sites than they are installing. The amount of PM_{10} data available to evaluate the impact of the potentially revised NAAQS is shrinking.

Incomplete Three-Year Data Sets—The PM_{10} design value data provided by EPA on April 28, 2011 included data for 1044 monitoring locations. However, complete three-year data sets for the 2007 through 2009 were available for only 614 monitoring locations—approximately 60% of the total.

Collocated Monitoring Data Results—Many of the PM_{10} monitoring sites include two or more PM_{10} monitors. In a few cases, the monitors were identical, and the comparison of the results provides a true indication of the precision of the measurement. In many cases, two different PM_{10} monitors operated at the monitoring site, and some of these instruments operated on different sampling frequencies. In these cases, differences in the PM_{10} 98th percentile values provide only a general indication of the overall quality of the data. Air Control Techniques, P.C. has used both types of collocated monitoring data to qualitatively evaluate the adequacy of the PM_{10} data.

Air Control Techniques, P.C. prepared a subset of the Appendix B tables to focus on collocated monitoring results. Appendix F, Tables F-1 and F-2 contain the collocated monitor data. Comparisons of the 2009 98th percentile concentrations at the collocated monitors demonstrate that some data sets with similar sampling frequencies have significantly different PM_{10} concentrations. These differences raise concerns regarding the quality of some of the data that EPA is using to evaluate the impact of the potentially revised NAAQS.

Extended Periods of Low, Zero, and/or Negative Values—Many of the monitoring site data sets reviewed as part of this study had PM_{10} concentrations in the range of 3 $\mu g/m^3$ to less than a negative 50 $\mu g/m^3$. Values below 3 $\mu g/m^3$ are not credible except perhaps for winter periods in some northern states. PM_{10} continuous monitors experienced drift issues that created

negative concentration values that are obviously not credible. Monitoring location data sets affected by these issues are marked in the data tabulation provided as Appendix B of this report. Specific examples of the non-credible data are listed in Table 3-6.

Table 3-6. Examples of Questionable PM_{10} Data

State	County	Location	Monitor	Examples of Days with Three or More Hours of Non-Credible, Low PM_{10} Concentrations[7]
California	011	0007	1	7/7 to8/3, 8/27 to 9/03. 9/20 to 10/08, 11/1 to 12/1
California	027	0002	1	2/06 to 2/10, 2/17 to 2/19
California	037	9033	2	6/9 to 7/7
California	065	2002	3	1/25
California	071	1234	2	1/24 to 1/26, 2/23 to2/24, 4/9 to 4/11, 4/12,
Kansas	173	0010	1	10/13 to10/15, 10/21to10/23, 11/23 to11/30
New Mexico	013	0017	2	11/28 to 12/02, 12/04
Washington	005	0002	3	12/19, 12/21
Wyoming	005	0802	1	1/1 to 1/19, 1/25 to 2/03

In addition to the examples of non-credible low PM_{10} data, Monitoring Location 350130016 (New Mexico) had nearly constant PM_{10} concentrations every monitoring day for six months. This also suggests some lack of quality assurance review.

Sampling Frequency—Essentially all of the continuously operating instruments provide PM_{10} data every day. The filter sample-based monitors, especially those based on 40 CFR Part 50 Appendix J, operate every day, every third day, or every sixth day. Table 3-7 summarizes a number of collocated monitor data sets in which the data from monitors operating every sixth day appeared to have significantly lower 98th percentile values than data from monitors operating every day. Eighteen of the twenty-four data sets listed in Table 3-7 had higher PM_{10} concentrations at those samplers operating with the highest sampling frequency. If sixth-day monitors under-report the true PM_{10} 98th percentile concentrations, it is possible that the EPA data sets include a bias to lower-than-true PM_{10} concentrations. This would have important implications with respect to the review of epidemiological data relying entirely, or in-part, on sixth-day data and with respect to the equivalency determination of the potentially revised NAAQS. This issue is discussed further in Section 4 of this report.

[7] Days listed here have three or more hours per day with PM_{10} concentrations equal to or less than 3 micrometers per cubic meter. These are example periods only. Many other monitoring locations and monitoring days at the locations listed in Table 3-5 could have extremely low PM_{10} concentrations.

Table 3-7. Comparison of PM_{10} 98th Percentile Values for PM_{10} Monitors with Different Sampling Frequencies

Monitor 1	Number of Days	98th Percentile Value, µg/m^3	Monitor 1	Number of Days	98th Percentile Value, µg/m^3	Higher Frequency vs Lower Frequency, PM_{10} (98th Percentile) Ratio
2-20-44-1	178	88	2-10-44-2	26	86	1.02
4-13-9997-3	365	64	4-13-9997-1	31	59	1.08
4-21-1-3	365	116	4-21-1-1	58	99	1.17
4-21-3008-3	365	197	4-21-3008-1	61	91	2.16
4-21-3011-3	363	214	4-21-3001-1	54	165	1.30
4-21-3011-3	363	214	4-21-3001-2	58	102	2.10
4-21-3013-2	360	286	4-21-3013-1	58	210	1.36
4-21-7004-1	110	81	4-21-7004-2	53	81	1.00
6-27-1003-4	365	116	6-27-1003-7	26	284	0.41
6/27-1003-6	364	201	6-27-1003-7	26	284	0.71
6-29-10-3	365	79	6-29-10-1	60	112	0.71
6-31-4-7	359	94	6-31-4-1	61	83	1.13
6-31-4-7	359	94	6-31-4-3	59	86	1.09
6-31-4-7	359	94	6-31-4-4	60	83	1.13
6-37-1003-3	354	74	6-37-1003-2	60	62	1.19
6-37-9033-2	365	44	6-37-9003-1	52	58	0.76
6-51-1-6	365	62	6-51-1-5	118	68	0.91
6-65-2002-3	364	83	6-65-2002-2	116	68	1.22
6-65-2002-3	364	83	6-65-2002-4	60	81	1.02
6-65-5001-3	316	72	6-65-5001-2	54	42	1.71
6-65-8001-5	359	70	6-65-8001-2	109	75	0.93
6-65-8001-5	359	70	6-65-8001-4	61	68	1.03
6-67-4001-3	361	38	6-67-4001-2	57	33	1.15
6-71-306-2	365	61	6-71-306-1	61	49	1.24
6-71-1234-2	330	63	6-71-1234-1	61	32	1.97
16-5-15-3	339	65	16-5-15-1	43	82	0.79
35-1-26-1	343	73	35-1-26-2	53	75	0.97

Comparisons with EPA Data Sets—For all but a few of the 2009 data sets, the PM_{10} data compiled and analyzed in the report are very similar to EPA's April 28, 2011 data set. The data form most monitors were identical and some varied between 1 to 2 micrograms per cubic meter. These slight differences could have been introduced by differences in the procedures used by Air

Control Techniques, P.C. and EPA to (1) address 24-hour periods with less than 24 hourly readings and (2) account for hourly average value "dropouts." Both sets of 2009 data are provided in Appendix B, Tables B-1 and B-2 and Appendix C. The slight differences in the PM_{10} data sets do not affect any of the conclusions of this study.

3.4 PM_{10} Data Concentration Spiking Characteristics

The potentially revised NAAQS expressed as a 98th percentile value focuses entirely on the eight highest PM_{10} 24-hour average concentrations measured at a monitoring site during a year. Accordingly, the extent of PM_{10} concentration spikes is of particular importance in any evaluation of the impact of the potentially revised NAAQS. Tables B1 and B2 in Appendix B include a number of comments concerning PM_{10} concentration spike frequency and severity.

The distribution of PM_{10} concentrations is quite different across the U.S. as illustrated in the PM_{10} data for Phoenix and Detroit shown in Figures 3-1 and 3-2. The data from Phoenix represent concentration profiles throughout the West, Southwest, and Midwest. The data from Detroit represent typical concentration profiles in urban areas of the Eastern U.S. and the coastal Pacific Northwest.

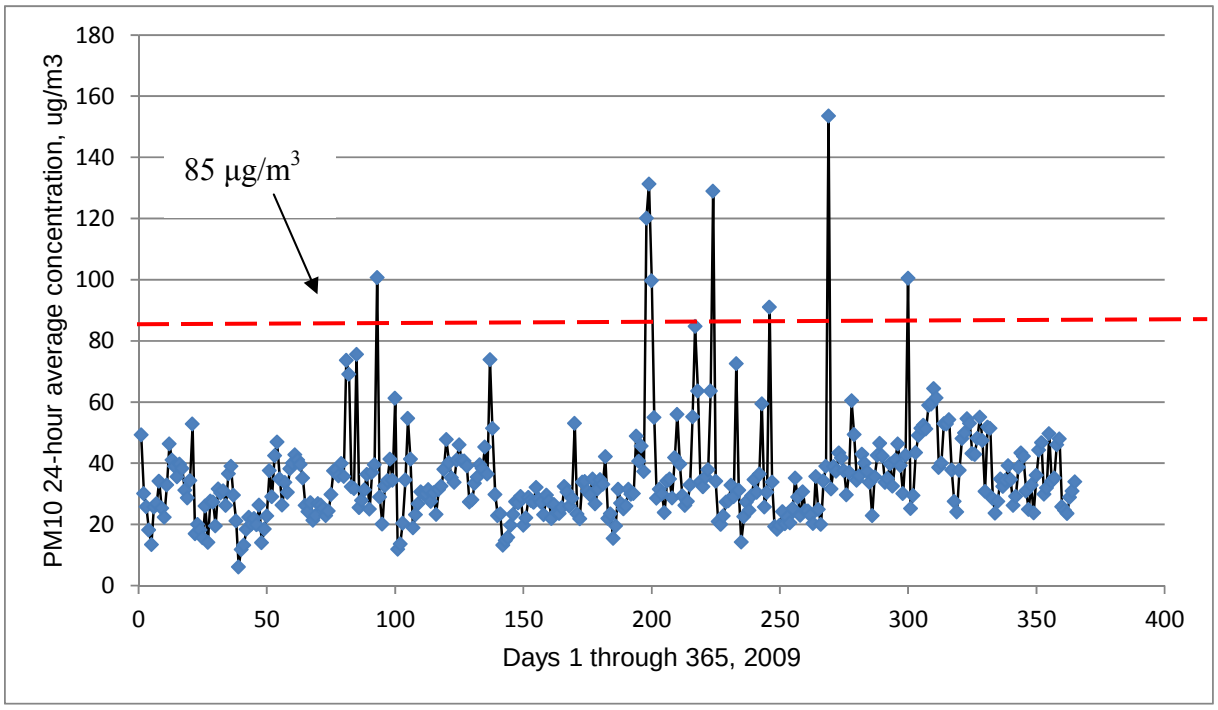


Figure 3-1. PM_{10} 24-hour average concentration data, Phoenix, Arizona, monitor 3002

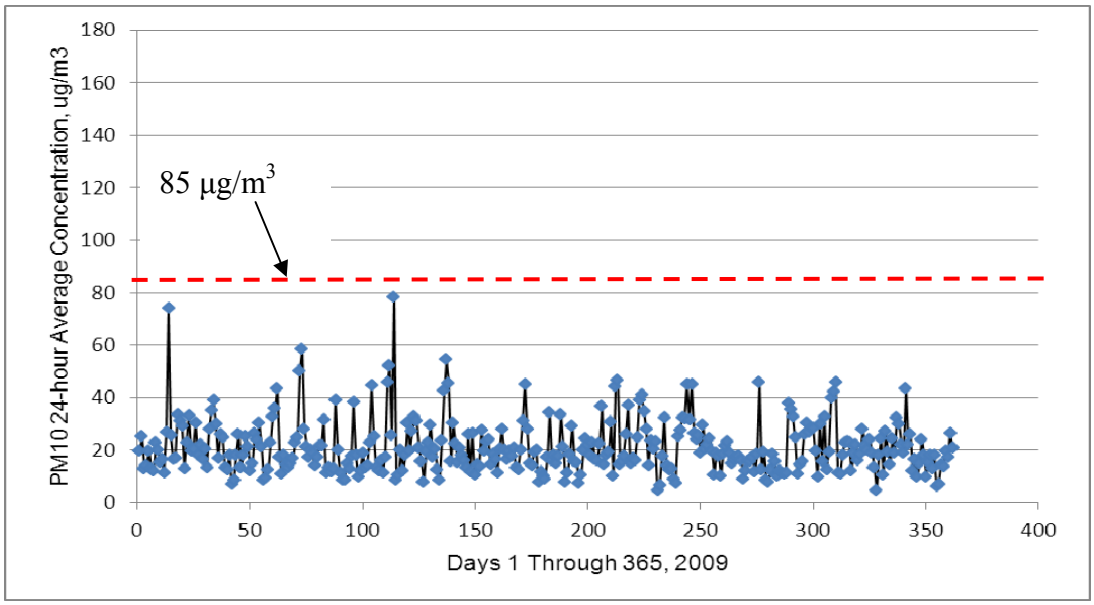


Figure 3-2. PM_{10} 24-hour average concentration data, Detroit, Michigan, monitor 33

PM_{10} concentration spikes occur much more frequently in the West, Southwest, and Midwest than in the Eastern U.S.

The twenty-four hour average concentration values in Figures 3-1 and 3-2 do not fully illustrate the spiking characteristics of fugitive dust emissions in the West, Southwest, and Midwest. The hourly data provided in Figure 3-3 illustrate a relatively typical wind-blown fugitive dust spikes measured at monitoring site 040270004 in Arizona.

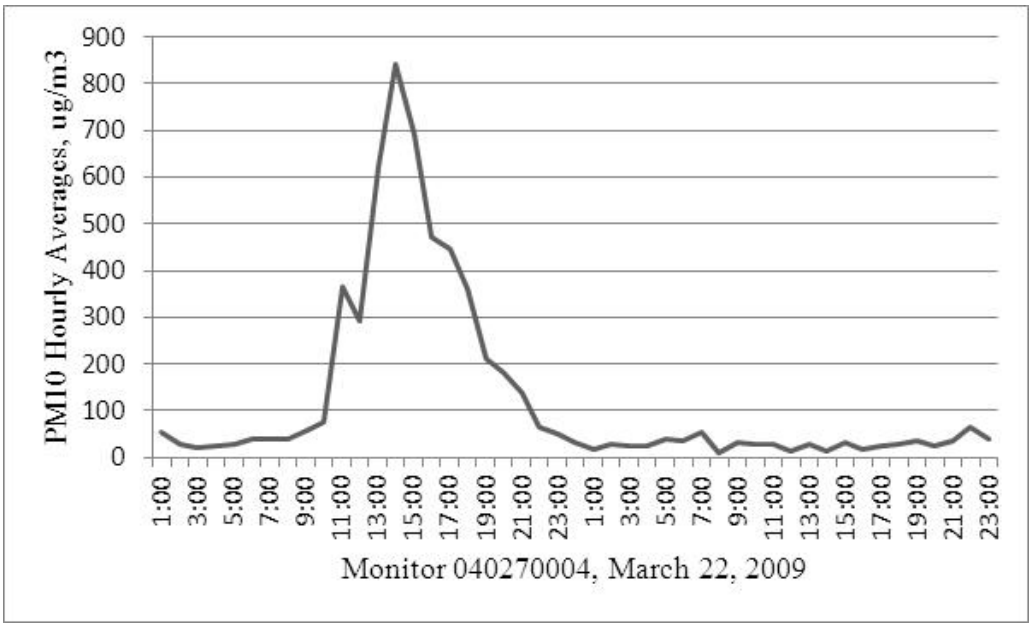


Figure 3-3. PM_{10} concentration spike due to high wind

The spike shown, which occurred from 10:00 a.m. to 11:00 pm on March 22, 2009, was marked as a high wind-related event. The daily average concentration for this day was 215 μg/m^3.

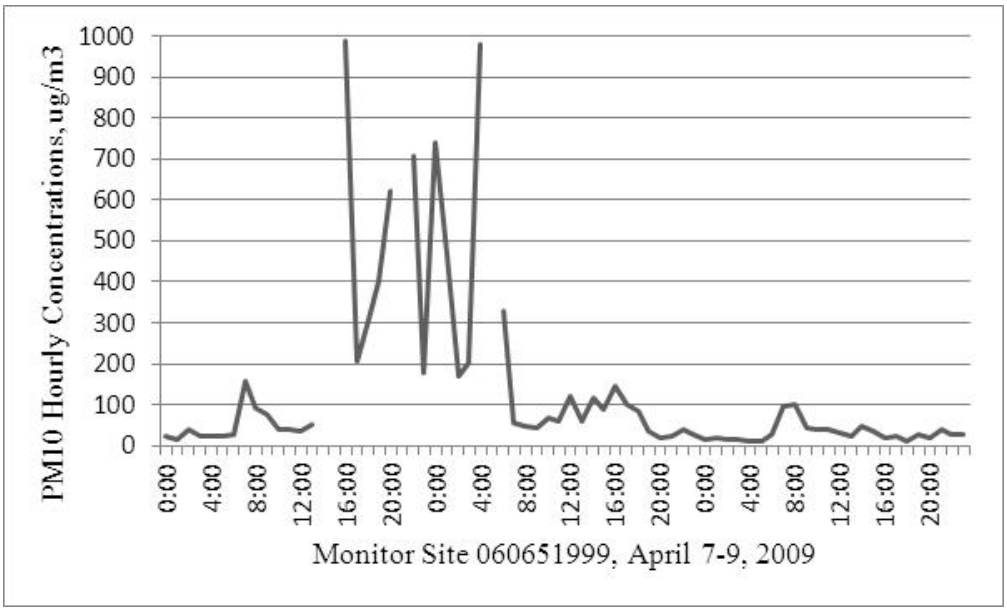


Figure 3-4. PM_{10} concentration spike due to high winds

The PM_{10} concentration spike shown in Figure 3-4 resulted in 24-hour concentrations ranging from 31 μg/m^3 during April 9 to 194 and 175 μg/m^3 on April 7 and 8, respectively. The EPA database included high wind codes for all of the spikes between 2 p.m. on April 7 and 7:00 a.m. on April 8. The PM_{10} concentration spike shown in Figure 3-5 resulted in a 24-hour concentration value of 96 μg/m^3.

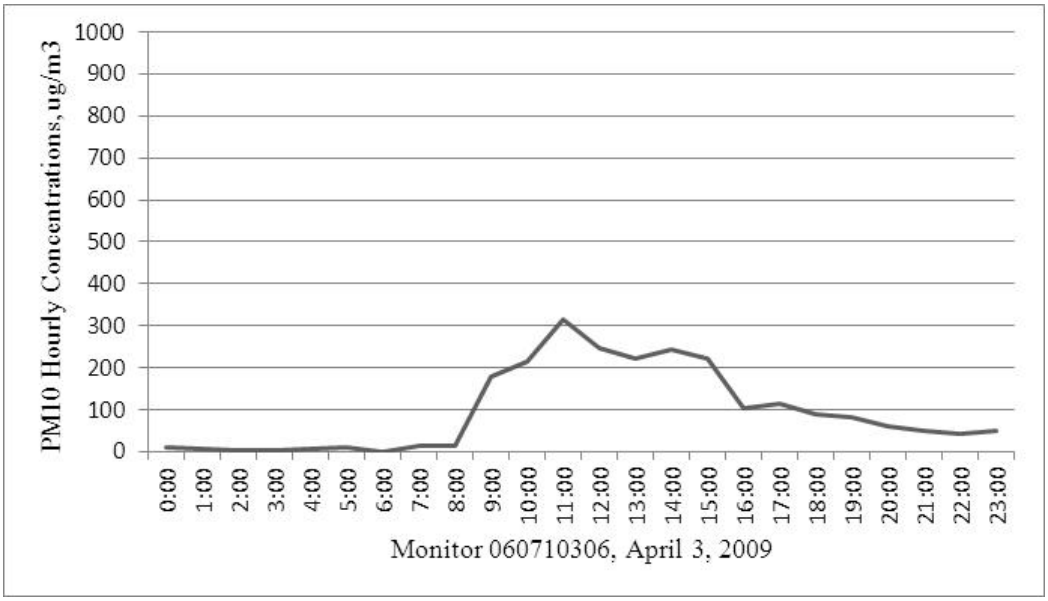


Figure 3-5. PM_{10} concentration spike due to high winds

In a relatively few cases, the EPA data sets include codes suggesting the source or condition responsible for the PM_{10} concentration spike. For example, Figure 3-6 shows a concentration spike due to tilling, and Figure 3-7 shows a concentration spike due to construction activity.

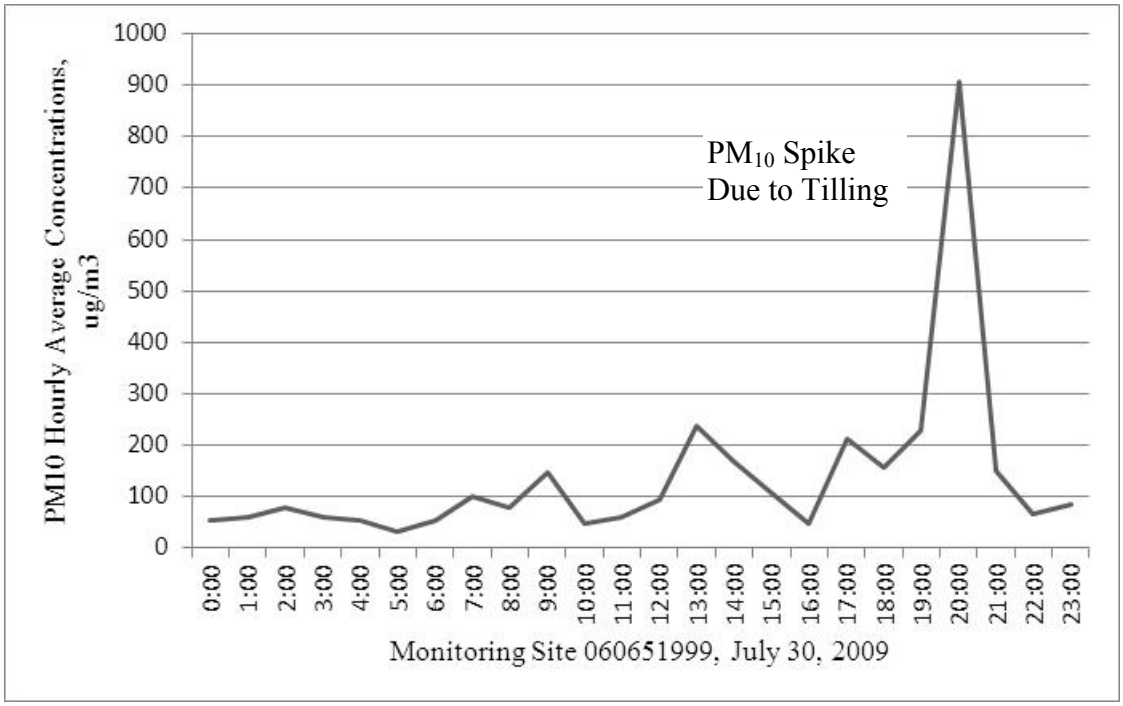


Figure 3-6. PM_{10} concentration spike due to tilling

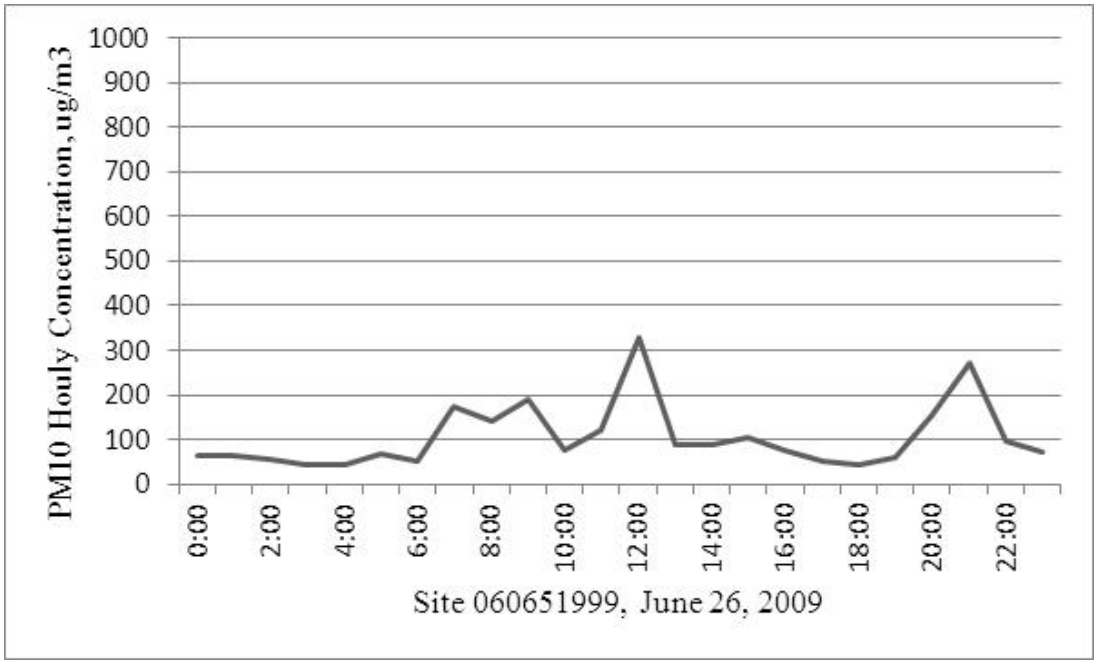


Figure 3-7. PM_{10} concentration spike due to construction and unidentified activities

To the extent possible, all of the source/cause-related codes included in the EPA data sets have been included in the "notes" field of the Appendix B tables. If the data source/cause codes in the datasets did not appear to be related to any noticeable impact on PM_{10} concentrations, the phrase "little impact" was included with the note.

The EPA data sets included no codes or other qualifiers for the large majority of concentration spikes with a severity similar to those shown in Figures 3-3 through 3-7. Many of the monitoring sites in the West, Southwest, and Midwest had major, short-term concentration spikes that are termed "unmarked" in the Appendix B tables. The lack of codes or qualifiers suggests either that EPA and/or the agency operating the monitor (1) could not identify the cause of the spike or (2) has not yet reviewed the meteorological data and other information needed to identify the cause of the spike.

The numerous "unmarked" concentration spikes in the data sets raise concerns regarding the adequacy of the exceptional events procedures. It is possible that many PM_{10} concentration spikes are due to conditions such as high winds or wildfires that are not controllable. These frequent spikes have a direct and significant impact on the 98th percentile concentrations in the West, Southwest, and Midwest. Conversely, the unmarked concentration spikes are not a significant issue in the Eastern U.S. and coastal Pacific Northwest.

3.5 Long Term Trends in PM_{10} Concentrations

Air Control Techniques, P.C. has accessed some additional PM_{10} data not included in the three notepad files listed earlier. EPA has published second-highest-high PM_{10} concentrations for many monitoring sites over the period of 1990 through 2009. These data are available at the EPA website (http://www.epa.gov/airtrends/pm.html#pmloc). These data provide a means to look at PM_{10} concentration variability over a much longer time period than the 2007 through 2009 data summarized in Appendices B and C.

The PM_{10} concentration variability is readily apparent in the long-term data provided in Figures 3-8 through 3-11 for monitors in the West, Southwest, and Midwest. The year-to-year changes suggest that weather-related conditions strongly influence PM_{10} design concentrations. Attainment evaluations based simply on the latest three-year period fail to take into account these longer term variability issues. Based on the previous 20 years of data, it is apparent that areas not exceeding the NAAQS during the last three years could significantly exceed the NAAQS in future years due to weather variations. Additional long term PM_{10} concentration profiles are provided in Appendix E of this report. It is likely that a similar pattern would be shown for the 85 $\mu g/m^3$ 98th percentile form – significant variation in measured concentrations over a longer term period than the three year period that EPA uses in its attainment analyses.

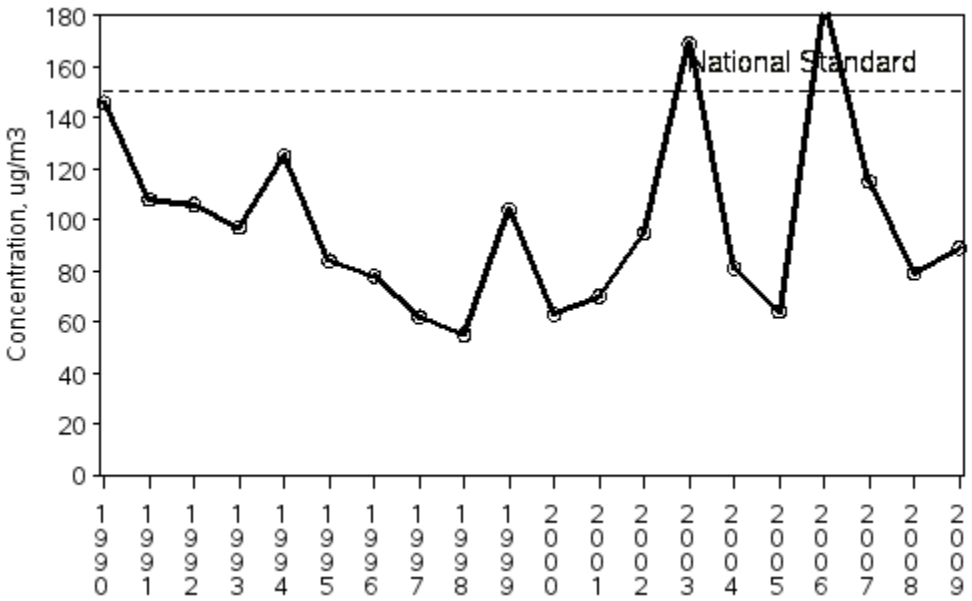


Figure 3-8. PM_{10} air quality, 1990 – 2009, based on annual second maximum 24-hour average, Las Cruces, New Mexico, Site 35-013-0016, POC-1
(Source: http://www.epa.gov/airtrends/pm.html#pmloc)

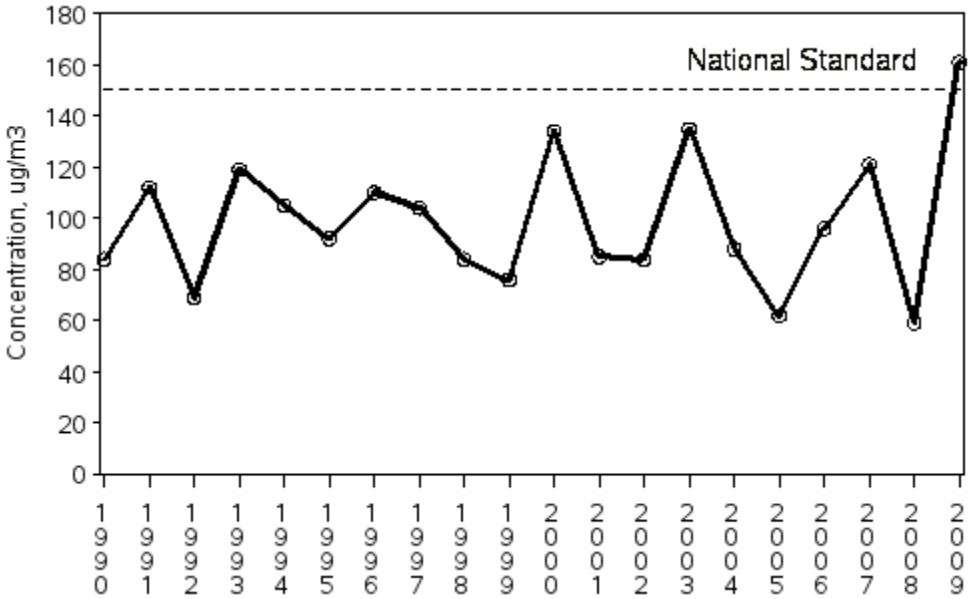


Figure 3-9. PM_{10} air quality, 1990 – 2009, based on annual second maximum 24-hour average, Imperial County, California, Site 06-025-1003, POC-1
(Source: http://www.epa.gov/airtrends/pm.html#pmloc)

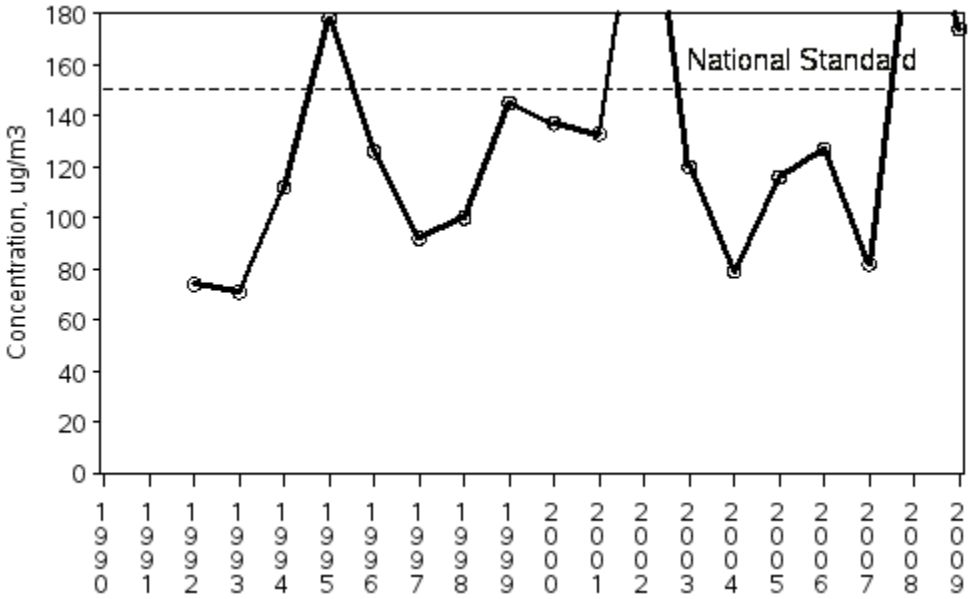


Figure 3-10. PM_{10} air quality, 1990 – 2009, based on annual second maximum 24-hour average, Prowers County, Colorado, Site 08-099-0001, POC-2.
(Source: http://www.epa.gov/airtrends/pm.html#pmloc)

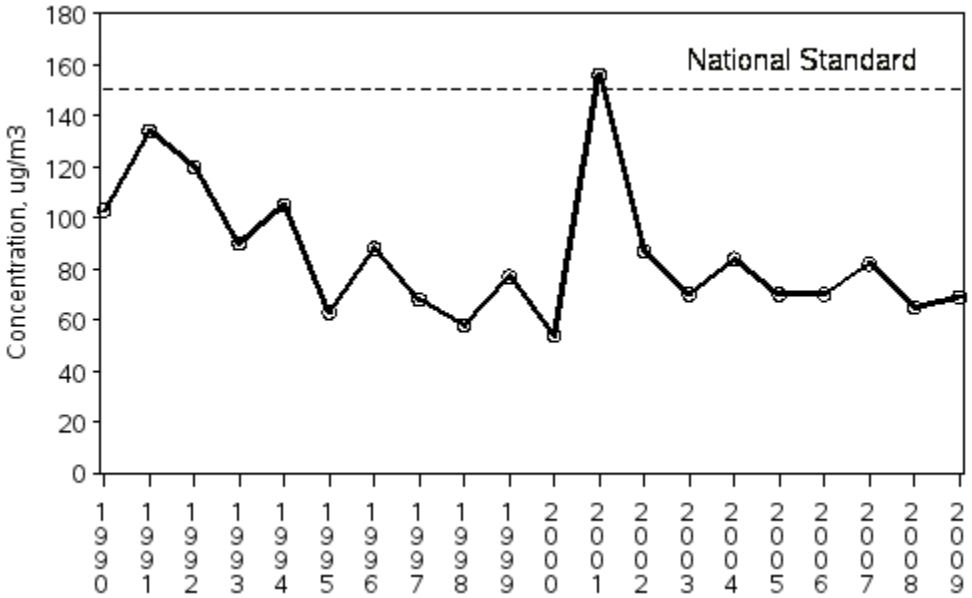


Figure 3-11. PM_{10} air quality, 1990 – 2009, based on annual second maximum 24-hour average, Salt Lake City-Ogden, Utah, Site 49-035-1001, POC-3.
(Source: http://www.epa.gov/airtrends/pm.html#pmloc)

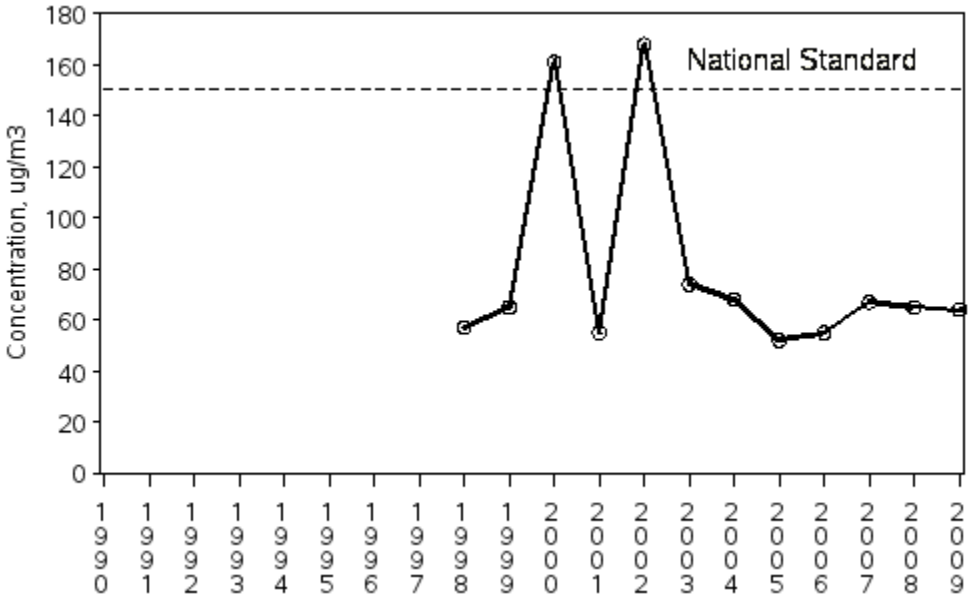


Figure 3-12. PM_{10} air quality, 1990 – 2009, based on annual second maximum 24-hour average, Las Vegas, Nevada, Site 32-003-0601, POC-1.
(Source: http://www.epa.gov/airtrends/pm.html#pmloc)

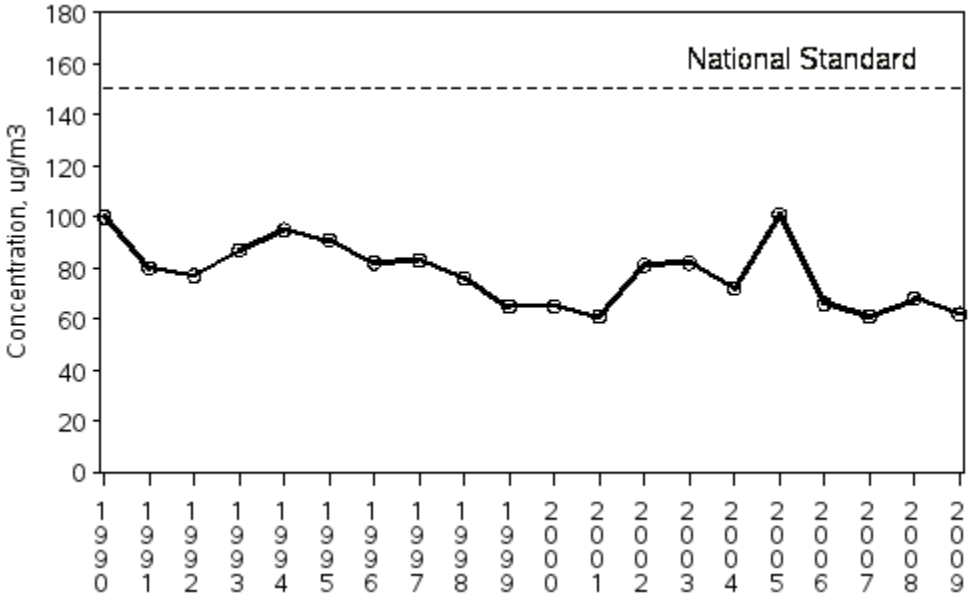


Figure 3-13. PM_{10} air quality, 1990 – 2009, Based on annual second maximum 24-hour average, Pittsburgh, Pennsylvania, Site 42-003-1301, POC-1.
(Source: http://www.epa.gov/airtrends/pm.html#pmloc)

4. LOCALIZED IMPACT OF THE POTENTIALLY REVISED COARSE PM NAAQS

In the Policy Assessment Document (April 2011), EPA discussed a potentially revised PM_{10} NAAQS of 85 μg/m^3 on a 98th percentile format. EPA claimed that this value is generally equivalent to the existing PM_{10} NAAQS of 150 μg/m^{3}expressed on a one exceedance per year format.

The coarse fraction of PM_{10} is different from every other air pollutant regulated and monitored by EPA. PM_{10} does not travel far from its source—its impact is local. Widely separated PM_{10} monitors in a few counties do not provide an accurate or complete assessment of the spatial differences in PM_{10} concentrations in the county or across the state. The EPA NAAQS equivalency evaluation fails to take this fact into account. This section addresses the localized variations in PM_{10} concentrations and emphasizes that a promulgated NAAQS applies to all publically accessible areas—not just the limited areas around PM_{10} monitors in a few counties.

The EPA analysis also does not take into account the significant regional differences in the importance of fugitive dust sources and the size ranges of fugitive dust emissions. In the arid and windblown areas of the West, Southwest, and Midwest, relatively large fugitive dust particles are emitted in high concentrations and travel short distances prior to atmospheric removal. The PM_{10} concentration spikes illustrated in Section 3 of this report are common through this region of the U.S.

The operators of industrial and agricultural sources of fugitive dust are held accountable to the NAAQS based on localized PM_{10} concentrations predicted by atmospheric dispersion models and/or measured by local ambient air monitors. The NAAQS must be achieved all of the time at all areas from the property fence line outward from the source. The localized differences in PM_{10} concentrations that are missed by widely dispersed regulatory agency ambient air monitors are more accurately detected by localized monitors or reflected in dispersion models. Accordingly, the differences in PM_{10} levels over short distances are extremely important to source operators.

This section starts with a brief review of the analyses on which EPA relied to determine that a potentially revised NAAQS of 85 μg/m^3 expressed on a 98th percentile format generally equates to the existing 24-hour average PM_{10} NAAQS. Information concerning the $PM_{10}/PM_{2.5}$ ratios and the short transport distances of PM_{10} provides a foundation for later discussions regarding the severe spatial nonuniformity of PM_{10} concentrations around localized areas. Information concerning the major regional differences in precipitation, wind gusts, and other factors relating to fugitive dust helps to identify portions of the West, Southwest, and Midwest where the potentially revised NAAQS is not generally equivalent to the existing standard. These especially vulnerable areas are discussed at the conclusion of this section.

4.1 EPA'S Basis for the Claim of Coarse PM NAAQS Equivalency

EPA has combined all PM_{10} air quality data in the U.S. into a single regression analysis as shown in Figure 4-1 reproduced from Figure 3-7 of the Policy Assessment Document (April 2011). The horizontal axis is the PM_{10} data expressed as a "design value." The design value is used to convert the awkward one-exceedance per year format of the NAAQS into a parameter having units of micrograms per cubic meter. It provides a convenient measure of the extent of conformance with the NAAQS. The vertical axis is a PM_{10} design value expressed as the average 98th percentile value over the previous three years. EPA used PM_{10} data from 1988 to 2008 to prepare Figure 4-1.

As indicated in Figure 4-1, EPA has determined that at a design value of 150 µg/m^3, the generally equivalent PM_{10} concentration expressed in a 98th percentile format is 87 µg/m^3. The Agency then used 85 µg/m^3 as a convenient approximation of that regression analysis-derived value.

EPA's analysis is inherently inadequate because (1) there is no information supporting the conclusion that the two design values are logically related, (2) there is no information supporting the assumption that a relationship between the two design values is linear over the entire concentration range, (3) there is no quantification of the extent of scatter in the data, and (4) there is no explanation for the positive intercept of approximately 20 µg/m^3. Without considerable supporting information, EPA's linear regression analysis is simply a meaningless line through a large and highly variable set of data points.

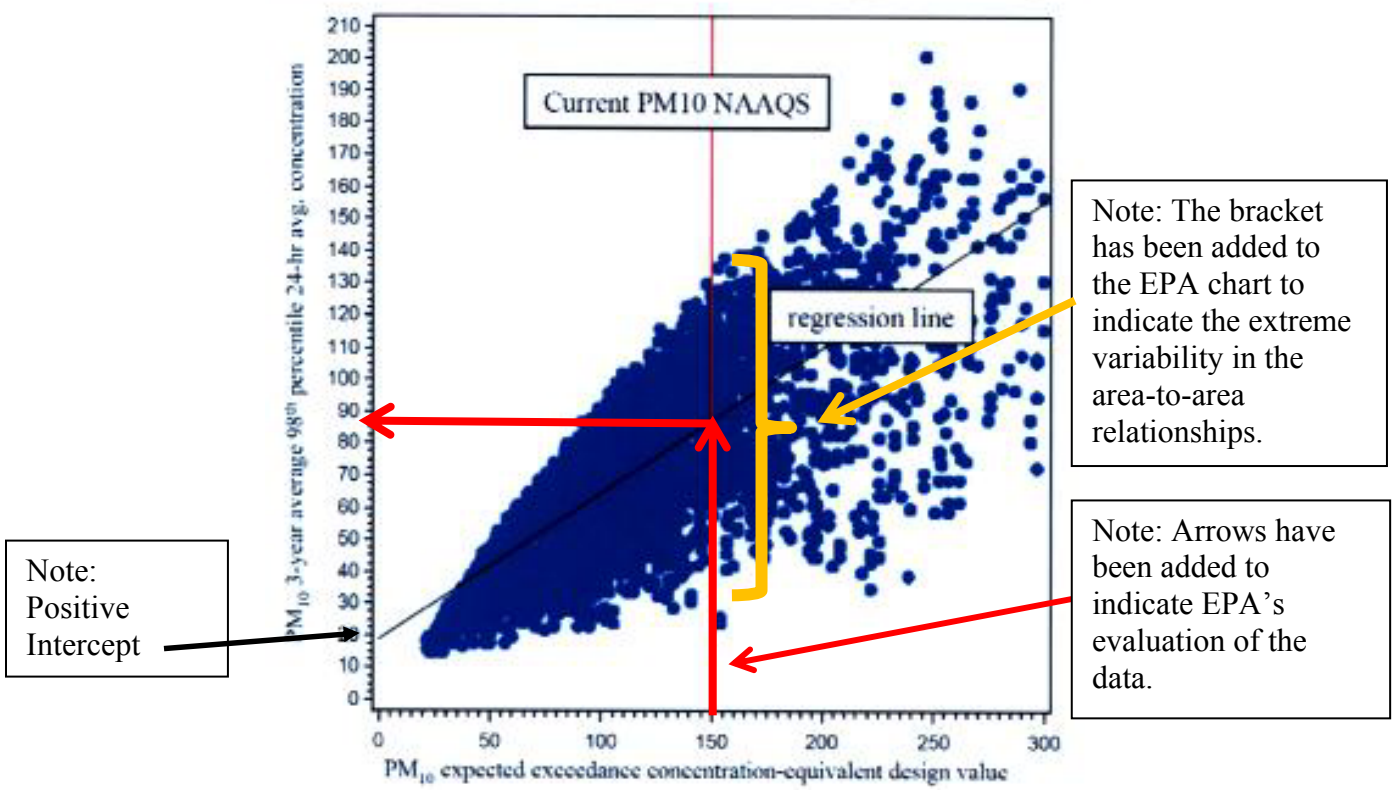


Figure 4-1. EPA's equivalency evaluation (Adapted from: Policy Assessment Document)

The data scatter in EPA's figure suggests substantial variability. At any given design value (horizontal axis), a wide range of 98th percentile values exists. At a design value of 150 µg/m^3, the range extends from approximately 30 to 130 µg/m^3. This extreme variability demonstrates that this figure does not provide a sufficient basis for determining NAAQS equivalency. The data provided in EPA analyses of Figure 4-1 do not provide any conclusive indication of a 98th percentile design value that is generally equivalent to the one-exceedance per year design value.

4.2 Regression Analysis of Regional PM_{10} Data

EPA has included a set of regionally-oriented regression lines, one of which applied to the area that Agency terms the "Southwest." While this chart could not be adequately reproduced from the Policy Assessment Document (April 2011), it is relatively similar to Figure 4-1 with respect to the position of the regression line and the degree of data scatter. The graph shown in Figure 4-2 is a representation of the EPA graph for the West, Southwest, and Midwest using data compiled in this project and summarized in Appendix B, Table B-1 of this report.

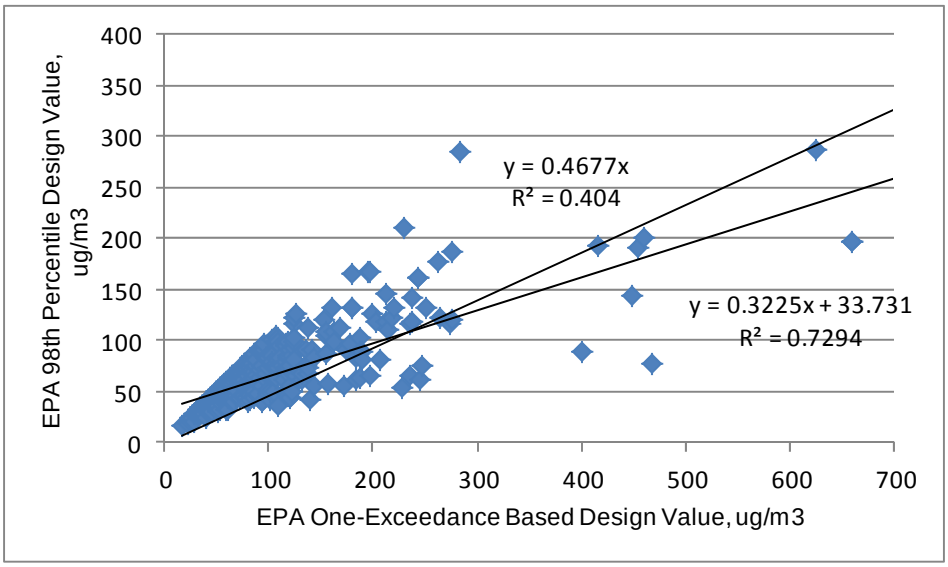


Figure 4-2. Regional analysis of one-exceedance and 98th percentile design values[8] (based on data for the West, Southwest, and Midwest compiled for this project)

The linear regression equation shown in the lower right of the graph is similar to EPA's linear regression line reproduced in Figure 4-1. There is a positive intercept at 33.7 µg/m^3. The correlation coefficient is a modest 0.73. The linear regression line shown in the center of the figure is forced through the origin to avoid the unrealistic positive intercept. The correlation coefficient for this more logical linear regression line is only 0.40—a low value that implies only a very weak relationship.

[8] The scale of the chart has been adjusted for clarity. Several points with a high one-exceedance value are not shown in Figure 4-2. These data points were included in the calculation of the correlation coefficient

The national and regional linear regression analyses, as used by EPA in the Policy Assessment Document (April 2011), simply do not provide a meaningful analysis of a relationship that might exist on a national or regional level between the one-exceedance per year design values and the 98th percentile design values. The analyses should go beyond linear regression analyses.

An approach that is more consistent with EPA's use of design values is summarized in Appendix D. For each monitoring location, the EPA three-year 98th percentile has been compared with the potentially revised NAAQS of 85 μg/m^3. The EPA three-year one-exceedance based value for each monitoring location has also been compared with the existing NAAQS of 150 μg/m^3. The ratio of these two values has then been calculated to determine how the PM_{10} concentrations at each monitoring location compared with the existing and potentially revised NAAQS standard. As indicated in Appendix D, on average, the monitoring locations have design values that are much closer to the potentially revised NAAQS than the existing NAAQS. This indicates that the potentially revised NAAQS of 85 μg/m^3 is more stringent.

4.3. PM_{10}, $PM_{10-2.5}$, and $PM_{2.5}$

EPA continues to use PM_{10} as a surrogate for coarse particulate matter primarily because the ambient monitors capable of directly measuring coarse particulate matter have not yet been widely deployed. PM_{10} poorly represents coarse particulate matter ($PM_{10-2.5}$) because large, well-recognized regional differences exist in the fraction of PM_{10} composed of coarse particulate matter. These regional differences are illustrated in Figure 4-3, which is adapted from Figure 3-4 (page 3-28) in the Policy Assessment Document, (April 2011).[9]

Coarse particulate matter comprises 70% to 80% of the PM_{10} in arid parts of the U.S. In some cases, the coarse particulate matter fraction in these West, Southwest, and Midwest areas approaches 95% of the PM_{10}. Conversely, the data summarized by EPA in the Policy Assessment Document indicate that, in other parts of the U.S., $PM_{2.5}$ comprises most of the PM_{10} particulate matter.

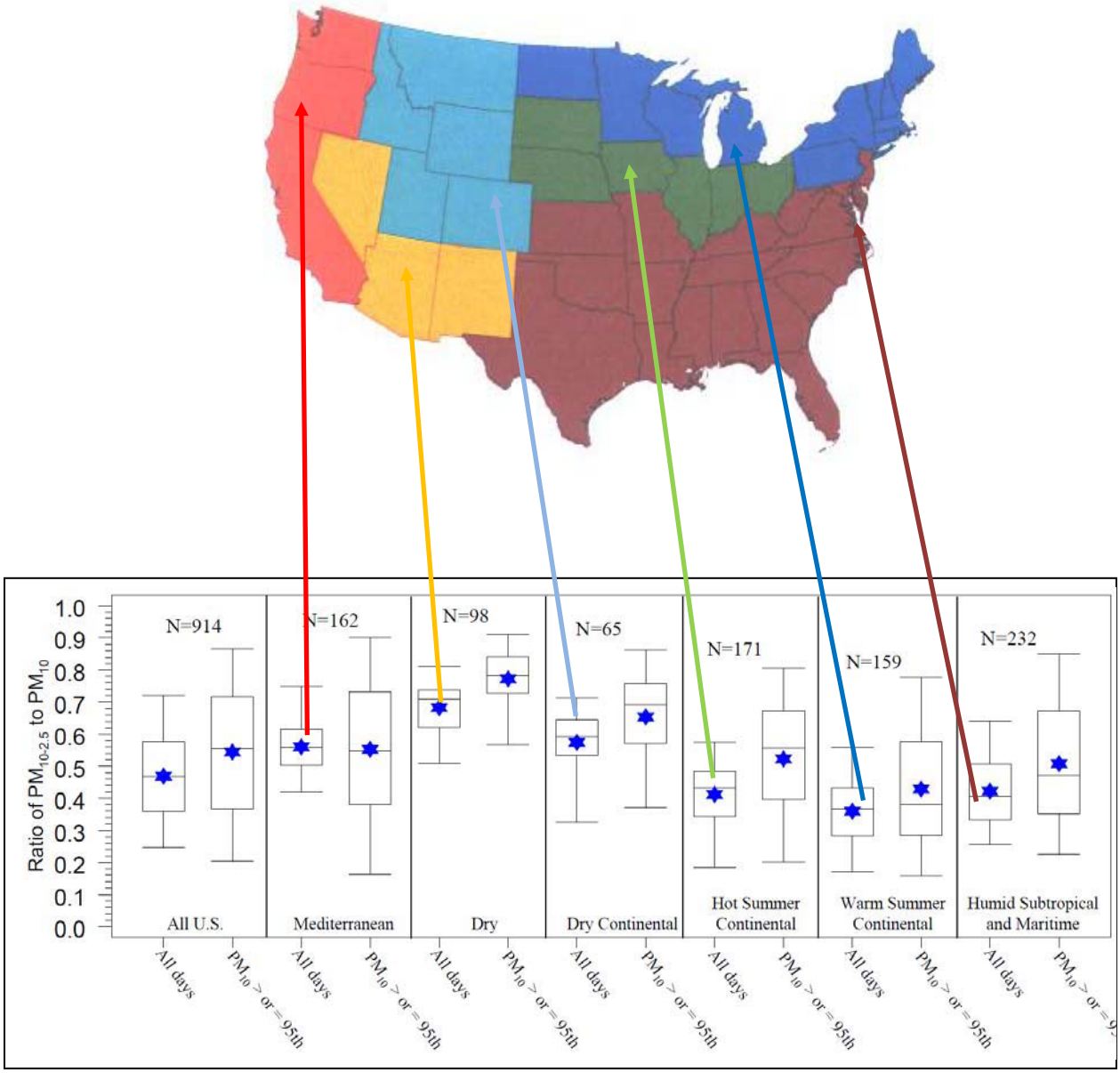
With regard to the data shown in Figure 4-3, EPA stated that,

> .. on average across the U.S., $PM_{10-2.5}$ comprises a larger portion of PM_{10} on days with relatively high PM_{10} concentrations than on days with more typical PM_{10} concentrations. This suggests that elevated PM_{10} concentrations across much of the U.S. are due in large part to elevations in $PM_{10-2.5}$ mass. Given this, we conclude that a PM_{10} standard would be most effective at limiting $PM_{10-2.5}$ concentrations if it focuses on the upper end of the distribution of daily PM_{10} concentrations.

Given the large differences in particulate matter size, it is not clear that EPA is justified in analyzing data "…on average across the U.S…." It is apparent that variations in PM_{10} concentrations are related to particle size. Areas having high coarse particulate matter

[9] The regional definitions used in the reproduced EPA figure are not consistent with the regional definitions used in this report or with regional descriptions in other EPA publications.

concentrations will have much greater spatial nonuniformity of concentrations due to rapid gravity settling, impaction, and other atmospheric deposition processes.



Figures 4-3. $PM_{10}/PM_{2.5}$ ratios[10]
(Adapted from: Policy Assessment Document, April 2011, Page 3-28[11])

[10] EPA states that "Blue stars represent mean concentrations, horizontal lines represent median concentrations, boxes represent 75% confidence intervals, and error bars represent 95% confidence intervals. N values equal the number of site years of monitoring data for each region."

4.4 Within-County PM_{10} Concentration Variations

As part of the Integrated Science Assessment, EPA evaluated the variations in the PM_{10} concentrations in a small number of urban areas in the East and the West. Los Angeles represented the West in these analyses, and EPA found variations of more than a factor of two across Los Angeles County. However, this example understates the possible differences in other less-urbanized areas of the West, Southwest, and Midwest where the PM_{10} concentrations are not dominated by relatively uniformly distributed $PM_{2.5}$ emissions from mobile sources. A far more challenging evaluation would involve urban and nonurban areas where the PM_{10} concentrations are related primarily to fugitive dust emissions. In summarizing these relatively few urban area analyses, EPA stated the following:

> PM_{10} mass concentration has been shown to ***vary as much as a factor of fiv***e [emphasis added] over urban-scale distances of 100 km or less, and by a factor of 2 or more on scales as small as 30 km in an analysis of California air quality (Alexis et al., 2001, 079886). This can be attributed to the rapid Vd and resulting short atmospheric lifetime of the coarse-mode particles making up much of PM10 mass. As a result, local emission sources often dominate PM_{10} annual average mass at certain monitors. Data from the 15 CSAs/CBSAs were used to investigate urban variability in PM_{10} reported to the AQS database. EPA, Integrated Science Assessment, page 3-73

EPA followed-up on this urban area variability analysis using correlations of data from monitors located relatively close. This "neighborhood-scale" evaluation concerned 15 areas, most of which were in the Eastern U.S. The results of the correlations are summarized in Figure 4-4 which is reproduced from Figure 3-40 (page 3-87) of the ISA. Extremely poor correlations are apparent from many sets of PM_{10} monitors located only 4 kilometers apart. In fact, the correlation coefficients for the EPA linear regression lines in Figure 4-4 are only 0.21 and 0.03—values that suggest essentially no relationship between the site-to-site correlations.

This lack of relationships is not surprising considering the well-recognized local impact and short transport distances of the coarse fraction of PM_{10} particulate matter. It is notable that this degree of spatial nonuniformity clearly exists even in parts of the eastern U.S. where coarse particulate matter concentrations are moderate-to-low, and $PM_{2.5}$ concentrations are relatively high.

Information provided in the ISA concerning a study of PM_{10} and $PM_{2.5}$ variability in the Raleigh-Durham area of North Carolina also points to significant differences over short distances. Concerning that study, EPA concluded:

> Neighborhood-scale variability in PM10-2.5 was investigated by Chen et al. (2007, 147318) in the Raleigh/Durham area of NC. The average correlation between 26 residential monitors located throughout the region and a centrally located monitor representing a maximum inter-sampler

[11] The EPA regional breakdown does not match typical climatological conditions. For example, Kansas, Oklahoma, and western Texas are rarely described as "maritime" and the states of California, Oregon, and Washington are rarely described as "Mediterranean."

range of 60 km was found to be 0.75 for PM10-2.5 compared with 0.92 and 0.94 for PM2.5 and PM10, respectively. Based on this study, neighborhood-scale variability is greater for PM10-2.5 than for PM2.5 or PM10, matching the conclusion drawn above on the broader urban-scale.

Even in the partially forested Raleigh-Durham area, there are signs pointing toward significant spatial variability in PM_{10} concentrations.

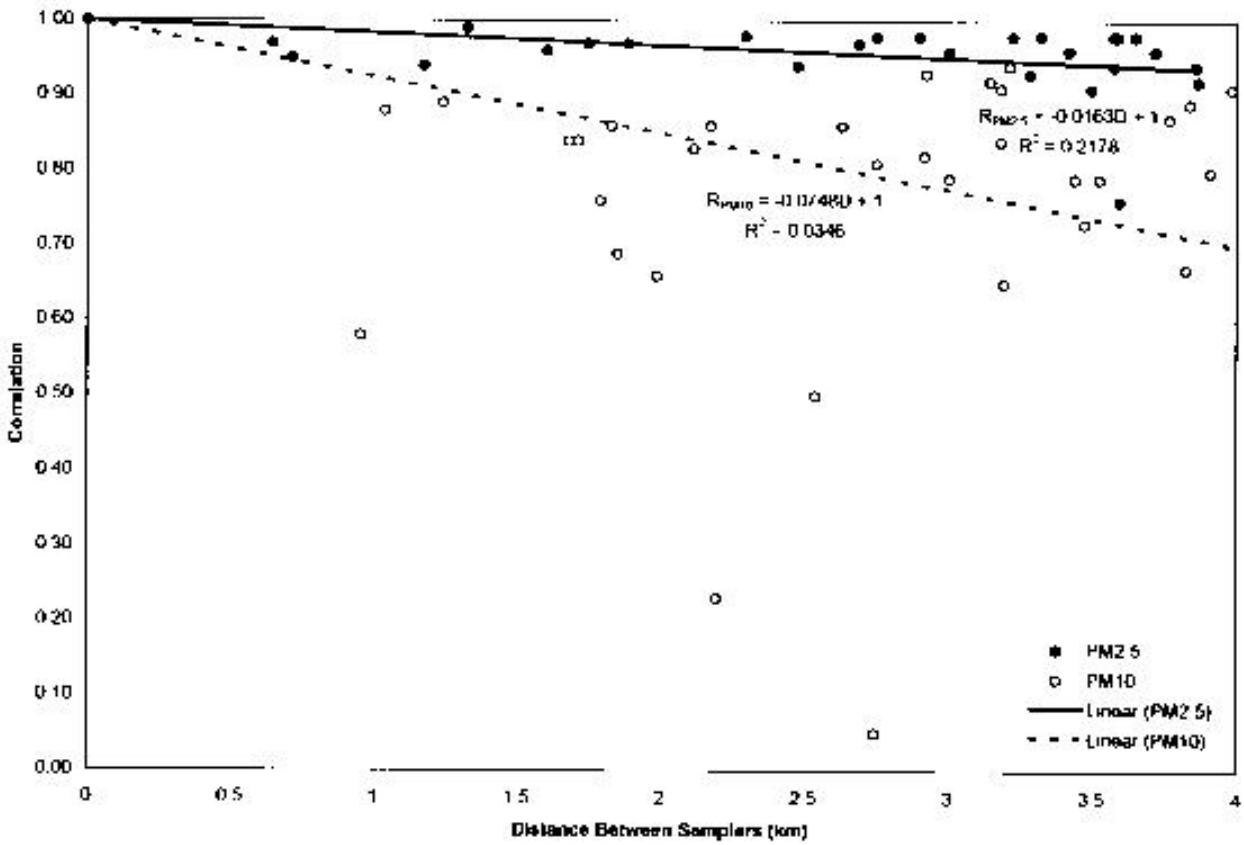


Figure 4-4. Neighborhood-scale site-to-site correlations in PM_{10} air quality

Figure 4-4 is consistent with the conclusion of Watson and Chow that, "Ambient urban dust contributions are often dominated by the presence of, or lack of, emissions from nearby sources."[12] They also state that, "Neighborhood-scale studies show that there may be large differences between dust contributions from monitors separated by no more than 5 km."[13]

[12] Watson, J. and J. Chow. "Reconciling Urban Fugitive Dust Emissions Inventory and Ambient Source Contribution Estimates: Summary of Current Knowledge and Needed Research." DRI Document No. 6110.4F, May 2000, Page 1-2.
[13] Watson J. and J. Chow. "Reconciling Urban Fugitive Dust Emissions Inventory and Ambient Source Contribution Estimates: Summary of Current Knowledge and Needed Research." DRI Document No. 6110.4F, May 2000, Page 2-22

Within-County PM_{10} Variability in the 2009 Data Sets—To evaluate the spatial differences in PM_{10} concentration, Air Control Techniques, P.C. has reviewed variations in the 98th percentile concentrations in the counties with multiple PM_{10} monitors. Tables 4-1 and 4-2 summarize the range in concentrations within these counties during 2009.

In the West, Southwest, and Midwest, the 98th percentile PM_{10} concentrations differed by an average of 49.8 μg/m³. The spatial differences in the Eastern U.S. for the counties reviewed averaged 11.2 μg/m³. This latter value is similar to the spatial differences for eastern urban areas reported in the ISA.

Table 4-1. Within-County Variability in the West, Southwest, and Midwest

State	County Code	Number of Monitoring Sites	PM_{10} Range μg/m³	PM_{10} Difference μg/m³	PM_{10} Standard Deviation, μg/m³
AK	20	7	44 to 88	44	18
AK	170	1	N/A	NA	N/A
AZ	3	3	46 to 83	37	21
AZ	13	24	43 to 122	79	29
AZ	15	1	N/A	N/A	N/A
AZ	19	11	40 to 99	58	19
AZ	21	23	36 to 286	250	67
AZ	25	2	46 to 116	70	17
AZ	27	1	N/A	N/A	N/A
AR	119	3	31 to 123	92	3
CA	9	1	N/A	N/A	N/A
CA	11	2	NA	N/A	NA
CA	19	3	62 to 72	10	5
CA	21	1	NA	NA	NA
CA	23	2	41 to 49	8	5
CA	25	5	117 to 186	71	23
CA	27	15	50 to 284	234	69
CA	29	8	43 to 112	69	27
CA	31	6	83 to 100	17	7
CA	37	11	44 to 78	34	12
CA	51	4	32 to 489	457	218
CA	65	15	42 to 103	61	32
CA	67	9	33 to 74	41	13
CA	71	15	39 to 73	34	11
CA	77	3	39 to 57	18	10
CA	89	3	27 to 36	9	4
CA	93	1	NA	NA	NA
CA	99	2	63 to 65	2	1
CA	105	1	NA	NA	NA
CA	113	2	50 to 55	5	4

Table 4-1 (Continued). Within-County Variability in the West, Southwest, and Midwest					
State	County Code	Number of Monitoring Sites	PM_{10} Range µg/m^3	PM_{10} Difference µg/m^3	PM_{10} Standard Deviation, µg/m^3
CO	3	2	58 to 81	23	16
CO	51	3	45 to 86	31	23
CO	99	2	55 to 90	35	25
CO	107	1	NA	NA	NA
CO	117	1	NA	NA	NA
CO	121	1	NA	NA	NA
ID	1	1	NA	NA	NA
ID	5	3	46 to 82	36	18
ID	77	2	46 to 48	2	1
IA	33	2	48 to 68	20	14
IA	163	4	37 to 96	59	29
IA	177	1	NA	NA	NA
KS	133	1	NA	NA	NA
KS	173	5	41 to 45	4	2
KS	177	2	50 to 74	24	17
KS	181	1	NA	NA	NA
KS	209	3	42 to 49	7	4
MO	510	6	31 to 83	52	24
MT	29	4	37 to 55	18	9
MT	53	1	NA	NA	NA
MT	63	2	34 to 44	10	7
MT	89	1	NA	NA	NA
NE	25	4	42 to 75	33	15
NE	47	2	42 to 65	23	16
NE	55	6	40 to 76	26	13
NV	3	13	30 to 59	29	10
NV	31	7	42 to 89	47	15
NM	1	6	36 to 75	39	17
NM	5	1	NA	NA	NA
NM	13	8	47 to 127	80	25
NM	17	2	28 to 33	5	3
NM	25	1	NA	NA	NA
NM	29	2	36 to 74	38	27
NM	49	1	NA	NA	NA
NM	55	1	NA	NA	NA
ND	15	1	NA	NA	NA
ND	17	1	NA	NA	NA
ND	25	1	NA	NA	NA
ND	53	1	NA	NA	NA
ND	57	1	NA	NA	NA
OK	1	2	29 to 34	5	4

Table 4-1 (Continued). Within-County Variability in the West, Southwest, and Midwest					
State	County Code	Number of Monitoring Sites	PM_{10} Range µg/m^3	PM_{10} Difference µg/m^3	PM_{10} Standard Deviation, µg/m^3
OK	15	2	34 to 35	1	1
OK	109	3	43 to 47	4	2
OK	115	1	NA	NA	NA
OK	143	3	56 to 77	21	11
OR	29	3	43 to 49	6	3
OR	35	1	NA	NA	NA
OR	39	3	37 to 50	13	7
OR	51	5	29 to 43	14	6
OR	59	1	NA	NA	NA
OR	61	1	NA	NA	NA
SD	11	1	NA	NA	NA
SD	13	1	NA	NA	NA
SD	93	1	NA	NA	NA
SD	99	2	NA	0.0	0
SD	103	3	44 to 102	56	30
TX	29	3	37 to 58	21	11
TX	113	3	34 to 53	19	10
TX	141	8	33 to 71	38	14
TX	167	1	NA	NA	NA
TX	201	7	33 to 94	61	21
UT	5	1	NA	NA	NA
UT	11	1	NA	NA	NA
UT	35	5	50 to 96	46	18
UT	49	3	75 to 99	24	14
UT	57	1	NA	NA	NA
WA	5	1	NA	NA	NA
WA	63	3	NA	NA	NA
WA	65	1	NA	NA	NA
WA	71	1	NA	NA	NA
WA	77	1	NA	NA	NA
WY	5	7	21 to 127	106	33
WY	7	4	36 to 63	27	13
WY	9	3	30 to 105	75	38
WY	13	1	NA	NA	NA
WY	21	2	29 to 32	3	2
WY	23	4	21 to 90	69	34
WY	25	2	31 to 40	9	6
			Averages	48.6	

Table 4-2 Within-County Variability in the East					
State	County Code	Number of Monitoring Sites	PM_{10} Range $\mu g/m^3$	PM_{10} Difference $\mu g/m^3$	PM_{10} Standard Deviation, $\mu g/m^3$
DC	1	3	42 to 48	6	3.2
FL	86	2	59 to 65	6	4.2
FL	105	2	28 to 35	7.4	5.2
GA	21	2	44 to 51	7	4.9
GA	121	3	38 to 40	2.0	1.4
IL	31	11	34 to 60	26.0	8.6
IL	119	4	42 to 54	12.0	6.4
IN	127	1	37	0.0	0.0
ME	3	4	47 to 59	12.0	6.1
MI	163	6	36 to 47	11.0	5.2
OH	61	5	31 to 50	19.0	6.8
OH	95	1	58.0	N/A	N/A
OH	99	2	38 to 42	4.0	2.8
PA	3	14	28 to 77	49.0	16.4
PA	7	1	42	N/A	N/A
			Averages	11.2	

The within-county differences summarized in Table 4-1 closely match the climate conditions across the West, Southwest, and Midwest. Areas with low precipitation levels are logically more prone to high fugitive dust emissions from a variety of natural, agricultural, industrial point sources, and anthropogenic area sources than those areas with high precipitation rates.
As indicated in Figure 4-5, large areas west of the Mississippi have annual precipitation totals that are one-half to one-third those east of the Mississippi.

The impact of moisture on fugitive emissions and wildfires is aggravated by the frequent high winds throughout the West, Southwest, and Midwest. These frequent high winds that contribute to fugitive dust related PM_{10} concentration spikes also make this part of the U.S. especially attractive to wind turbines for power generation as indicated in Figure 4-6. Figures 4-5 and 4-6 taken together show that areas with high winds overlap the areas with limited precipitation.

The combination of low moisture and frequent high winds makes the West, Southwest, and Midwest subject to frequent spikes of coarse particulate matter over periods of several hours to days.

Figure 4-5. Annual precipitation (Source: www.nationalatlas.gov)

Due primarily to the meteorology, fugitive dust sources dominate the emission inventories of the West, Southwest, and Midwest. Unvegetated land in arid regions emits large quantities of fugitive dust whenever the wind speeds exceed the threshold velocity for dust reentrainment—wind speeds ranging from 12 to 20 mph. Unpaved public roads, especially those with moderate-to-high travel volumes operated by municipalities, contribute significantly to fugitive dust emissions. Vehicles moving on paved roads resuspend fugitive dust that had covered the road surface. Fugitive dust emissions from tilling and harvesting crops result from disturbances to the soil and the attrition of crop material. In parts of Alaska, glacial till is also a fugitive dust source

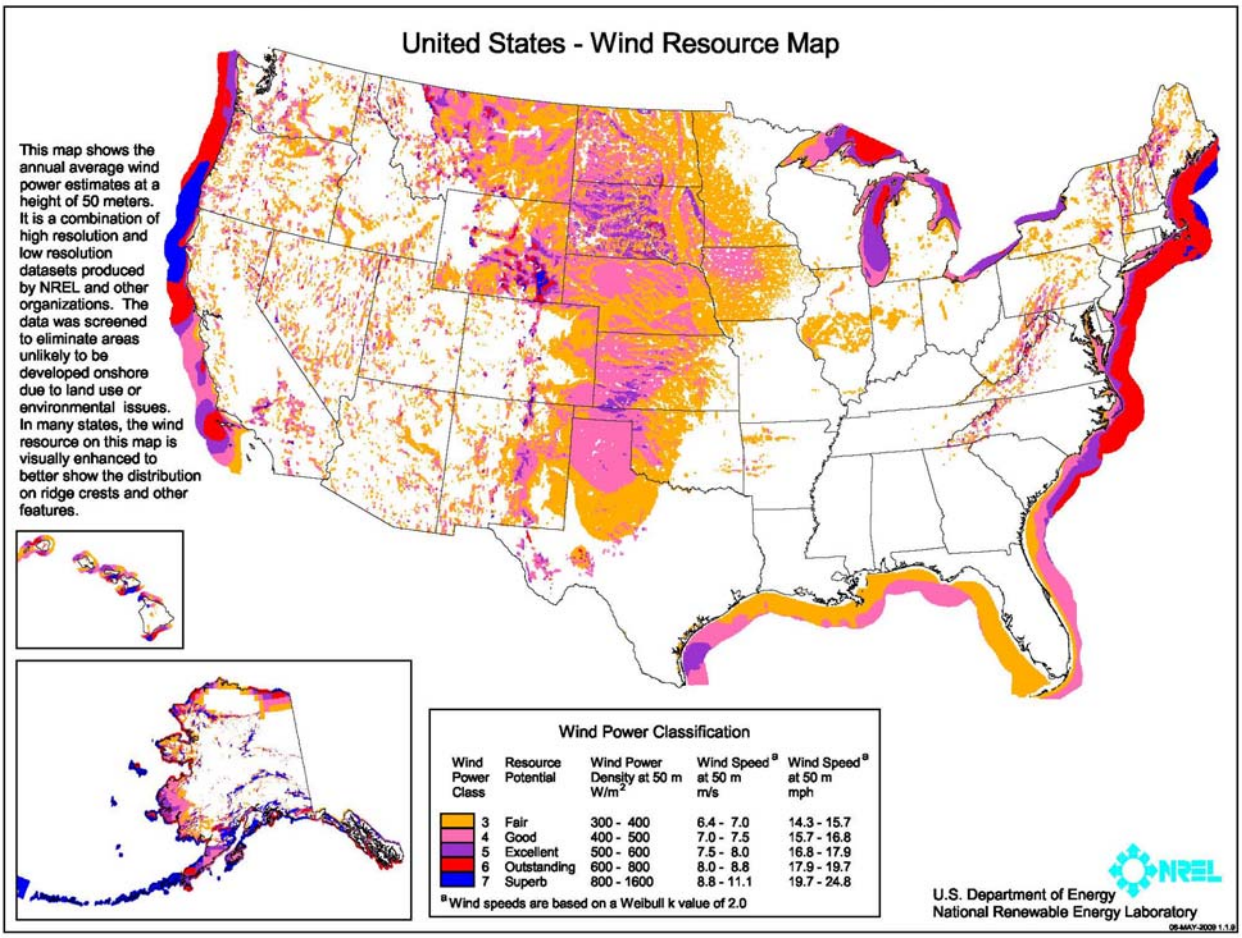


Figure 4-6. Wind resources (Source: U.S. DOE, NREL)

Industrial sources contribute a small fraction of fugitive dust emissions in the West, Southwest, and Midwest. Operators of industrial sources must minimize fugitive dust emissions to comply with in-plant industrial hygiene dust concentration limits and with air quality permit requirements.

Industrial point sources, which dominate emission inventories in the East, South, and coastal Pacific Northwest, contribute relatively little to coarse particulate matter concentrations in West, Southwest, and Midwest. There are localized areas where these sources are important, especially for particulate matter in the $PM_{2.5}$ size range. Sulfur dioxide, nitrogen oxides (NOx), and volatile organic compound (VOC) emissions from these sources react in the atmosphere to form $PM_{2.5}$ particles. Emissions of NOx and VOCs from on-road cars and trucks also participate in atmospheric transformation processes to yield $PM_{2.5}$ particles.

Complete emission inventory data are not available on a regional basis. However, it is clear from the emission inventory compiled by the State of California and summarized in Table 4-3 that fugitive dust sources from a variety of natural, agricultural, and unpaved road sources dominate the emission inventory. Similar emission inventories could be prepared for states such

as Arizona, Idaho, New Mexico, Nevada, and Utah and the arid parts of other states in the West, Southwest, and Midwest.

Table 4-3. PM_{10} and $PM_{2.5}$ Emission Inventory for California, 2008[14]

Source Categories		PM_{10} 1,000Tons per Year	PM_{10} %	$PM_{2.5}$ 1,000 Tons per Year	$PM_{2.5}$ %
Total Stationary Sources	Fuel Combustion	33.7	1.4	31.5	3.5
	Waste Disposal	1.4	0.1	0.7	0.1
	Cleaning and Surface Cleaning	1.2	0.0	1.1	0.1
	Petroleum Processes and Marketing	4.0	0.2	3.4	0.4
	Industrial Processes	121.1	5.1	59.0	6.6
	Total Stationary Sources	**161.4**	**6.8**	**95.7**	**10.7**
Total Areawide Source	Residential Fuel Combustion	113.4	4.8	109.3	12.2
	Farming Operations	163.5	6.9	39.6	4.4
	Construction and Demolition	209.4	8.9	20.9	2.3
	Paved Road Dust	395.5	16.7	59.3	6.6
	Unpaved Road Dust	478.8	20.2	47.8	5.4
	Fugitive Windblown Dust	286.6	12.1	45.2	5.1
	Fires	1.2	0.0	1.1	0.1
	Managed Burning and Disposal	109.6	4.6	100.2	11.2
	Cooking	32.2	1.4	24.5	2.7
	Other Areawide Sources	1.1	0.0	0.6	0.1
	Total Areawide Sources	**1791.1**	**75.7**	**448.6**	**50.3**
Total Mobile Sources	On-Road Vehicles	77.2	3.3	58.0	6.5
	Other Mobile Sources	82.4	3.5	75.2	8.4
	Total Mobile Sources	**159.6**	**6.7**	**133.3**	**14.9**
Total Natural Sources	Natural Sources		0.0		0.0
	Biogenic Sources	-	0.0	-	0.0
	Geogenic Sources	-	0.0	-	0.0
	Wildfires	253.4	10.7	215.0	24.1
	Total Natural Sources	**253.4**	**10.7**	**215.0**	**24.1**
Total Statewide Sources		**2365.4**	**100.0**	**892.5**	**100.0**

Frequent PM_{10} emission spikes are to be expected in the West, Southwest, and Midwest areas with (1) low precipitation rates, (2) frequent high winds, and (3) numerous natural, agricultural, industrial, and area sources. Differences in a 98th percentile concentrations of 40 to 50 $\mu g/m^3$ are expected based on the 2009 PM_{10} data in the notepad-based AQS data.

Due to these differences in PM_{10} concentrations over short distances, the relatively few agency-operated monitors in the West, Southwest, and Midwest provide only a very incomplete assessment of prevailing PM_{10} concentrations and the impact of the potentially revised NAAQS. For example, the PM_{10} monitoring locations in Texas and Utah are illustrated in Figures 4-7 and

[14] Adapted from emission inventory table prepared by the California Air Resources Board and available atwww.arb.ca.gov/app/emsinv/

4-8. PM_{10} monitors are present in only one location in western Texas and are entirely missing in central and southern Utah. It is reasonable to conclude that the 98th percentile concentrations that vary between 40 to 50 μg/m^3 within a county can vary even more hundreds of miles from the nearest PM_{10} monitor.

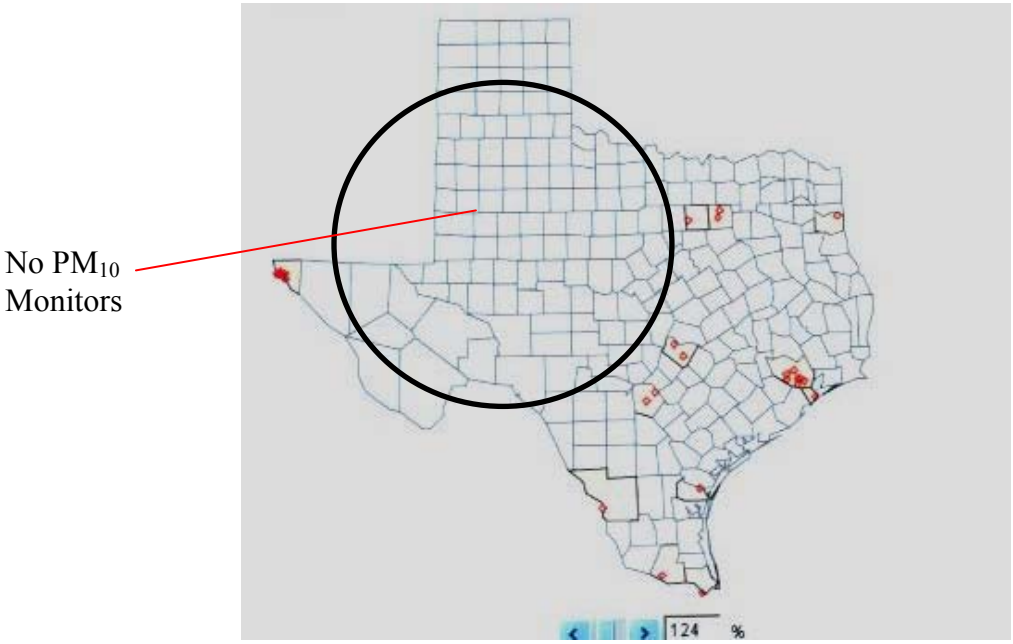


Figure 4-7. PM_{10} monitoring locations in Texas (Source: EPA AQS)

Figure 4-8. PM_{10} monitoring locations in Utah (Source: EPA AQS)

EPA's NAAQS equivalency evaluation in the Policy Assessment Document failed to take these spatial differences into account. Even the more complete data in the ISA fail to highlight this important issue because the authors placed a heavy emphasis on the East and provided only limited analyses directed at the arid, high wind areas in the West, Southwest, and Midwest.

4.5 PM_{10} Spatial Variability

Operators of industrial and agricultural sources do not have the luxury of ignoring PM_{10} concentration spatial variability. While EPA assesses variability over distances of many miles, source operators use dispersion models and ambient monitoring systems that identify variability over distances of less than 300 feet. Regulatory agencies prohibit sources from creating conditions that potentially cause exceedances of the NAAQS at any one location on or beyond their property fencelines or barriers.

The spatial differences in PM_{10} concentrations from area and point sources can be illustrated using the EPA-specified AERMOD dispersion models and hypothetical sources. In the two examples below, Air Control Techniques, P.C. has used meteorological data from a location in California to represent typical wind conditions.

The first example source is an unpaved public road with a light traffic volume. As indicated in Figure 4-9, the road turns 90 degrees. PM_{10} emissions from this road are calculated based on the uncontrolled emission factors presented in EPA AP42 Section 13.2.2.

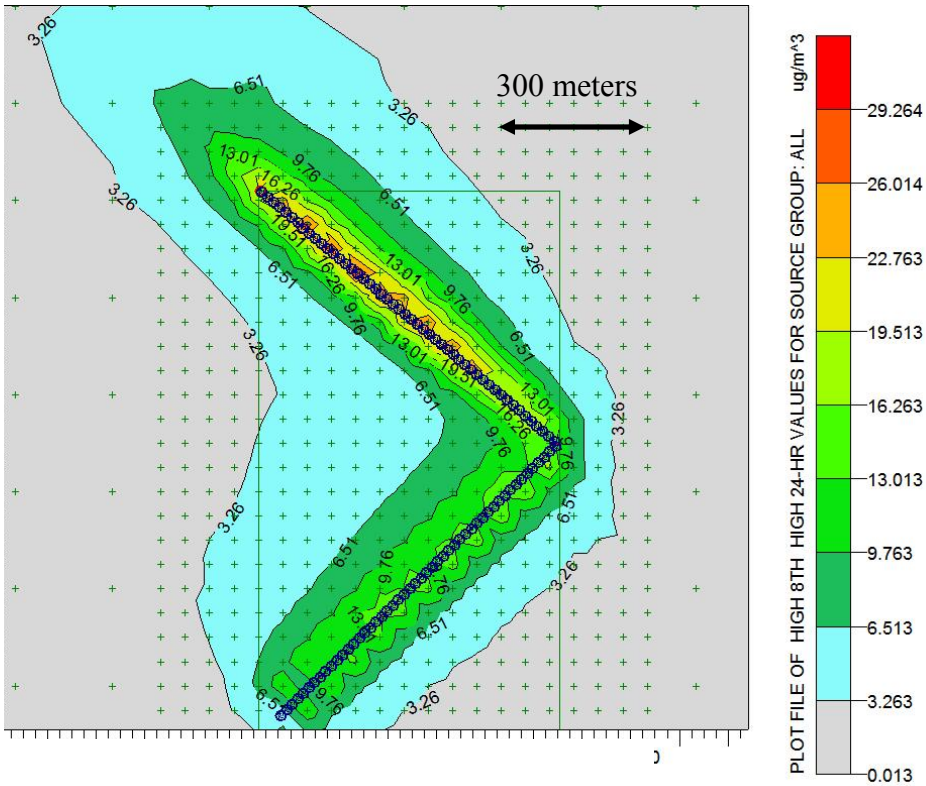


Figure 4-9. Public unpaved road 98th percentile PM_{10} concentration modeling results

Each of the "tic-marks" in Figure 4-9 represents a distance of 50 meters. It is apparent that the predicted PM_{10} impact from car traffic on this road creates differences of approximately 26 $\mu g/m^3$ over distances of 50 to 300 meters. When these concentrations are added to an agency-stipulated background level, exceedances of the NAAQS can be predicted if the property line is close to the edge of the road. A resident living close to this public road could take action against the municipality responsible for the road. Farmers tilling fields close to residences are equally vulnerable to NAAQS compliance issues despite the fact that the PM_{10} air quality in the county as indicated by agency-operated monitors is well below the NAAQS.

It is important to note that the spatial differences in PM_{10} levels are not only due to the rapid deposition of coarse particulate matter. Most fugitive emission sources are at ground level; therefore, dust plumes quickly impact on ground sources. Fugitive emissions of coarse particulate matter have a large impact very close to the source and minimal impact long distances from the source.

The second example source demonstrates the localized impact of point sources, as shown in the AERMOD modeling results in Figure 4-10. This model concerns a single 50 foot high stack in flat terrain. The predicted 98th percentile PM_{10} concentrations vary by a factor of five over distances of less than 1,000 feet.

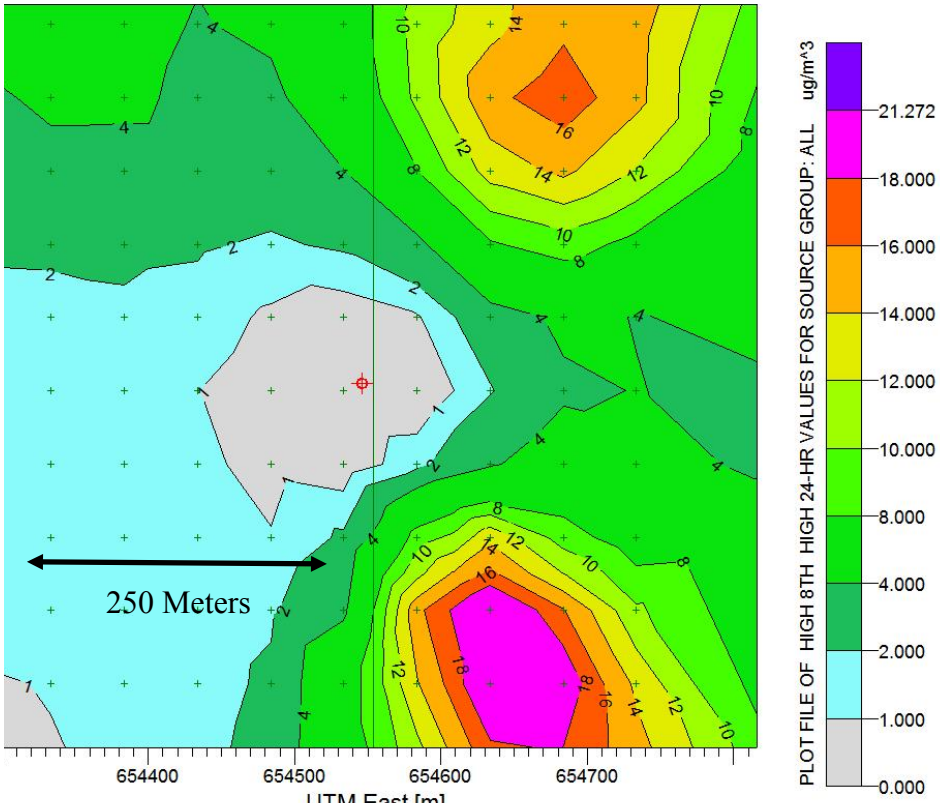


Figure 4-10. Point Source 98th percentile PM_{10} concentration modeling results

The rapid deposition of PM_{10} from a point source is further demonstrated by a study conducted by Air Control Techniques, P.C. at a stone quarry. A single PM_{10} monitor operated upwind of the processing area, and three PM_{10} monitors operated in a line going downwind a distance of 1,500 feet from the center of the processing area. Figure 4-11 illustrates the locations of the monitors.

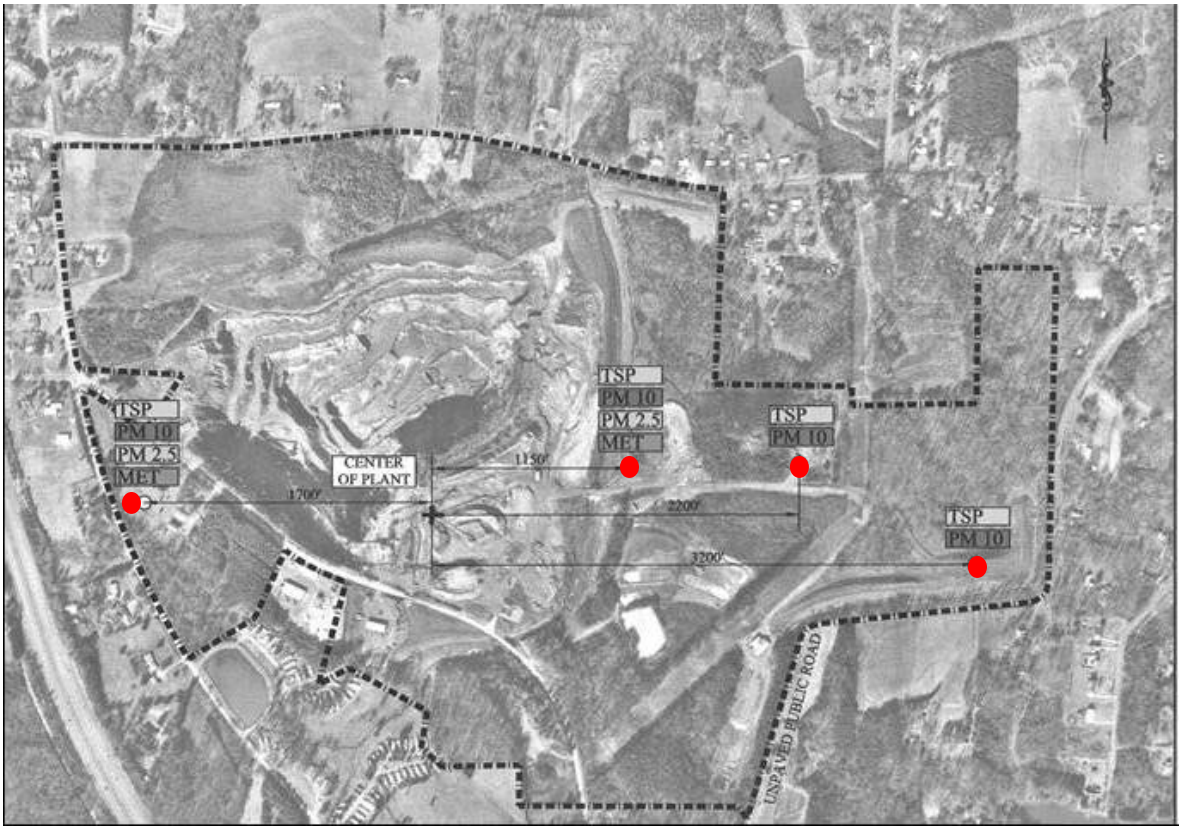


Figure 4-11 Location of Upwind and Downwind TSP, PM_{10}, and $PM_{2.5}$ monitors

Eight-hour PM_{10} concentrations were measured during the operating hours of the plant. The results demonstrate rapid deposition of PM_{10} emitted from the source. As indicated in Figure 4-12, the PM_{10} concentrations in the air mass moving over the facility return to the upwind concentration within 3,000 feet of the center of the processing area. The impact of the facility more than one-half mile downwind is negligible. Nevertheless, if the ambient PM_{10} concentrations determined by a downwind PM_{10} monitor or by a dispersion model indicated exceedances of the NAAQS beyond the property line (dotted line in Figure 4-11), the source would be subject to noncompliance actions.

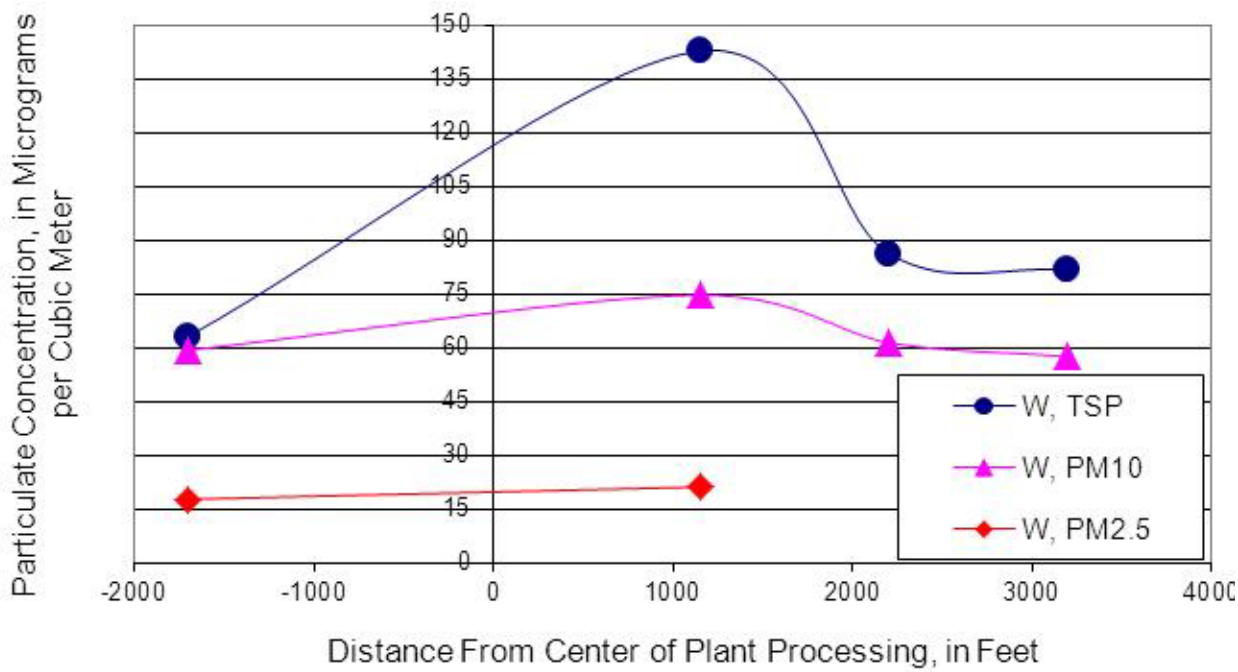


Figure 4-12, Measured PM_{10} concentrations downwind of a stone quarry during constant west winds (cross-plant flow)

The localized impact of fugitive dust sources suggested by the data shown in Figure 4-12 is consistent with the conclusions of Watson and Chow. They state that approximately 90% of the fugitive dust emitted from an unpaved road is removed from the atmosphere as ambient winds travel only 50 meters.[15]

The localized impact of conventional mineral processing facilities in the West is further demonstrated by modeling data provided by Staker & Parson Companies for the Brigham City North Pit and the Maguire Pit. In these modeling programs, the sixth-highest high 24-hour concentrations at the maximum receptor were 44.7 $\mu g/m^3$ for Brigham City and 40.2 $\mu g/m^3$ for Maguire. The PM_{10} background levels (one-exceedance format) specified by Utah DEQ were 96 and 106 $\mu g/m^3$ respectively for Brigham City and Maguire. Even adjusting for changes in the background level expressed as a 98th percentile,[16] it is clear that these localized maximums that are presently in compliance will shift to violation status.

[15] Watson, J. and J. Chow. "Reconciling Urban Fugitive Dust Emissions Inventory and Ambient Source Contribution Estimates: Summary of Current Knowledge and Needed Research." DRI Document No. 6110.4F, May 2000, Pages 4-6 to 4-7.

[16] A comparison of the 99.7% percentile (one-exceedance format) and the 98th percentile format values in Appendix B, Table B-1 indicates that the PM_{10} concentrations for Utah monitoring sites expressed in the 98th percentile are approximately 77% of the one-exceedance format values. Accordingly, the 96 to 106 $\mu g/m^3$ background levels specified by Utah DEQ for these two plants would be approximately 70 to 80 $\mu g/m^3$ if expressed in a 98th percentile format. The modeled impact expressed in a 98th percentile format would have to be less than 5 to 15 $\mu g/m^3$ to avoid violation conditions.

These two facilities have little, if any impact on the agency-operated PM_{10} monitors. The PM_{10} impact is limited to a localized area near the plant fence lines. However, these facilities, which are presently in compliance with the NAAQS, shift to a violation condition under the potentially revised NAAQS. EPA's approach to evaluating the impact of the potentially revised NAAQS is blind to the very important localized variations in PM_{10} air quality.

4.6 Especially Vulnerable Areas of the U.S

Due to the localized impact of PM_{10} emissions, the agency-operated PM_{10} monitors do not provide an adequate indication of localized PM_{10} concentrations near (1) arid, unvegetated land, (2) unpaved roads, and (3) agricultural operations. These localized concentrations can be much higher than the levels measured at an agency-operated PM_{10} monitor.

All parts of the U.S. close to unpaved roads, unvegetated land, and agricultural sources will be vulnerable to localized nonattainment with the potentially revised NAAQS. Arid, high wind areas will be especially vulnerable. These especially vulnerable areas are highlighted in Figure 4-13.

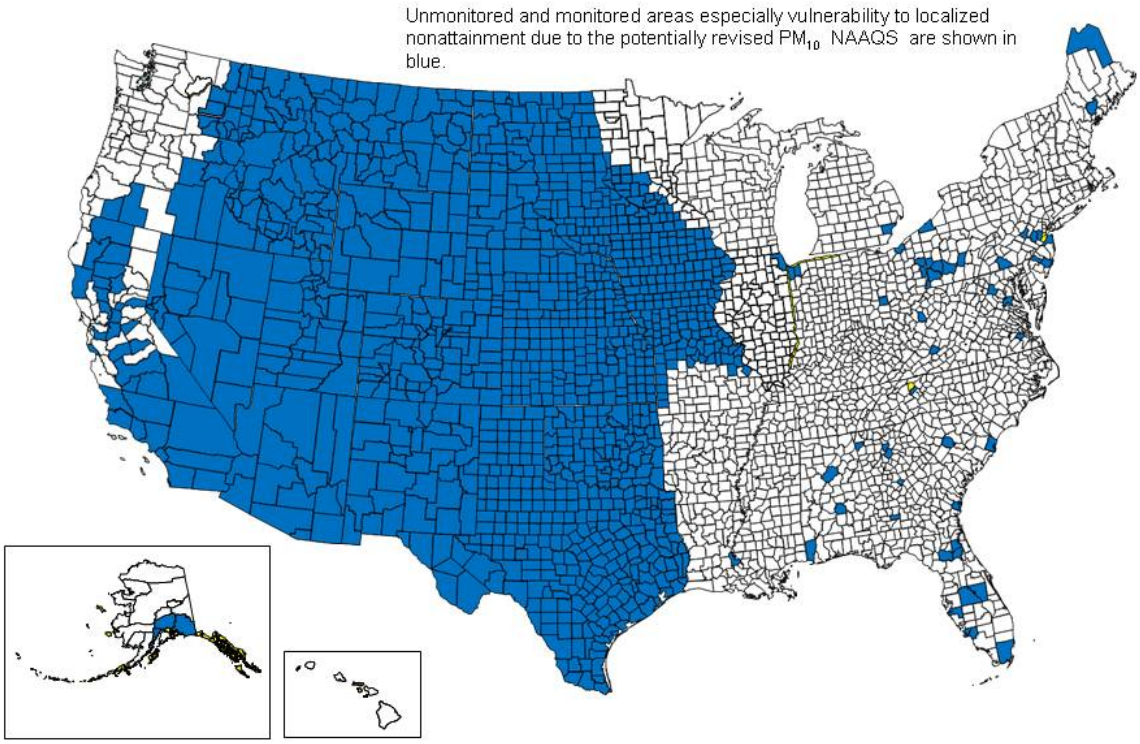


Figure 4-13. Areas especially vulnerable to county-wide or localized nonattainment due to the potentially revised NAAQS

The especially vulnerable areas shown in blue are identified based on geographical areas with (1) low precipitation and frequent high winds, (2) many natural, agricultural, industrial, and area (roads) fugitive dust sources, and (3) prevailing PM_{10} concentrations in most monitored counties approaching or exceeding a 98th percentile concentration of 50 μg/m^3.

This is a conservative assessment that might under-predict PM_{10} concentrations in localized areas near sources. Considering that the within-county 98th percentile concentrations varied by 40 to 50 μg/m^3 in the West, Southwest, and Midwest, it is apparent that sources in the blue highlighted area will be especially vulnerable to NAAQS exceedances at least in the immediate vicinity of their fencelines.

The exceedance issues will become apparent when industrial sources attempt to demonstrate compliance with the potentially revised NAAQS as required by all PSD permits and some state operating and construction permits. Exceedances will likely be indicated when the state-stipulated PM_{10} background levels are added to the dispersion modeling impact levels.

4.7 Exceptional Events

The stringency of the potentially revised NAAQS depends substantially on the ability of state and local agencies to identify and mark PM_{10} concentration spikes as exceptional events. EPA's decision to accept or reject claims of exceptional events also impacts the stringency of the NAAQS.

This review of the 2009 data sets for approximately 450 monitors which is summarized in Appendix B reveals a significant potential issue for addressing PM_{10} concentration spikes due to high winds, wildfires, and other factors beyond reasonable control. As indicated in the notes section of the Appendix B tables, there are many unmarked concentration spikes with a severity equal to those associated with high winds or wildfires. It is possible that the agencies operating these monitors lacked the data needed to identify exceptional events. It is also possible that the reduced resources available to agencies have adversely affected their ability to adequately review these data. If so, many future exceptional event spikes might not be excluded prior to determining the PM_{10} design values for the monitoring site and perhaps the entire county.

Exceptional events affect both agency-operated and source-specific ambient monitors. However, operators of ambient monitors at industrial sources often have greater difficulty in excluding the exceptional event data than the agencies. The regulatory agencies often assume that conditions at the plant have somehow contributed to the PM_{10} concentration spike. Decreasing the coarse PM NAAQS to 85 μg/m^3 on a 98th percentile basis will increase the vulnerability to exceedances during exceptional events beyond the control of the source operator.

4.8 Implications of Sixth-Day Monitoring

During this study, possible issues created by sixth-day monitoring became apparent while comparing 98th percentile concentrations for collocated monitors operating on different sampling frequencies. Many of the monitors providing data for each day of the year indicated higher 98th percentile concentrations than those operating on a sixth day schedule. This issue has also been reported by Gravil, et al, in a study in Greece and by Health Canada.

EPA, State, and local agencies are gradually replacing the aging set of Appendix J-based PM_{10} Hi-Vol samplers with continuously operating units. Accordingly, there will be a gradual shift to more frequent monitoring. If the low-bias associated with sixth-day monitoring is large, this shift in sampler technology will result in higher 98th percentile PM_{10} concentrations. This might cause some additional areas to exceed the NAAQS.

This sixth-day monitoring bias affects the equivalency determination of the potentially revised NAAQS, since it may understate actual PM_{10} concentrations that would be measured by daily monitors. In addition, the bias introduced by sixth-day monitoring could have important implications with respect to the review of epidemiological studies relying entirely, or in-part, on these data. This suggests that the already inconclusive data on adverse health effects from coarse PM was based on inaccurately low estimates of PM_{10} exposure levels – indeed, actual exposure levels may have been significantly higher.

5. AREA NONATTAINMENT IMPACT OF THE POTENTIALLY REVISED NAAQS

On page ES-2 of the Policy Assessment Document (April 2011), EPA has suggested a change in the PM_{10} NAAQS to a value in the range of 65 to 85 μg/m^3 on a 98th percentile basis. EPA staff explains this change as follows:

> To the extent consideration is given to revising the current standard, which has a one-expected-exceedance form and a level of 150 μg/m3, staff concludes that consideration should be given to revising both the form and level. In this case, consideration should be given to a 98th percentile form and a level within the range of 85 μg/m3 down to about 65 μg/m3, in conjunction with retaining the PM10 indicator and the 24-hour averaging time. Staff also concludes that standard levels in the upper part of this range are supported by the strongest evidence.
> Page ES-2, Policy Assessment Document

Air Control Techniques, P.C. has used the three-year PM_{10} design value data supplied by EPA on April 28, 2011 to evaluate the possible impact of these NAAQS changes. The EPA data included three-year design data based on both the existing NAAQS format and the potentially revised format of the 98th percentile.

As indicated in Appendix G, The potentially revised NAAQS set at a limit of 85 μg/m^3 would result in a shift from compliance to violation for 36 monitoring locations in 25 counties or parts of counties in the U.S. and its territories. These counties are listed below.

- Jefferson County, Alabama (one monitor)
- Anchorage County, Alaska (one monitor)
- Maricopa County, Arizona (three monitors)
- Imperial County, California (one monitor)
- Los Angeles, California (two monitors)
- Riverside, California (two monitors)
- San Bernardino County, California (one monitor)
- St. Luis Obispo County, California (one monitor)
- Tulare County, California (one monitor)
- Gunnison County, Colorado (one monitor)
- Mesa County, Colorado (one monitor)
- Scott County, Iowa (one monitor)
- St. Louis County, Missouri (one monitor)
- Big Horn County, Montana (one monitor)
- Douglas County, Nebraska (one monitor)
- Washoe County, Nevada (one monitor)
- Bernalillo County, New Mexico (two monitors)
- Allegheny County, Pennsylvania (one monitor)
- Pennington County, South Dakota (one monitor)

- El Paso County, Texas (one monitor)
- Salt Lake County, Utah (one monitor)
- Campbell County, Wyoming (six monitors)
- Sweetwater County, Wyoming (one monitor)
- St. Croix (one monitor)
- St. Thomas (two monitors)

If the NAAQS level is reduced to 75 μg/m^3, the EPA data suggest that 47 counties or parts of counties will be affected. These areas are similar to those shifting from compliance to violation status at 85 μg/m^3.

If the NAAQS level is reduced to 65 μg/m^3, the EPA data in Appendix G indicate that 147 counties or parts of counties will shift to violation status. Counties shifting to a violation status are primarily in the West, Southwest, and Midwest. The states primarily affected include Arizona, California, Colorado, Montana, Nebraska, Nevada, Utah, and Wyoming.

Relatively few areas that are presenting above the existing NAAQS standard will shift to compliance at a potentially revised NAAQS at 85 μg/m^3. As indicated in Appendix H, a total of 20 monitoring locations located in 15 counties will shift into compliance with the potentially revised NAAQS of 85 μg/m^3. These areas include the following.

- Maricopa County, Arizona (two monitors)
- Pinal County, Arizona (one monitor)
- Inyo County, California (one monitor)
- Kern County, California (one monitor)
- Los Angeles, California (two monitors)
- Riverside County, California (four monitors)
- Ventura County, California (one monitor)
- Yolo County, California (one monitor)
- Alamosa County, Colorado (one monitor)
- Garfield County, Colorado (one monitor)
- Prowers County, Colorado (one monitor)
- Nye County, Nevada (one monitor)
- Dona Ana County, New Mexico (one monitor)
- Tulsa County, Oklahoma (one monitor)
- El Paso County, Texas (one monitor)

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Air Quality Services. "Air Dispersion Modeling Report (Revision B) for Staker & Parson Companies, Brigham City North Pit, Aggregate, Asphalt, and Concrete Plants." September 27, 2005.

Air Quality Services. "Air Dispersion Modeling Report for Staker & Parson Companies, Maguire Pit, Aggregate Plant." June 12, 2006.

Watson, J. and J. Chow. "Reconciling Urban Fugitive Dust Emissions Inventory and Ambient Source Contribution Estimates: Summary of Current Knowledge and Needed Research." DRI Document No. 6110.4F. May 2000.

APPENDIX A

EPA AQS Database State and County Codes

Table A-1. Geographical Scope of the PM_{10} Data Review			
Region	State	Counties[17]	County Names
West	Alaska	20	Anchorage
		170	Matanuska Susitina
	California	9	Calaveras
		11	Colusa
		17	El Dorado
		19	Fresno
		23	Humboldt
		25	Imperial
		27	Inyo
		31	Kings
		37	Los Angeles
		51	Mono
		65	Riverside
		67	Sacramento
		71	San Bernadino
		77	San Joaquin
		89	Shasta
		93	Siskiyou
		105	Trinity
		113	Yolo
	Colorado	3	Alamosa
		51	Gunnison
		99	Powers
		107	Routt
		117	Summit
	Idaho	1	Ada
		5	Bannock
		77	Power
	Montana	29	Flathead
		53	Lincoln
		63	Missoula
		89	Sanders

[17] Appendix A includes the names of the listed counties

Table A-1. (continued) Geographical Scope of the PM_{10} Data Review			
Region	State	Counties[18]	County Names
West (Continued)	Oregon	2	No Data
		9	Columbia
		35	Klamath
		39	Lane
		51	Muttnomah
		59	Umatilla
		61	Union
	Utah	5	Cache
		11	Davis
		35	Salt Lake
		49	Utah
		57	Weber
	Washington	63	Spokane
		65	Stevens
		77	Yakima
	Wyoming	5	Campbell
		7	Carbon
		9	Converse
		13	Fremont
		21	Laramie
		23	Lincoln
		25	Natrona
Southwest	Arizona	3	Cochise
		13	Maricopa
		19	Pima
		21	Pinal
		23	Santa Cruz
		25	Yavapai
		27	Yuma
	Nevada	3	Clark
		31	Washoe
	New Mexico	1	Bernalillo
		5	Chaves
		13	Dona Ana
		17	Grant
		25	Lea
		29	Luna
		49	Sante Fe
		55	Taos

[18] Appendix A includes the names of the listed counties

Table A-1. (continued) Geographical Scope of the PM_{10} Data Review			
Region	State	Counties[19]	County Names
Southwest (Continued)	Texas	29	Bexar
		113	Dallas
		141	El Paso
		167	Galveston
		201	Harris
Midwest	Arkansas	119	Pulaski
	Iowa	33	Cerro Gordo
		163	Scott
	Kansas	177	Sherman
		181	Wyandotte
		209	No Data
	Missouri	510	No Data
	Nebraska	25	Cass
		47	Dawson
		55	Douglas
	North Dakota	15	Burleigh
		17	Cass
		25	Dunn
		53	McKenzie
		57	Mercer
	Oklahoma	1	Adair
		5	Atoka
		109	Oklahoma
		143	Tulsa
	South Dakota	11	Grookings
		13	Brown
		93	Meade
		99	Minnehaha
		103	Pennington
Eastern U.S.	District of Columbia	1	District of Columbia
	Florida	86	Miami-Dade
		105	Polk
	Georgia	21	Bibb
		121	Fulton

[19] Appendix A includes the names of the listed counties

Table A-1. (continued) Geographical Scope of the PM_{10} Data Review			
Region	State	Counties[20]	County Names
Eastern U.S. (Continued)	Illinois	31	Cook
		119	Madison
	Indiana	127	Porter
	Maine	3	Aroostook
	Michigan	163	Wayne
	Ohio	61	Hamilton
		95	Lucas
		99	Mahoning
	Pennsylvania	3	Allegheny
		7	Beaver

[20] Appendix A includes the names of the listed counties

APPENDIX B

2009 PM_{10} 98th and 99.7% Percentile Values

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AK	20	18	3	1	52	53	43	44	ND	65	None	88.0	44.0	44.0
AK	20	18	3	1	119	123	50	50	52		Unmarked Spikes, Partial Days, Extended Periods of Low Values			
AK	20	44	1	1	91	93	85	88	88	85	None			
AK	20	44	2	1	84	86	71	86	ND	85	None			
AK	20	52	3	1	117	121	54	54	54		Clock Problem, Wildfires , Negative Values			
AK	20	1004	1	1	50	50	49	50	ND		None			
AK	20	1004	3	1	132	137	66	67	66	65	Negative Values, Partial days, High Winds, Wildfires			
AK	170	8	1	1	32	33	29	33	33		None	33.0	33.0	N/A
AZ	3	11	1	1	47	50	46	46	46		None	83.0	46.0	37.0
AZ	3	11	2	1	52	53	48	48	ND		None			
AZ	3	1005	1	1	95	97	83	83	83	85	None			
AZ	13	19	1	1	119	119	85	85	84	75	None			
AZ	13	1003	1	1	84	88	66	66	65	65	None			
AZ	13	1004	1	1	69	69	64	67	66	65	None			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AZ	13	2001	1	1	149	197	64	66	66	65	High Winds (Once), Shift in Sampling Frequency (Last Quarter)			
AZ	13	3002	4	1	92	135	87	92	90	85	Unmarked Spikes, Uncorrected Negative Values			
AZ	13	3003	1	1	124	135	71	76	75	75	Unmarked Spike			
AZ	13	3010	1	1	124	124	97	98	97	85	High Wind (Once), Partial Days, Unmarked Spikes			
AZ	13	4003	1	1	169	169	112	112	111	85	High Winds (Twice), Uncorrected Negatives, Unmarked Spike			
AZ	13	4004	1	1	206	221	76	132	132	85	High Winds, Twice			
AZ	13	4006	1	1	175	178	94	96	96	85	High Winds, Very High Impact, Twice, Partial Days,	146	43	103

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AZ	13	4009	1	1	213	213	145	146	145	85	High Winds (Four Periods)--High Impact, Unmarked Spikes			
AZ	13	4010	1	1	158	228	54	54	53		Sampling Frequency Change			
AZ	13	4011	1	1	379	401	88	88	87	85	HIgh Winds, High Impact, Unmarked Spikes			
AZ	13	5100	1	1	72	78	43	43	43		None			
AZ	13	5100	2	1	72	77	45	46	ND		None			
AZ	13	7020	1	1	217	238	116	119	119	85	High Wind (Once)			
AZ	13	7020	2	1	241	264	120	122	ND	85	High Wind (Once)			
AZ	13	7022	1	1	124	124	118	122	122	85	Unmarked Spikes			
AZ	13	7024	1	1	147	155	105	108	108	85	Unmarked Spikes			
AZ	13	8006	1	1	196	213	114	119	118	85	Unmarked Spike			
AZ	13	9812	1	1	161	162	108	109	108	85	High Winds, High Impact, Partial Days, Unmarked Spikes			
AZ	13	9997	1	1	59	59	57	59	ND		6 Months Only			
AZ	13	9997	3	1	105	107	63	64	63					
AZ	19	1	3	1	136	154	79	86	77	85	High Winds, High Impact, Unmarked Spikes, Partial			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AZ	19	8	1	1	79	85	50	52	52		None	99	40	59
AZ	19	11	2	1	97	97	60	61	61		High Wind (Once)			
AZ	19	20	1	1	105	106	98	99	99	85	High Wind (Twice)			
AZ	19	1001	1	1	125	127	64	65	65		High Wind (Once)			
AZ	19	1009	1	1	80	81	71	75	75	65	Unmarked Spike			
AZ	19	1018	1	1	90	101	39	41	41					
AZ	19	1023	1	1	64	67	51	52	52		Unmarked Spike			
AZ	19	1026	1	1	82	90	47	48	48		QAPP Issues			
AZ	19	1030	1	1	79	80	40	40	40		Clock Problem, Unmarked Spikes			
AZ	19	1113	1	1	124	124	66	67	66	65	High Winds, High Impact, Unmarked Spikes			
AZ	21	1	1	1	107	109	96	99	109	65	Unmarked Spike			
AZ	21	1	3	1	263	274	113	116	ND	85	High WInds (Four), High Impact, Unmarked Spikes,			
AZ	21	3002	1	1	51	54	38	38	38		None			
AZ	21	3004	1	1	172	189	84	88	88	85	High WInd			
AZ	21	3006	1	1	41	42	34	36	36		None			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AZ	21	3007	1	1	51	51	48	49	49		None	286.0	36.0	250.0
AZ	21	3008	1	1	116	121	90	91	ND		None			
AZ	21	3008	3	1	629	661	192	197	169		None			
AZ	21	3009	3	1	179	180	128	131	131		None			
AZ	21	3010	3	1	54	454	108	191	205	85	High Winds (Many)--High Impact, Many Unmarked Spikes			
AZ	21	3011	1	1	177	179	161	165	179	85	High Wind (Two)--High Impact			
AZ	21	3011	2	1	172	187	99	102	ND	85	High Wind (Twice), Unmarked Spike			
AZ	21	3011	3	1	879	887	206	214	ND	85	High Winds (Many)--Very High Impact, Many Unmarked Spikes--some close to High Wind Days			
AZ	21	3012	1	1	51	51	48	49	49		None			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AZ	21	3013	1	1	227	230	208	210	ND	85	Many Unmarked Spikes			
AZ	21	3013	3	1	615	626	283	286	286	85	High Wind (Many)--Very High Impact, Many Unmarked Spikes (Good Example)--Many Days			
AZ	21	3014	1	1	147	153	114	120	120	85	Unmarked Spikes			
AZ	21	7004	1	1	86	88	81	81	82	75	None			
AZ	21	7004	2	1	173	190	81	81	82	75	High WInd (Once)			
AZ	23	4	1	1	123	124	115	116	ND	85	Unmarked Spikes			
AZ	23	4	3	1	203	238	138	141	135	85	Very Frequent and Severe Midnight Spikes, Many "Other" Codes	141	58	83
AZ	25	2002	1	1	60	60	56	58	57		None			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
AZ	27	4	3	1	219	219	119	123	123	85	High Winds (Many)--High Impact, Many Unmarked Spikes--some associated with High Winds, Partial Days, Negatives Coded as Valid			
AR	119	7	1	1	40	42	30	31	30		None	36	31	6
AR	119	7	2	1	40	42	30	31	ND		None			
AR	119	1007	1	1	47	49	36	36	42		None			
CA	9	1	1	1	26	26	24	25	24		High Wind, No Impact	25	25	N/A
CA	11	7	1	1	None	None	None	None	ND		Highly Flawed Data, Zeros for Three Months, 2.1 For Six Months	54	54	N/A
CA	11	1002	2	1		57	54	54	54		None			
CA	17	10	1	1	16	16	15	16	15		Little Data, High Winds--No Impact	72	16	56
CA	19	7	1	1	82	84	71	72	71	65	None			
CA	19	8	1	1	71	72	67	68	67	65	High Wind--No Impact			
CA	19	5001	1	1	62	62	62	62	62		High Wind--No Impact			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	21	3	1	1	71	71	65	70	70	65	High Wind--No Impact	50.0	70.3	N/A
CA	23	1002	2	1	53	55	46	49	48		None	49	41	7
CA	23	1004	1	1	43	44	41	41	41		None			
CA	25	5	1	1	260	276	181	186	186	85	High Winds (Many), Unmarked Spikes	186	117	69
CA	25	7	1	1	191	196	165	168	167	85	High Winds, Unmarked Spikes			
CA	25	1003	1	1	228	243	157	161	161	85	High Winds (IJ)--High Impact			
CA	25	4003	1	1	156	161	129	133	132	85	High Winds (Many)--High Impact			
CA	25	4004	1	1	187	202	115	117	117	85	High Wind (Many)--High Impact			
CA	27	2	1	1	74	81	50	50	50		Extended Periods of Zeros and Very Low Concentrations, Data Stops in Mid-October			
CA	27	4	4	1	181	184	61	61	61		Unmarked Spike, Validated But Not Explained Spikes			
CA	27	21	2	1	234	246	61	62	62		Spikes Validated But Not Explained			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	27	22	2	1	436	449	143	144	144	85	Validated Spikes But Not Explained, Unmarked Spikes	284.0	50.0	234.0
CA	27	24	2	1	250	251	131	132	132	85	Validated Spike, But Not Explained, Unmarked Spikes			
CA	27	25	2	1	242	248	74	75	75	65	Validated Spikes, But Not Explained, Unmarked			
CA	27	26	1	1	456	469	75	78	78	75	Validated Spikes, But Not Explained, Unmarked Spikes			
CA	27	28	1	1	270	275	116	120	120	85	Validated Spikes, But Not Explained, Unmarked Spikes			
CA	27	29	1	1	415	416	189	192	192	85	Validated Spike, But Not Explained, Unmarked Spike			
CA	27	1001	4	1	115	116	71	71	71	65	Validated Spikes, But Not Explained, Unmarked Spikes			
CA	27	1003	4	1	235	235	114	116	116	85	Validated Spikes, But Not Explained, Unmarked Spikes			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	27	1003	6	1	458	460	195	201	ND	85	Validated Spikes, But Not Explained			
CA	27	1003	7	1	281	284	265	284	ND	85	Validated Spikes, But Not Explained, Few Data			
CA	27	1018	4	1	ND	ND	ND	ND			Clock Problems, Skipped			
CA	27	1023	4	1	ND	ND	ND	ND	ND	65	Six Months of Data Missing, Unmarked Spikes, Partial Days, Negatives Uncorrected			
CA	29	10	1	1	133	138	110	112	96	85	Unmarked Spikes			
CA	29	10	3	1	115	117	79	79	ND	75	High Winds, Unmarked Spikes (Many), Partial Days (Many)			
CA	29	11	1	1	27	68	27	46	45		Wildfire, High Wind--No Impact			
CA	29	14	1	1	93	94	90	90	90	85	None	112	43	69
CA	29	14	2	1	94	95	90	90	ND	85	None			
CA	29	15	1	1	46	46	44	45	45		Wildfires, High Wind--No Impact			
CA	29	17	1	1	43	43	42	43	42		Wildfires--No Impact, Winds--No Impact			
CA	29	232	2	1	114	118	97	98	98	85	Unmarked Spike			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	31	4	1	1	112	118	82	83	ND	75	Unmarked Spike	100	83	17
CA	31	4	3	1	115	122	84	86	ND	85	Unmarked Spike			
CA	31	4	4	1	85	86	82	83	ND	75	None			
CA	31	4	7	1	110	110	94	94	91	85	High Wind, Unmarked Spikes, Partial Days			
CA	31	500	1	1	99	101	86	87	86	85	None			
CA	31	1004	1	1	102	103	96	100	99	85	Unmarked Spike			
CA	37	2	2	1	73	74	65	65	65		Missing Days	78.0	44.0	34.0
CA	37	16	3	1	78	94	53	56	48		Unmarked Spikes, Partial Days, Extended Periods of Low Values			
CA	37	1002	2	1	79	80	74	76	91	75	None			
CA	37	1103	2	1	70	72	61	62	ND		None			
CA	37	1103	3	1	117	119	74	74	72	65				
CA	37	4002	2	1	61	62	56	56	55		None			
CA	37	4002	5	1	ND	ND	ND	ND	ND		Seven Months Missing, Partial Days (Many)			
CA	37	4004	2	1	82	83	76	78	78	75	None			
CA	37	5005	1	1	51	52	45	46	46		None			
CA	37	6012	1	1	54	56	45	45	45		None			
CA	37	9033	1	1	60	60	56	58	ND		None			
CA	37	9033	2	1	58.0	58.0	44.0	44.0	48.0		One Month at Non-Credible Low Values, Unmarked Spikes			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	51	1	5	1	101	118	67	68	66	65	None	489.0	32.0	457.0
CA	51	1	6	1	104	104	62	62	ND		None			
CA	51	5	3	1	47	51	30	32	32		None			
CA	51	11	3	1	1411	1414	486	489	489	85	Validated Spikes, But Not Explained, Unmarked Spikes (Many), Extended Periods of Low, Non-Credible Values			
CA	65	3	1	1	77	79	68	68	68	65	None			
CA	65	4	3	1	75	86	69	70	68	65	Unmarked Spikes (Many), Partial Days	178.0	42.0	136.0
CA	65	12	1	1	90	99	48	48	48		None			
CA	65	1999	1	1	261	262	177	178	175	85	Tilling, Construction, High WInds (Many), Off-Scale (Many), Unmarked Spikes (Many), Partial Days (Many)			
CA	65	2002	2	1	114	132	64	68	ND	65	Unmarked Spike			
CA	65	2002	3	1	144	144	83	83	81	85	High Winds, Unmarked Excursions, Extended Periods of Zero Vaues			
CA	65	2002	4	1	116	124	76	81	71	75	Unmarked Spike			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	65	5001	2	1	124	140	42	42			Unmarked Spike			
CA	65	5001	3	1	103	117	70	72		65	Unmarked Spikes, Partial Days			
CA	65	6001	1	1	78	80	65	66	66	65	None			
CA	65	8001	2	1	77	77	75	75	73	65	None			
CA	65	8001	4	1	71	72	67	68	ND	65	None			
CA	65	8001	5	1	78	78	70	70	ND	65	Unmarked Spike			
CA	65	8005	1	1	107	108	99	103	103	85	Unmarked Spikes			
CA	65	9001	3	1	58	58	49	49	49		None			
CA	67	2	1	1	33	33	33	33	33		None			
CA	67	6	1	1	43	45	35	35	33		None			
CA	67	6	2	1	43	45	35	35	ND		None			
CA	67	6	3	1	38	39	33	33	ND		None			
CA	67	10	1	1	47	48	40	41	41		High Wind, Other	74.0	33.0	41.0
CA	67	14	1	1	47	48	42	43	43		None			
CA	67	284	1	1	75	76	69	74	74	65	None			
CA	67	4001	2	1	43	45	33	33	ND		None			
CA	67	4001	3	1	41	41	38	38	38		Partial Days			
CA	71	1	2	1	74	76	62	65	65		None			
CA	71	5	1	1	55	57	44	57	57		None			
CA	71	13	1	1	83	93	39	39	39		None			
CA	71	25	1	1	69	70	63	65	65		Nonte			
CA	71	25	2	1	69	70	63	64	ND		None			
CA	71	306	1	1	52	53	48	49	ND		None			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	71	306	2	1	127	131	61	61	58		High WInds, Unmarked Spikes (Many), Partial Days	73.0	32.0	41.0
CA	71	1004	3	1	57	58	46	46	45		None			
CA	71	1234	1	1	55	60	32	32	ND		High Wind (Once), Very Low Values for Two Days			
CA	71	1234	2	1	104	187	62	63	60		Unmarked Spikes, Low Values for Extended Periods			
CA	71	2002	2	1	75	75	72	73	73	65	None			
CA	71	4001	1	1	68	68	63	67	67	65	None			
CA	71	4003	1	1	52	52	51	51	51		None			
CA	71	9004	2	1	66	66	63	63	ND		None			
CA	71	9004	3	1	65	65	56	57	58		None			
CA	77	1002	2	1		59	56	57	57		None	57	39	18
CA	77	3005	3	1	50	50	38	39	38		Unmarked Spikes, Partial Days, Extended Periods at Low Concentration			
CA	77	3010	1	1	58	62	43	43	43		High Wind-No Impact			
CA	89	4	2	1	33	34	31	32	31		None	36	27	9
CA	89	7	1	1	38	38	36	36	35		None			
CA	89	8	1	1	31	32	27	27	27		Wildfire			
CA	93	2001	2	1	33	33	28	30	29		Wildfire	30	30	N/A

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
CA	99	5	3	1	65	66	64	65	64	5	Code for "Other"	65	63	2
CA	99	6	1	1	64	65	62	63	62		None			
CA	105	2	1	1	58	59	50	53	52		Wildfire	53	53	N/A
CA	113	1003	1	1	63	65	54	55	54		Wildfire--No Impact, high winds--No Impact	55	50	5
CA	113	2001	1	1	55	56	48	50	49		Wildfire--No Impact, High Winds--No Impact			
CO	3	1	1	1	137	207	78	81	81	75	High Wind (Once), Unmarked Spike	81	58	23
CO	3	3	1	1	112	157	58	58	58		High Wind (Once), Unmarked Spikes			
CO	51	4	2	1	93	99	81	83	83	75	None	86	45	41
CO	51	4	3	1	100	103	82	86	ND	85	Unmarked Spike			
CO	51	7	1	1	81	81	43	45	45		Unmarked Spike			
CO	99	1	2	1	174	174	88	90	90	85	High Winds (Twice), Unmarked Spikes (Many)	90	55	35
CO	99	2	2	1	171	173	55	55	ND		High Winds (Twice), Unmarked Spikes (Many)			
CO	107	3	2	1	82	82	73	73	74	65	None	73	73	N/A
CO	117	2	1	1	80	101	48	49	49		None	49	49	N/A
CO	121	48	1	1	43.6	43.8	39.3	40	ND		None	40	40	N/A

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
ID	1	9	3	1	72	119	46	46	48		Unmarked Spikes, Partial Days	46	46	N/A
ID	5	15	1	1	77	82	48	82	ND	75	None, Stops in Sept	82	46	36
ID	5	15	3	1	155	236	64	65	64	65	High Wind, Unmarked Spike, Negative Values Uncorrected			
ID	5	20	1	1	48	49	46	46	46		None			
ID	77	11	1	1	56	59	46	46	ND		None	48	46	Collocated
ID	77	11	2	1	55	57	48	48	52		None			
IA	33	18	1	1	95	97	68	68	68	65	None	68	48	20
IA	33	20	2	1	54	55	47	48	48		None			
IA	163	15	1	1	42	42	37	37	37		None	96	34	62
IA	163	17	2	1	115	116	96	96	96	85	None			
IA	163	18	1	1	40	40	34	34	34		None			
IA	163	19	2	1	62	72	43	44	44		None			
IA	177	6	1	1	44	47	34	35	35		None	35	35	N/A
KS	133	2	2	1	51	53	41	42	42		None	42	42	N/A
KS	173	8	2	1	50	51	41	41	40		Prescribed Fire	45	41	4
KS	173	9	1	1	50	56	40	41	39		Prescribed Fire			
KS	173	10	1	1	52	52	44	44	43		Prescribed Burn, Extended Period of Zero Values			
KS	173	1012	1	1	46	67	42	42	41		Prescribed Fire, Partial Day			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
KS	173	1012	3	1	52	54	45	45	ND		Prescribed Fire			
KS	177	13	1	1	52	52	49	50	ND		None	74	50	24
KS	177	13	2	1	77	77	72	74	67	65	Unmarked Spike			
KS	181	1	1	1	73	76	56	56	56		None	56	56	N/A
KS	209	15	1	1	53	54	47	47	47		None	49	42	7
KS	209	21	1	1	53	56	41	42	41		None			
KS	209	21	2	1	53	54	47	49	ND		None			
MO	510	85	1	1	41	43	30	30	30		None	83	30	53
MO	510	85	2	1	41	43	34	34	ND		None			
MO	510	86	1	1	40	42	31	31	31		None			
MO	510	87	1	1	40	40	37	40	40		None			
MO	510	88	1	1	99	100	74	74	74	75	Unmarked Spikes, Partial Days, Negative Values Uncorrected			
MO	510	93	1	1	96	97	82	83	82	75	Unmarked Spikes			
MT	29	7	1	1	44	45	40	40	40		None	55	37	18
MT	29	7	2	1	41	42	37	37	ND		None			
MT	29	9	2	1	66	69	51	52	52		Wildfire			
MT	29	47	2	1	57	58	54	55	55		Wildfires			
MT	53	18	1	1	48	48	42	44	42		Wildfires	44	44	N/A
MT	63	21	1	1	43	46	34	34	34		Wildfires	44	19	25
MT	63	24	6	1	63	64	44	44	44		Wildfires			
MT	89	7	1	1	22	23	19	19	19		Wildfire			
NE	25	2	1	1	48	49	45	45	45		None			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
NE	25	2	2	1	44	45	40	42	ND		None	75	42	33
NE	25	8	1	1	57	57	46	46	46		Partial Days, Negative Values Uncorrected			
NE	25	9	1	1	112	114	74	75	73	65	Unmarked Spikes (Many), Negative Values Uncorrected (Many), Partial Days (Many)			
NE	47	1	1	1	75	82	42	42	42		None	65.4	42.4	23.0
NE	47	3	1	1	69	69	62	65	65	65	None			
NE	55	28	1	1	47	48	45	46	45		None	76	40	37
NE	55	40	1	1	47	49	39	40	39		None			
NE	55	44	1	1	49	50	44	44	44		None			
NE	55	45	1	1	93	93	76	76	75	75	Unmarked Spikes (Many)			
NE	55	54	1	1	53	53	52	52	ND		None			
NE	55	54	2	1	49	50	49	50	52		Very Few Samples			
NV	3	20	1	1	58	66	57	59	58		Unmarked Spikes			
NV	3	22	1	1	82	83	58	58	58		Unmarked Spikes, Partial Days			
NV	3	23	1	1	121	121	55	55	54		Unmarked Spikes (Many)			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
NV	3	43	1	1	66	67	40	40	40		Clock Problem, Unmarked Spikes, Extended Periods of Low Values	59	30	29
NV	3	72	1	1	51	51	36	36	36		Unmarked Spikes, Extended Periods of Low Values			
NV	3	73	1	1	52	52	30	30	29		Unmarked Spikes, Extended Periods of Low Values			
NV	3	75	1	1	84	85	51	51	51		Unmarked Spikes			
NV	3	298	1	1	ND	ND	ND	ND	ND		Clock Problems, Skipped			
NV	3	561	1	1	82	82	58	58	58		Unmarked Spikes (Many)			
NV	3	601	1	1	65	85	43	43	42		Unmarked Spikes (Many), Missing December			
NV	3	1019	1	1	ND	ND	ND	ND	ND		Clock Problems, Skipped			
NV	3	1021	1	1	75	75	44	45	44		None			
NV	3	2002	1	1	74	74	56	56	56		Unmarked Spikes			
NV	31	16	1	1	77	78	72	72	72	65	Lab Issues			
NV	31	20	1	1	59	60	56	57	57		Lab Issues			
NV	31	22	1	1	90	91	87	89	88	85	None			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
NV	31	25	1	1	46	46	42	42	42	75	Lab issues	89	42	47
NV	31	30	1	1	90	93	75	76	75	75	Lab issues			
NV	31	1005	1	1	67	68	64	65	64		Lab Issues			
NV	31	1005	2	1	66	66	64	64	ND		Lab Issues			
NM	1	23	1	1	96	108	35	36	35		Unmarked Spike	75	36	40
NM	1	26	1	1	114	138	71	73	72	65	Unmarked Spikes			
NM	1	26	2	1	101	106	75	75	ND	65	Unmarked Spike			
NM	1	26	3	1	121	121	75	75	ND	75	Unmarked Spikes (Many), Partial Days			
NM	1	29	3	1	None	None	None	None	ND		Missing Jan thru May, Unmarked Spikes (Few)			
NM	1	1013	3	1	89	90	58	58	57		Unmarked Spikes (Many), Partial Days			
NM	5	5	1	1	67	67	65	65	65		None	65	65	N/A
NM	13	16	1	1	91	92	82	89	ND	85	Not Credible--Constant Values for Extended Period			
NM	13	16	2	1	212	215	109	110	107	85	High Winds (Many), Unmarked Spikes (Many), Partial Days			
NM	13	17	1	1	107	107	104	104	113	85	Unmarked Sikes			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
NM	13	17	2	1	198	200	127	127	ND	85	Flawed Clock, High Winds (Many), Unmarked Spikes (Many), Partial Days (Many), Negatives Uncorrected, Extended Periods of Low Values	127	47	80
NM	13	19	1	1	179	183	82	83	ND	75	High Winds, Unmarked Spikes (Many)			
NM	13	20	1	1	None	None	None	None	ND		Clock Flawed, High Winds (Many), Unmarked Spikes (Many), Negative Uncorrected			
NM	13	21	1	1	123	124	93	94	93	85	Clock Flaws, Unmarked Spikes (Many), Negatives Uncorrected (Many)			
NM	13	24	1	1	59	59	47	47	46		Clock Flaws, Unmarked Spikes, Negatives Uncorrected			
NM	17	1002	1	1	32	33	32	33	32		None	33	28	4
NM	17	1003	1	1	28	28	23	28	28		Three Months Missing			
NM	25	8	1	1	54	55	50	51	50		None	51	51	N/A

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
NM	29	1	1	1	36	36	35	36	35		None	74	36	38
NM	29	3	1	1	107	109	73	74	73	75	Clock Flaws, High Winds (Many), Unmarked Spikes (Many), Partial Days, Negatives Uncorrected			
NM	49	20	1	1	39	40	32	34	34		None	34	34	N/A
NM	55	5	2	1	42	42	40	42	41		None	42	42	N/A
ND	15	3	3	1	37	38	27	28	27		None	28	28	N/A
ND	17	1004	3	1	26	26	21	22	21		None	22	22	N/A
ND	25	3	3	1	53	53	31	32	32		None	32	32	N/A
ND	53	2	3	1	40	40	25	25	25		Unmarked Spikes (two)	25	25	N/A
ND	57	4	3	1	32	33	27	27	27		None	27	27	N/A
OK	1	9009	1	1	32	33	29	29	28		None	34	29	Collocated
OK	1	9009	2	1	33	34	30	34	ND		None			
OK	15	9008	1	1	34	34	33	34	ND		None	35	34	1
OK	15	9008	2	1	35	35	35	35	35		None			
OK	109	35	1	1	106	120	44	44	44		Unmarked Spike	47	43	4
OK	109	35	2	1	106	120	43	43	ND		Unmarked Spike			
OK	109	1037	1	1	104	116	47	47	47		None			
OK	115	9004	1	1	ND	ND	ND	ND	ND		Clock Flawed, Skipped			
OK	143	110	1	1	105	115	60	61	61		Unmarked Spike	77	56	21
OK	143	110	2	1	128	143	55	56	ND		Unmarked Spike			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
OK	143	191	1	1	83	84	77	77	77	75	None			
OR	29	133	7	1	42	43	40	43	42		None	49	43	7
OR	29	2129	1	1	49	49	45	49	46		None			
OR	29	4001	1	1	56	58	46	47	46		None			
OR	35	4	1	1	85	87	73	75	75	75	None	75	75	N/A
OR	39	13	1	1	37	37	36	37	36		None	50	37	13
OR	39	58	1	1	72	80	50	50	49		None			
OR	39	2013	1	1	49	50	45	45	45		None			
OR	51	9	1	1	60	63	43	43	43			43	29	15
OR	51	9	2	1	40	41	39	41	ND		None			
OR	51	80	1	1	29	30	28	29	28		None			
OR	51	246	7	1	34	35	29	35	34		None			
OR	51	246	8	1	33	33	28	33	ND		None			
OR	59	121	1	1	60	64	40	41	40		None	41	41	N/A
OR	61	119	7	1	33	33	32	33	33		None	33	33	N/A
SD	11	2	1	1	78	82	58	58	58		None	58	58	N/A
SD	13	3	1	1	54	54	52	53	53		None	53	53	N/A
SD	93	1	1	1	37	38	34	34	34		None	34	34	N/A
SD	99	6	1	1	45	46	40	41	40		None	41	41	N/A
SD	99	8	3	1	52	52	41	41	40		None	41	41	
SD	103	13	1	1	67	67	62	64	63		None	102	44	58
SD	103	20	3	1	124	125	102	102	101	85	Unmarked Spikes (Many)			
SD	103	1001	2	1	46	46	42	44	43		None			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
TX	29	53	2	1	61	62	57	58	ND		None	58	37	21
TX	29	53	4	1	84	85	48	49	49		None			
TX	29	60	1	1	40	40	36	37	37		None			
TX	113	50	1	1	55	57	42	43	43		None	53	34	19
TX	113	61	1	1	53	53	51	53	53		None			
TX	113	75	1	1	39	40	34	34	34		None			
TX	141	2	2	1	62	63	59	63	63		None	71	33	38
TX	141	29	1	1	40	40	39	40	40		None			
TX	141	37	4	1	91	91	63	63	62		Unmarked Spikes (Many)			
TX	141	38	1	1	63	65	53	65	65		None			
TX	141	44	4	1	86	86	64	64	63		Unmarked Spikes (Many)			
TX	141	57	1	1	69	70	66	67	ND	65	None			
TX	141	57	4	1	91	91	71	71	70	65	Unmarked Spikes			
TX	141	59		1	36	37	32	33	33		None			
TX	167	4	1	1	53	53	50	51	51		None	51	51	N/A
TX	201	24	3	1	52	54	40	41	41		None	94	33	61
TX	201	47	1	1	40	41	37	38	38		None			
TX	201	62	1	1	95	104	49	49	49		Unmarked Spike			
TX	201	66	1	1	64	66	51	52	52		None			
TX	201	71	1	1	42	44	34	34	34		None			
TX	201	1035	1	1	111	116	92	94	94	85	Unmarked Spikes			
TX	201	1039	1	1	39	40	33	33	ND		None			

Appendix B-1 Within County Variability for the W, SW, and MW

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
UT	5	4	1	1	77	85	59	60	60		None	60	60	N/A
UT	11	4	5	1	73	74	65	67	67	65	None	67	67	N/A
UT	35	3	1	1	99	103	69	75	75	65	Unmarked Spike	96	50	46
UT	35	12	2	1	140	142	90	91	ND	85	Wildfire, Unmarked Spikes (Three)			
UT	35	12	3	1	95	96	87	96	ND	85	None			
UT	35	1001	3	1	80	85	49	50	50		None			
UT	35	3006	1	1	103	103	85	85	96	75	Wildfire, Unmarked Spikes (Many)			
UT	49	2	2	1	99	108	72	75	75	65	Unmarked Spike	99	75	24
UT	49	2	3	1	72	75	57	75	ND	65	None			
UT	49	4001	2	1	160	162	97	99	99	85	Wildfire, High Wind, Unmarked Spikes			
UT	57	2	1	1	103	103	77	80	78	75	Unmarked Spikes	80	80	N/A
WA	5	2	3	1	115	116	69	73	ND	65	Clock Problems, High WInd, Unmarked Spikes (Many), Non-Credible Low Values for Extended Periods	73	73	N/A
WA	63	16	3	1	39	40	36	40	42	65	None			
WA	63	16	4	1	ND	ND	ND	ND	ND		Three Months Data, Skipped			

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
WA	63	21	1	1	ND	ND	ND	ND	ND		No First Quarter Data, Skipped	83	40	43
WA	65	4	3	1	93	111	81	83	83	75	Unmarked Spikes (Many), Partial Days			
WA	71	6	3	1	87	107	64	64	64		Clock Problems	64	64	N/A
WA	77	9	1	1	52	53	48	50	50		None	50	50	N/A
WY	5	802	1	1	27.0	28.0	21.0	21.0	21.0		Non-Credible Low Values Part of Year	127	21	106
WY	5	869	2	1	108	108	82	82	81	75	Unmarked Spikes (Many)			
WY	5	870	2	1	125	127	118	127	127	85	Small Dataset			
WY	5	875	1	1	65	67	51	52	52		None			
WY	5	875	2	1	56	57	49	50	ND		None			
WY	5	881	1	1	62	62	57	59	59		None			
WY	5	883	1	1	81	83	66	67	67	65	None			
WY	7	826	1	1	40	40	39	40	39		None	63	35	28
WY	7	826	2	1	36	36	36	36	ND		None			
WY	7	8110	1	1	62	63	56	63	63		None			
WY	7	8120	1	1	35	35	35	35	35		None			
WY	9	819	1	1	44	46	30	30	30		None	105	30	75
WY	9	850	1	1	73	76	62	62	62		None			
WY	9	851	2	1	132	154	96	105	105	85	Unmarked Spikes (Many)			
WY	13	1003	3	1	48	49	44	44	44		None	44	44	N/A

Appendix B-1 Within County Variability for the W, SW, and MW														
State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th Calculated Using EPA Procedures	98th Percentile	EPA 98Th Percentile Calculated Using EPA Procedures	98th Percentile Data, EPA Data Provided April 28, 2011	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
WY	21	1	1	1	36	38	29	29	29		None	32	29	3
WY	21	1	2	1	34	35	32	32	ND		None			
WY	23	800	1	1	169	187	89	90	89	85	Unmarked Spikes (Two)	90	21	69
WY	23	814	1	1	24	25	21	21	21		Non-Credible Low Values Part of the Year			
WY	23	815	1	1	24	24	23	24	23		Non-Credible Low Values Part of the Year			
WY	23	815	2	1	24	24	23	23	ND		None			
WY	25	1	1	1	79	93	40	40	40		None	40	31	9
WY	25	1	2	1	54	58	31	31	ND		None			

Table B-2. Within-County Variability in Eastern States

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th	98th Percentile	EPA 98Th	EPA Data, 98th	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
DC	1	41	1	1	59.0	46.1	46.8	31.1	46.0		Gatherings, Noon Monitor Start Times	31.1	28.4	2.7
DC	1	41	2	1	65.5	40.3	46.4	28.4	ND		Gatherings			
FL	86	1016	1	1	74.1	76.0	63.7	65.0	65.0		None	65.0	59.0	6.0
FL	86	1016	2	1	73.9	77.0	55.6	59.0	ND		None			
FL	105	10	3	1	43.9	54.9	35.0	36.0	34.0		Negative Values Uncorrected	36.0	27.6	8.4
FL	105	6006	3	1	28.8	28.9	27.5	27.6	26.0		Large Negative Values Uncorrected (Many)			
GA	21	7	1	1	51.4	53.0	44.0	44.0	44.0		None	51.0	44.0	7.0
GA	21	7	2	1	66.8	70.0	50.0	51.0	ND		None			
GA	121	32	1	1	39.7	40.0	38.2	40.0	40.0		None	40.0	38.0	2.0
GA	121	32	2	1	37.6	38.0	35.5	38.0	ND		None			
IL	31	1	2	1	52.7	54.0	46.0	46.0	46.0		None	60.0	34.0	26.0
IL	31	22	3	1	52.9	53.0	40.8	41.0	41.0		None			
IL	31	60	1	1	53.8	54.0	53.0	53.0	53.0		None			
IL	31	1016	3	1	68.2	74.0	59.6	60.0	60.0		None			
IL	31	1901	1	1	39.5	40.0	37.0	37.0	37.0		None			
IL	31	2001	1	1	56.3	57.0	52.3	53.0	53.0		None			
IL	31	3301	1	1	34.8	35.0	34.0	34.0	34.0		None			
IL	31	4201	1	1	41.0	41.0	40.0	41.0	41.0		None			
IL	119	10	1	1	104.2	115.0	51.9	52.0	52.0		Unmarked Spike	54.0	42.0	12.0
IL	119	1007	1	1	65.8	69.0	52.6	54.0	54.0		None			
IL	119	3007	1	1	84.6	94.0	39.6	42.0	42.0		None			
IN	127	23	3	1	50.1	50.5	37.1	37.1	37.0		None	37.1	37.0	0.2
IN	127	24	1	1	52.8	56.3	36.9	37.0	36.0		None			
ME	3	13	3	1	ND	ND	ND	ND	78.0		Unmarked Spike, First 2 Quarters Only			

Table B-2. Within-County Variability in Eastern States

State	County Code	Site ID	POC	Unit	99.7th Percentile	EPA 99/7th	98th Percentile	EPA 98Th	EPA Data, 98th	Violation Level	Notes	Maximum, ug/m3	Minimum, ug/m3	Range, ug/m3
ME	3	14	1	1	47.3	47.4	46.7	47.4	47.0		None, Last Quarter Only	60.2	47.4	12.8
ME	3	1011	2	1	86.3	87.2	58.9	60.2	54.0		Unmarked Spikes			
ME	3	1019	1	1	60.6	63.3	49.0	49.8	49.0		None			
MI	163	1	1	1	36.0	36.0	35.7	36.0	36.0		None			
MI	163	5	1	1	49.3	52.0	35.5	36.0	36.0		None			
MI	163	33	1	1	47.8	48.0	46.8	46.0	46.0		None	50.0	36.0	14.0
MI	163	33	3	1					ND					
MI	163	33	3	1	73.6	75.0	45.7	45.7	ND		None			
MI	163	33	9	1	49.5	14.0	46.9	50.0	ND		None			
OH	61	14	1	1	48.6	50.0	41.6	42.0	42.0		None			
OH	61	40	1	1	32.7	33.0	30.9	31.0	40.0		None			
OH	61	40	9	1	48.9	48.9	41.1	41.3	ND		Partial Days	42.0	31.0	11.0
OH	61	5001	1	1	61.8	66.0	39.8	40.0	40.0		None			
OH	61	5001	2	1	48.4	50.0	39.2	39.0	ND		None			
OH	95	1003	2	1	67.1	67.1	57.3	66.9	58.0	65	Unmarked Spikes, Partial Days	66.9	66.9	N/A
OH	99	5	1	1	46.9	48.0	41.4	42.0	42.0		None	42.0	38.0	4.0
OH	99	6	1	1	43.8	45.0	38.0	38.0	38.0		None			
PA	3	2	1	1	57.3	60.0	43.9	44.0	44.0		None			
PA	3	64	1	1	107.7	120.0	67.7	68.0	58.0	65	Unmarked Spike			
PA	3	67	1	1	30.5	31.0	27.8	28.0	28.0		None			
PA	3	92	1	1	53.4	54.0	49.5	50.0	50.0		None			
PA	3	116	5	1	None	None	None	None	ND		Clock Flawed, Skipped	68.0	28.0	40.0
PA	3	1301	1	1	72.9	75.0	61.5	62.0	62.0		None			
PA	3	1301	2	1	67.1	70.0	51.8	52.0	ND		None			
PA	3	3006	5	1	None	None	None	None	52.0		Clock Flawed, Skipped			
PA	3	3007	1	1	38.5	39.0	35.5	36.0	36.0		None			
PA	3	7004	5	1	None	None	None	None	ND		Clock Flawed, Skipped			
PA	7	14	5	1	49.7	49.8	40.9	41.1	40.0		None	41.1	41.1	N/A

APPENDIX C

EPA PM_{10} Data, 2007-2009, Provided April 28, 2011

Appendix C. PM_{10} Data Provided by U.S. EPA, April 28, 2011

SITE	98th percentile, 2007	98th percentile, 2008	98th percentile, 2009	3-year average 98th per centile, 2007-2009	complete?	expected exceedance design value, 2007-2009	concentration-based expected exceedance design value, 2007-2009	PM Region	state	county	CBSA
010730002	61	44	50	52		0.0	73	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010730023	84	68	47	66	yes	0.0	101	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010730034	57	43	42	47	yes	0.0	67	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010731003	60	38	34	44	yes	0.0	67	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010731008	56	34	32	41	yes	0.0	61	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010731010	50	41	34	42	yes	0.0	96	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010732003	60	51	40	50	yes	0.0	67	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010736002	61	41	35	46	yes	0.0	64	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010736003	123	98	66	96	yes	0.4	145	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010736004	127	115	91	111	yes	1.3	167	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010890002	62	32	28	41	yes	0.0	81	Southeast	AL	Madison	Huntsville, AL
010890003	44	33	28	35	yes	0.0	47	Southeast	AL	Madison	Huntsville, AL
010890004	36	34	24	31	yes	0.0	71	Southeast	AL	Madison	Huntsville, AL
010890014	52	33	25	37	yes	0.0	64	Southeast	AL	Madison	Huntsville, AL
010970003	45	41	33	40	yes	0.0	53	Southeast	AL	Mobile	Mobile, AL
010970016	48	45	40	44		0.0	54	Southeast	AL	Mobile	Mobile, AL
011011002	44	53	31	43	yes	0.0	85	Southeast	AL	Montgomery	Montgomery, AL
020200018	56	49	52		yes	0.0	122	Not in PMREG Re	AK	Anchorage	Anchorage, AK
020200044	87	104	88	93	yes	0.0	109	Not in PMREG Re	AK	Anchorage	Anchorage, AK
020200052			54	54		0.0	120	Not in PMREG Re	AK	Anchorage	Anchorage, AK
020201004	48	53	66	56	yes	2.0	163	Not in PMREG Re	AK	Anchorage	Anchorage, AK
021100004	21	28	33	27		0.0	45	Not in PMREG Re	AK	Juneau	Juneau, AK
021700008	48	87	33	56		3.4	233	Not in PMREG Re	AK	Matanuska Susitna	Anchorage, AK
040011003			38	38		0.0	65	Southwest	AZ	Apache	
040011234	75	83	72	77		0.0	110	Southwest	AZ	Apache	
040030011	64	70	46	60	yes	2.0	159	Southwest	AZ	Cochise	Sierra Vista-Douglas, AZ
040031005	72	92	83	82	yes	0.0	97	Southwest	AZ	Cochise	Sierra Vista-Douglas, AZ
040051008	42	43	43	43	yes	0.0	56	Southwest	AZ	Coconino	Flagstaff, AZ
040051010	29			29		0.0	33	Southwest	AZ	Coconino	Flagstaff, AZ
040051237			43	43		0.0	57	Southwest	AZ	Coconino	Flagstaff, AZ
040070008	42	39	39	40	yes	0.0	61	Southwest	AZ	Gila	Payson, AZ
040070009	27	28	27	27		0.0	64	Southwest	AZ	Gila	Payson, AZ
040071001	115	67	113	98	yes	2.3	194	Southwest	AZ	Gila	Payson, AZ
040078000	46	37	31	38		0.0	72	Southwest	AZ	Gila	Payson, AZ
040090001	54			54		0.0	61	Southwest	AZ	Graham	Safford, AZ

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SITE	98th percentile, 2007	98th percentile, 2008	98th percentile, 2009	3-year average 98th per centile, 2007-2009	complete?	expected exceedance design value, 2007-2009	concentration-based expected exceedance design value, 2007-2009	PM Region	state	county	CBSA
040130019	102	76	84	87	yes	0.3	117	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040131003	70	49	65	61	yes	0.0	110	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040131004	76	48	66	63	yes	0.0	87	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040132001	74	48	66	63	yes	0.0	196	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133002	97	73	90	87	yes	0.3	133	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133003	61	50	75	62	yes	0.0	135	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133010	98	85	97	93	yes	0.3	123	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134003	131	94	111	112	yes	1.7	171	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134004	98	48	132	93	yes	0.3	220	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134006	131	90	96	106	yes	2.4	195	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134009	153	145	145	148	yes	6.0	247	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134010	93	66	53	71	yes	0.0	227	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134011	127	116	87	110	yes	3.0	203	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134014	113	88	39	80		1.3	272	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134016			27	27		0.0	27	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040135100	69	67	43	60	yes	0.0	94	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137020	100	74	119	98	yes	2.0	238	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137022	191	74	122	129	yes	4.1	210	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137024	167	86	108	120	yes	6.1	176	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040138006	132	109	118	120	yes	2.0	213	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040139812	126	110	108	115	yes	2.0	161	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040139997	73	59	63	65	yes	0.3	102	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040151000	52	56	41	50		0.0	56	Southwest	AZ	Mohave	Lake Havasu City-Kingman, AZ
040151003	50	43	51	48	yes	0.0	98	Southwest	AZ	Mohave	Lake Havasu City-Kingman, AZ
040151011	195	77	52	108		2.8	195	Southwest	AZ	Mohave	Lake Havasu City-Kingman, AZ
040170007	46			46		0.0	75	Southwest	AZ	Navajo	
040171002			32	32		0.0	85	Southwest	AZ	Navajo	
040190001	70	49	77	65	yes	0.0	128	Southwest	AZ	Pima	Tucson, AZ
040190008	48	89	52	63		0.0	89	Southwest	AZ	Pima	Tucson, AZ
040190011	61	61	61	61	yes	0.3	95	Southwest	AZ	Pima	Tucson, AZ
040190020	123	77	99	100	yes	2.0	208	Southwest	AZ	Pima	Tucson, AZ
040191001	64	67	65	65	yes	0.3	121	Southwest	AZ	Pima	Tucson, AZ
040191009	62	68	75	68	yes	0.0	99	Southwest	AZ	Pima	Tucson, AZ
040191018	44	50	41	45	yes	0.0	101	Southwest	AZ	Pima	Tucson, AZ
040191023	80	42	52	58	yes	0.0	80	Southwest	AZ	Pima	Tucson, AZ

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SITE	98th percentile, 2007	98th percentile, 2008	98th percentile, 2009	3-year average 98th per centile, 2007-2009	complete?	expected exceedance design value, 2007-2009	concentration-based expected exceedance design value, 2007-2009	PM Region	state	county	CBSA
040191026	60	81	48	63	yes	2.0	173	Southwest	AZ	Pima	Tucson, AZ
040191030	53	58	40	50	yes	0.0	84	Southwest	AZ	Pima	Tucson, AZ
040191113	68	61	66	65		0.3	124	Southwest	AZ	Pima	Tucson, AZ
040198031	48	41		45		0.0	66	Southwest	AZ	Pima	Tucson, AZ
040210001	129	103	109	114	yes	4.7	274	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213002	39	42	38	40	yes	0.0	57	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213004	76	63	88	76	yes	2.0	189	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213005	45			45		0.0	45	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213006	29	32	36	32	yes	0.0	42	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213007	61	53	49	54	yes	0.0	113	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213008	291	185	169	215	yes	17.8	482	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213009	326	114	131	190	yes	17.6	521	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213010	232	137	205	191	yes	12.5	520	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213011	224	159	179	187	yes	15.6	887	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213012	53	44	49	49	yes	0.0	65	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213013	526	405	286	406	yes	139.8	653	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213014	135	64	120	106		0.0	153	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040217004	212	151	82	148	yes	6.6	345	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040230004	175	159	135	156	yes	9.7	217	Southwest	AZ	Santa Cruz	Nogales, AZ
040252002	54	42	57	51		0.0	63	Southwest	AZ	Yavapai	Prescott, AZ
040270004	170	105	123	133	yes	7.9	306	Southwest	AZ	Yuma	Yuma, AZ
040278011	291			291		2.1	291	Southwest	AZ	Yuma	Yuma, AZ
051190007	41	36	30	36	yes	0.0	63	Southeast	AR	Pulaski	Little Rock-North Little Rock-Conway, AR
051191007	48	42	36	42	yes	0.0	63	Southeast	AR	Pulaski	Little Rock-North Little Rock-Conway, AR
060010007	63	46		55		0.0	71	Northwest	CA	Alameda	San Francisco-Oakland-Fremont, CA
060011001	47	37		42		0.0	57	Northwest	CA	Alameda	San Francisco-Oakland-Fremont, CA
060012004	33	38	31	34		0.0	42	Northwest	CA	Alameda	San Francisco-Oakland-Fremont, CA
060070002	61	112	43	72	yes	0.0	143	Northwest	CA	Butte	Chico, CA
060072001	50	31		41		0.0	116	Northwest	CA	Butte	Chico, CA
060090001	33	45	24	34	yes	0.0	74	Northwest	CA	Calaveras	
060110007	2	2	2	2		0.0	2	Northwest	CA	Colusa	
060111002	42	80	54	59	yes	0.0	90	Northwest	CA	Colusa	
060130002	49	34	29	37	yes	0.0	49	Northwest	CA	Contra Costa	San Francisco-Oakland-Fremont, CA
060131002	46	59	31	45	yes	0.0	78	Northwest	CA	Contra Costa	San Francisco-Oakland-Fremont, CA
060131004	51	40	32	41		0.0	54	Northwest	CA	Contra Costa	San Francisco-Oakland-Fremont, CA

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060133001	49	73		61		0.0	73	Northwest	CA	Contra Costa	San Francisco-Oakland-Fremont, CA
060150006	43	46	40	43		0.0	49	Northwest	CA	Del Norte	Crescent City, CA
060170010	33	52	15	33		0.0	55	Northwest	CA	El Dorado	Sacramento--Arden-Arcade--Roseville, CA
060190007	84	87	71	81	yes	0.0	98	Southern Californ	CA	Fresno	Fresno, CA
060190008	89	76	67	77	yes	0.0	107	Southern Californ	CA	Fresno	Fresno, CA
060195001	83	77	62	74	yes	0.0	116	Southern Californ	CA	Fresno	Fresno, CA
060210003	38	111	70	73	yes	0.0	121	Northwest	CA	Glenn	
060231002	44	44	48	45	yes	0.0	54	Northwest	CA	Humboldt	Eureka-Arcata-Fortuna, CA
060231004	35	49	41	42	yes	0.0	61	Northwest	CA	Humboldt	Eureka-Arcata-Fortuna, CA
060250004	149			149		0.0	149	Southern Californ	CA	Imperial	El Centro, CA
060250005	142	103	186	144	yes	8.1	282	Southwest	CA	Imperial	El Centro, CA
060250007	281	110	167	186	yes	10.6	291	Southern Californ	CA	Imperial	El Centro, CA
060251003	121	59	161	114	yes	6.7	243	Southern Californ	CA	Imperial	El Centro, CA
060254003	155	97	132	128	yes	6.7	226	Southern Californ	CA	Imperial	El Centro, CA
060254004	108	99	117	108	yes	3.2	202	Southern Californ	CA	Imperial	El Centro, CA
060270002	45	50	50	48		0.0	81	Northwest	CA	Inyo	Bishop, CA
060270004	58	55	61	58	yes	1.0	149	Southern Californ	CA	Inyo	Bishop, CA
060270021	67	96	62	75	yes	2.7	309	Southern Californ	CA	Inyo	Bishop, CA
060270022	99	207	144	150	yes	6.0	449	Southern Californ	CA	Inyo	Bishop, CA
060270024	71	85	132	96	yes	3.0	389	Southern Californ	CA	Inyo	Bishop, CA
060270025	53	132	75	87	yes	3.0	198	Southern Californ	CA	Inyo	Bishop, CA
060270026	40	53	78	57	yes	2.0	226	Southern Californ	CA	Inyo	Bishop, CA
060270028		69	120	95		2.4	395	Southern Californ	CA	Inyo	Bishop, CA
060270029		40	192	116		3.0	416	Southern Californ	CA	Inyo	Bishop, CA
060271001	60	54	71	62	yes	1.0	138	Southern Californ	CA	Inyo	Bishop, CA
060271003	196	201	116	171	yes	11.3	320	Southern Californ	CA	Inyo	Bishop, CA
060271018	53	56	82	64	yes	1.4	209	Southern Californ	CA	Inyo	Bishop, CA
060271023	55	56	50	54		0.0	76	Northwest	CA	Inyo	Bishop, CA
060290010	95	141	96	111	yes	2.6	267	Southern Californ	CA	Kern	Bakersfield, CA
060290011	70	111	45	75	yes	0.0	154	Southern Californ	CA	Kern	Bakersfield, CA
060290014	106	122	90	106	yes	1.1	256	Southern Californ	CA	Kern	Bakersfield, CA
060290015	41	49	45	45	yes	0.0	72	Southern Californ	CA	Kern	Bakersfield, CA
060290017			42	42		0.0	43	Southern Californ	CA	Kern	Bakersfield, CA
060290232	103	107	98	103	yes	2.0	224	Southern Californ	CA	Kern	Bakersfield, CA
060310004	88	121	91	100	yes	2.0	207	Southern Californ	CA	Kings	Hanford-Corcoran, CA

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060310500	102	121	86	103	yes	2.0	286	Southern Californ	CA	Kings	Hanford-Corcoran, CA
060311004	97	226	99	141	yes	3.5	229	Southern Californ	CA	Kings	Hanford-Corcoran, CA
060311007	111	44		78		0.0	111	Southern Californ	CA	Kings	Hanford-Corcoran, CA
060370002	83	98	65	82		2.0	165	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060370016		50	48	49		0.0	81	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060371002	109	65	91	88		0.0	118	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060371103	77	80	72	76	yes	0.0	125	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060374002	75	51	55	60	yes	2.0	123	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060374004	123	64	78	88		0.0	123	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060375005	96	49	46	64	yes	0.0	128	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060376012	131	56	45	77	yes	2.0	167	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060379033	59	61	48	56	yes	2.2	152	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060410001	46	35	35	39	yes	0.0	52	Northwest	CA	Marin	San Francisco-Oakland-Fremont, CA
060431001	51	77	74	67	yes	0.0	135	Northwest	CA	Mariposa	
060450002	42	51	90	61		0.3	230	Northwest	CA	Mendocino	Ukiah, CA
060450006	26	45		36		2.3	222	Northwest	CA	Mendocino	Ukiah, CA
060452001	31	112		72		0.0	113	Northwest	CA	Mendocino	Ukiah, CA
060472510	65	74	60	66	yes	0.0	75	Northwest	CA	Merced	Merced, CA
060510001	55	96	66	72	yes	0.0	118	Northwest	CA	Mono	
060510005	33	52	32	39	yes	0.0	78	Northwest	CA	Mono	
060510007	109	47		78		0.0	120	Northwest	CA	Mono	
060510011	1909	857	489	1085		10.9	2736	Northwest	CA	Mono	
060530002	23	28	23	25		0.0	29	Southern Californ	CA	Monterey	Salinas, CA
060530005	58			58		0.0	58	Southern Californ	CA	Monterey	Salinas, CA
060530008	50	63	42	52		0.0	63	Southern Californ	CA	Monterey	Salinas, CA
060531003	34	50	34	39	yes	0.0	50	Southern Californ	CA	Monterey	Salinas, CA
060550003	43	46	31	40	yes	0.0	51	Northwest	CA	Napa	Napa, CA
060590007	75	72	46	64	yes	2.0	97	Southern Californ	CA	Orange	Los Angeles-Long Beach-Santa Ana, CA
060592022	55	42	41	46	yes	0.0	74	Southern Californ	CA	Orange	Los Angeles-Long Beach-Santa Ana, CA
060610006	35	40	29	35	yes	0.0	74	Northwest	CA	Placer	Sacramento--Arden-Arcade--Roseville, CA
060631006	60			60		0.0	60	Northwest	CA	Plumas	
060650003	93	85	68	82	yes	2.0	332	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060650004		76	68	72		0.0	84	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060650012	78	49	48	58		0.0	99	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060651999	238	210	175	208	yes	14.1	290	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA

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060652002	157	90	81	109	yes	1.7	179	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060655001	68	103	71	81	yes	1.0	149	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060656001	1212	85	66	454		9.7	1212	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060658001	117	82	73	91	yes	1.0	117	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060658005	132	120	103	118	yes	0.0	142	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060659001		66	49	58		0.0	72	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060670002	54	97	33	61		0.0	97	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670006	46	71	33	50	yes	0.0	83	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670010	53	66	41	53	yes	0.0	73	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670013	56	71		64		0.0	94	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670014		56	43	50		0.0	56	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670284	56	86	74	72	yes	0.0	89	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060674001	46	74	38	53	yes	0.0	81	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060690002	31	38	30	33	yes	0.0	40	Southern Californ	CA	San Benito	San Jose-Sunnyvale-Santa Clara, CA
060710001	103	56	65	75	yes	2.0	202	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060710005	89	41	57	62		0.0	89	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060710013	88	56	39	61	yes	2.0	229	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060710025	115	75	65	85	yes	2.0	275	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060710306	109	83	58	83	yes	3.1	285	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060711004		50	45	48		0.0	65	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060711234	60	92	60	71	yes	0.8	144	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060712002	155	75	73	101	yes	4.4	276	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060714001	73	66	67	69	yes	0.0	99	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060714003	92	57	51	67	yes	0.0	97	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060719004	136	70	58	88	yes	2.0	136	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060730001	51	38	52	47	yes	0.0	57	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060730003	49	40	46	45	yes	0.0	61	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060730006	45	39	41	42	yes	0.0	65	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060730077		68	71	70		0.0	95	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060731002	57	45	47	50	yes	0.0	82	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060731010	58	54	53	55	yes	0.0	110	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060731014	146	79	70	98	yes	0.7	170	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060732000	19	34	91	48		0.0	91	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060732007	143	146	114	134	yes	4.1	394	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060750005	58	39	30	42	yes	0.0	65	Northwest	CA	San Francisco	San Francisco-Oakland-Fremont, CA

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060771002	68	83	57	69	yes	0.0	104	Northwest	CA	San Joaquin	Stockton, CA
060773005	46	78	38	54	yes	0.0	97	Northwest	CA	San Joaquin	Stockton, CA
060773010	61	67	43	57	yes	0.0	71	Northwest	CA	San Joaquin	Stockton, CA
060790005	35	41	38	38		0.0	65	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060792004	83	75	95	84	yes	0.0	130	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060792006	30	36	32	33	yes	0.0	41	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060793001	38	54	66	53		0.0	66	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060794002	61	47	55	54	yes	0.0	81	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060794003	107	83		95		0.0	146	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060798001	43	40	36	40	yes	0.0	48	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060811001	45	38		42		0.0	52	Northwest	CA	San Mateo	San Francisco-Oakland-Fremont, CA
060830008	72	49	41	54	yes	2.0	227	Southern Californ	CA	Santa Barbara	Santa Barbara-Santa Maria-Goleta, CA
060831008	53	56	44	51		0.0	60	Southern Californ	CA	Santa Barbara	Santa Barbara-Santa Maria-Goleta, CA
060831025	51	48	33	44	yes	2.2	320	Southern Californ	CA	Santa Barbara	Santa Barbara-Santa Maria-Goleta, CA
060832004	37	38	42	39	yes	0.0	61	Southern Californ	CA	Santa Barbara	Santa Barbara-Santa Maria-Goleta, CA
060834003	39	43	46	43	yes	0.0	68	Southern Californ	CA	Santa Barbara	Santa Barbara-Santa Maria-Goleta, CA
060850005	60	40	40	47	yes	0.0	64	Northwest	CA	Santa Clara	San Jose-Sunnyvale-Santa Clara, CA
060852003	67			67		0.0	72	Northwest	CA	Santa Clara	San Jose-Sunnyvale-Santa Clara, CA
060870003	47	53	106	69		0.0	106	Northwest	CA	Santa Cruz	Santa Cruz-Watsonville, CA
060870004	35	37	37	36		0.0	44	Southern Californ	CA	Santa Cruz	Santa Cruz-Watsonville, CA
060870007	32	35	35	34	yes	0.0	44	Southern Californ	CA	Santa Cruz	Santa Cruz-Watsonville, CA
060890004	33	113	31	59	yes	2.2	236	Northwest	CA	Shasta	Redding, CA
060890007	40	113	35	63	yes	0.0	135	Northwest	CA	Shasta	Redding, CA
060890008	38	106	27	57	yes	0.0	108	Northwest	CA	Shasta	Redding, CA
060930004	33	114	30	59		0.0	115	Northwest	CA	Siskiyou	
060930005	13	37	2	17		0.0	37	Northwest	CA	Siskiyou	
060932001	64	97	29	63	yes	4.6	205	Northwest	CA	Siskiyou	
060950004	47	42		45		0.0	49	Northwest	CA	Solano	Vallejo-Fairfield, CA
060950006	29	43		36		0.0	50	Northwest	CA	Solano	Vallejo-Fairfield, CA
060953001	28	39	25	31	yes	0.0	60	Northwest	CA	Solano	Vallejo-Fairfield, CA
060970001	27	38	21	29	yes	0.0	81	Northwest	CA	Sonoma	Santa Rosa-Petaluma, CA
060970002	24	29	20	24	yes	0.0	48	Northwest	CA	Sonoma	Santa Rosa-Petaluma, CA
060970003	36	48		42		0.0	48	Northwest	CA	Sonoma	Santa Rosa-Petaluma, CA
060973002	29	27	25	27	yes	0.0	41	Northwest	CA	Sonoma	Santa Rosa-Petaluma, CA
060990005	75	88	64	76	yes	0.0	111	Northwest	CA	Stanislaus	Modesto, CA

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060990006	71	79	62	71	yes	0.0	96	Northwest	CA	Stanislaus	Modesto, CA
061010003	42	55	49	49	yes	0.0	66	Northwest	CA	Sutter	Yuba City, CA
061030002	50	95	46	64	yes	0.0	106	Northwest	CA	Tehama	Red Bluff, CA
061050002	48	282	52	127	yes	9.3	301	Northwest	CA	Trinity	
061072002	89	91	87	89	yes	0.0	103	Southern Californ	CA	Tulare	Visalia-Porterville, CA
061111004	64	42	37	48	yes	0.0	98	Southern Californ	CA	Ventura	Oxnard-Thousand Oaks-Ventura, CA
061112002	59	52	47	53	yes	0.0	118	Southern Californ	CA	Ventura	Oxnard-Thousand Oaks-Ventura, CA
061113001	62	61	85	69	yes	2.0	245	Southern Californ	CA	Ventura	Oxnard-Thousand Oaks-Ventura, CA
061131003	60	109	54	74	yes	2.0	181	Northwest	CA	Yolo	Sacramento--Arden-Arcade--Roseville, CA
061132001	60	60	49	56	yes	0.0	61	Northwest	CA	Yolo	Sacramento--Arden-Arcade--Roseville, CA
080010006	82	73	63	73	yes	0.0	107	Northwest	CO	Adams	Denver-Aurora, CO
080013001	60	59	49	56	yes	0.0	68	Northwest	CO	Adams	Denver-Aurora, CO
080030001	50	64	81	65	yes	0.8	135	Northwest	CO	Alamosa	
080030003	71	85	58	71	yes	1.5	157	Northwest	CO	Alamosa	
080070001	47	52	73	57	yes	1.4	182	Northwest	CO	Archuleta	
080130003	48	44	38	43	yes	0.0	60	Northwest	CO	Boulder	Boulder, CO
080130012	59	46	35	47	yes	0.0	73	Northwest	CO	Boulder	Boulder, CO
080290004	59	62	69	63	yes	1.0	186	Northwest	CO	Delta	
080310002	53	51	42	49	yes	0.0	64	Northwest	CO	Denver	Denver-Aurora, CO
080310017	60	55	46	54	yes	0.0	80	Northwest	CO	Denver	Denver-Aurora, CO
080310025	68	56	48	57	yes	0.0	96	Northwest	CO	Denver	Denver-Aurora, CO
080410011	64	35		50		0.0	67	Northwest	CO	El Paso	Colorado Springs, CO
080410017		46	32	39		0.0	100	Northwest	CO	El Paso	Colorado Springs, CO
080430003	30	38	33	34	yes	0.0	54	Northwest	CO	Fremont	Canon City, CO
080450005	58	127	69	85	yes	1.4	210	Northwest	CO	Garfield	
080450007	53	76	58	62	yes	0.0	88	Northwest	CO	Garfield	
080450008	46			46		1.0	286	Northwest	CO	Garfield	
080450009	27			27		0.0	34	Northwest	CO	Garfield	
080450010	26			26		0.0	28	Northwest	CO	Garfield	
080450011	38			38		0.0	38	Northwest	CO	Garfield	
080451001	28			28		0.0	36	Northwest	CO	Garfield	
080510004	90	97	83	90	yes	0.0	108	Northwest	CO	Gunnison	
080510007	62	51	45	53	yes	0.3	92	Northwest	CO	Gunnison	
080670004	38	57	50	48	yes	2.2	203	Northwest	CO	La Plata	Durango, CO
080690009	38	40	40	39	yes	0.0	61	Northwest	CO	Larimer	Fort Collins-Loveland, CO

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080770017	68	86	61	72	yes	0.0	103	Northwest	CO	Mesa	Grand Junction, CO
080770018	84	75	67	75	yes	0.4	130	Northwest	CO	Mesa	Grand Junction, CO
080770019	62	88	108	86		0.0	147	Northwest	CO	Mesa	Grand Junction, CO
080970006	41	48	38	42	yes	0.0	68	Northwest	CO	Pitkin	
080990001	64	85	90	80	yes	1.7	174	Upper Midwest	CO	Prowers	
080990002	42	52	55	50	yes	0.7	123	Upper Midwest	CO	Prowers	
081010012	45	98	85	76		0.0	120	Northwest	CO	Pueblo	Pueblo, CO
081010015			29	29		0.0	30	Northwest	CO	Pueblo	Pueblo, CO
081070003	79	80	74	78	yes	0.0	99	Northwest	CO	Routt	
081130004	53	73	72	66	yes	0.0	130	Northwest	CO	San Miguel	
081170002	62	51	49	54	yes	0.0	100	Northwest	CO	Summit	Silverthorne, CO
081230006	63	60	49	57	yes	0.0	68	Northwest	CO	Weld	Greeley, CO
090010010	43	49	42	45	yes	0.0	67	Northeast	CT	Fairfield	Bridgeport-Stamford-Norwalk, CT
090013005	35	37	36	36	yes	0.0	66	Northeast	CT	Fairfield	Bridgeport-Stamford-Norwalk, CT
090019003	29	55	25	36	yes	0.0	76	Northeast	CT	Fairfield	Bridgeport-Stamford-Norwalk, CT
090031003	27	35	28	30	yes	0.0	36	Northeast	CT	Hartford	Hartford-West Hartford-East Hartford, CT
090090027	35	45	38	39		0.0	49	Northeast	CT	New Haven	New Haven-Milford, CT
090092123	41	49	50	47	yes	0.0	63	Northeast	CT	New Haven	New Haven-Milford, CT
100032004	53	46	37	45	yes	0.0	58	Northeast	DE	New Castle	Phila.-Camden-Wilmington, PA-NJ-DE-MD
110010041	43	47	46	45	yes	0.0	61	Northeast	DC	District of Columbia	Wash.-Arlington-Alexandria, DC-VA-MD-WV
110010043			41	41		0.0	60	Northeast	DC	District of Columbia	Wash.-Arlington-Alexandria, DC-VA-MD-WV
120010023	55	44	30	43		0.3	72	Southeast	FL	Alachua	Gainesville, FL
120051004	46	43		45		0.3	82	Southeast	FL	Bay	Panama City-Lynn Haven, FL
120090011	29	34	25	29	yes	0.0	44	Southeast	FL	Brevard	Palm Bay-Melbourne-Titusville, FL
120110010	43	40	43	42	yes	0.0	56	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120110011	54			54		0.0	54	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120111002	43	43	44	43	yes	0.0	69	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120112004	50	49	27	42		0.0	63	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120113002	70	49	34	51		0.0	101	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120115005	61	33	37	44	yes	0.0	63	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120310032		40	34	37		0.0	54	Southeast	FL	Duval	Jacksonville, FL
120310053	53	35		44		0.0	82	Southeast	FL	Duval	Jacksonville, FL
120310084	60	47	48	52	yes	0.0	70	Southeast	FL	Duval	Jacksonville, FL
120310089	52	31		42		0.0	83	Southeast	FL	Duval	Jacksonville, FL
120470015	81			81		0.0	106	Southeast	FL	Hamilton	

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120570066	71	63		67		0.0	91	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120570083	50	49	39	46	yes	0.3	76	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120570095	57	57		57		0.0	82	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120571002	44	44		44		0.0	45	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120571035	50	45	37	44	yes	0.0	72	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120571065	41	33		37		0.0	68	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120571070	48	49		49		0.0	74	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120572002	38	39		39		0.0	73	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120573002	36	31	23	30	yes	0.0	72	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120710005	38	35	34	36	yes	0.0	47	Southeast	FL	Lee	Cape Coral-Fort Myers, FL
120810008	87	36		62		0.0	111	Southeast	FL	Manatee	Sarasota-Bradenton-Venice, FL
120861016	53	49	65	56	yes	0.0	76	Southeast	FL	Miami-Dade	Miami-Fort Lauderdale-Pompano Beach, FL
120950004	34	29	26	30	yes	0.0	41	Southeast	FL	Orange	Orlando-Kissimmee, FL
120951004	37	31	26	31	yes	0.0	55	Southeast	FL	Orange	Orlando-Kissimmee, FL
120952002	38	30	27	32	yes	0.0	50	Southeast	FL	Orange	Orlando-Kissimmee, FL
120990008	36	49		43		0.0	79	Southeast	FL	Palm Beach	Miami-Fort Lauderdale-Pompano Beach, FL
120992005	43	47	44	45		0.0	66	Southeast	FL	Palm Beach	Miami-Fort Lauderdale-Pompano Beach, FL
121030012	51	37	33	40	yes	0.0	72	Southeast	FL	Pinellas	Tampa-St. Petersburg-Clearwater, FL
121030018	39	30	22	30	yes	0.0	55	Southeast	FL	Pinellas	Tampa-St. Petersburg-Clearwater, FL
121033004	42	35	28	35	yes	0.0	58	Southeast	FL	Pinellas	Tampa-St. Petersburg-Clearwater, FL
121035002	36	45	38	40	yes	0.0	63	Southeast	FL	Pinellas	Tampa-St. Petersburg-Clearwater, FL
121050010	43	34	34	37	yes	0.0	64	Southeast	FL	Polk	Lakeland, FL
121052006	59			59		0.0	93	Southeast	FL	Polk	Lakeland, FL
121056006	31	33	26	30		0.0	43	Southeast	FL	Polk	Lakeland, FL
121071008	56	47	34	46	yes	0.0	77	Southeast	FL	Putnam	Palatka, FL
121150013	41			41		0.0	43	Southeast	FL	Sarasota	Sarasota-Bradenton-Venice, FL
121151003	42			42		0.0	48	Southeast	FL	Sarasota	Sarasota-Bradenton-Venice, FL
121151006	45	46	32	41	yes	0.0	60	Southeast	FL	Sarasota	Sarasota-Bradenton-Venice, FL
121152001	36			36		0.0	38	Southeast	FL	Sarasota	Sarasota-Bradenton-Venice, FL
121171002	35	37	30	34	yes	0.0	45	Southeast	FL	Seminole	Orlando-Kissimmee, FL
121275002	38	40	26	35	yes	0.0	47	Southeast	FL	Volusia	Deltona-Daytona Beach-Ormond Beach, FL
130210007	88	51	44	61	yes	0.0	133	Southeast	GA	Bibb	Macon, GA
130510014	40	43	32	38	yes	0.0	115	Southeast	GA	Chatham	Savannah, GA
130550001	46	41	33	40	yes	0.0	50	Southeast	GA	Chattooga	Summerville, GA
130892001	58	38	34	43	yes	0.0	58	Southeast	GA	DeKalb	Atlanta-Sandy Springs-Marietta, GA

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130950007	58	39	57	51	yes	0.0	71	Southeast	GA	Dougherty	Albany, GA
130970003	42	39		41		0.0	44	Southeast	GA	Douglas	Atlanta-Sandy Springs-Marietta, GA
131150003			45	45		0.0	45	Southeast	GA	Floyd	Rome, GA
131150005	57	43	24	41		0.0	81	Southeast	GA	Floyd	Rome, GA
131210001	47	40		44		0.0	54	Southeast	GA	Fulton	Atlanta-Sandy Springs-Marietta, GA
131210032	56	38	40	45		0.0	59	Southeast	GA	Fulton	Atlanta-Sandy Springs-Marietta, GA
131210048	58	41	39	46	yes	0.0	82	Southeast	GA	Fulton	Atlanta-Sandy Springs-Marietta, GA
131270004	46	60	85	64		0.0	85	Southeast	GA	Glynn	Brunswick, GA
132150011	53	41	43	46	yes	0.0	94	Southeast	GA	Muscogee	Columbus, GA-AL
132450091	54	61	43	53	yes	0.0	76	Southeast	GA	Richmond	Augusta-Richmond County, GA-SC
132550002	42	50		46		0.0	50	Southeast	GA	Spalding	Atlanta-Sandy Springs-Marietta, GA
133030001	57	39	54	50	yes	0.0	63	Southeast	GA	Washington	
150030010	38	39	30	36	yes	0.0	57	Not in PMREG Re	HI	Honolulu	Honolulu, HI
150030011	20	23	50	31	yes	0.0	91	Not in PMREG Re	HI	Honolulu	Honolulu, HI
150031001	25	29	22	25	yes	0.0	33	Not in PMREG Re	HI	Honolulu	Honolulu, HI
150032004	29	40	34	34	yes	0.0	57	Not in PMREG Re	HI	Honolulu	Honolulu, HI
150090006	66	49		58		0.4	93	Not in PMREG Re	HI	Maui	Kahului-Wailuku, HI
160010009	64	53	48	55	yes	0.0	90	Northwest	ID	Ada	Boise City-Nampa, ID
160010011	47			47		0.0	62	Northwest	ID	Ada	Boise City-Nampa, ID
160050015	45	50	64	53	yes	0.4	83	Northwest	ID	Bannock	Pocatello, ID
160050020		54	46	50		0.0	75	Northwest	ID	Bannock	Pocatello, ID
160170004	36	34	31	34		0.0	48	Northwest	ID	Bonner	
160170005			50	50		0.0	131	Northwest	ID	Bonner	
160270002	67	70	69	69	yes	0.4	98	Northwest	ID	Canyon	Boise City-Nampa, ID
160690006	46			46		0.0	46	Northwest	ID	Nez Perce	Lewiston, ID-WA
160690009	35			35		0.0	35	Northwest	ID	Nez Perce	Lewiston, ID-WA
160690012	38			38		0.0	38	Northwest	ID	Nez Perce	Lewiston, ID-WA
160690013	32			32		0.0	32	Northwest	ID	Nez Perce	Lewiston, ID-WA
160690222	45			45		0.0	45	Northwest	ID	Nez Perce	Lewiston, ID-WA
160770011	54	98	52	68	yes	1.0	110	Northwest	ID	Power	Pocatello, ID
160790017	39	44	35	39	yes	0.0	58	Northwest	ID	Shoshone	
170310001	51	50	46	49	yes	0.0	63	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170310022	67	51	41	53	yes	0.0	78	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170310060	65	44	53	54	yes	0.0	98	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170311016	85	69	60	71	yes	0.0	93	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI

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170311901	54	54	37	48	yes	0.0	88	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170312001	71	43	53	56	yes	0.0	79	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170313301	58	60	34	51	yes	0.0	62	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170314201	61	40	41	47	yes	0.0	80	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170770004	41	38	37	39	yes	0.0	65	Industrial Midwes	IL	Jackson	Carbondale, IL
170990007	73	62	41	59	yes	0.0	86	Industrial Midwes	IL	La Salle	Ottawa-Streator, IL
171170002	53	34	30	39	yes	0.0	54	Industrial Midwes	IL	Macoupin	St. Louis, MO-IL
171190010	62	67	52	60	yes	0.0	115	Industrial Midwes	IL	Madison	St. Louis, MO-IL
171191007	96	79	54	76	yes	0.0	110	Industrial Midwes	IL	Madison	St. Louis, MO-IL
171193007	61	63	42	55	yes	0.0	94	Industrial Midwes	IL	Madison	St. Louis, MO-IL
171430037	51	40	28	40	yes	0.0	65	Industrial Midwes	IL	Peoria	Peoria, IL
171630010	58	41	53	51	yes	0.0	60	Industrial Midwes	IL	Saint Clair	St. Louis, MO-IL
171971002	55	35	33	41	yes	0.0	71	Industrial Midwes	IL	Will	Chicago-Naperville-Joliet, IL-IN-WI
180030004	51			51		0.0	51	Industrial Midwes	IN	Allen	Fort Wayne, IN
180190006	51	48	44	48	yes	0.0	53	Industrial Midwes	IN	Clark	Louisville/Jefferson County, KY-IN
180372001	48	36	36	40		0.0	49	Industrial Midwes	IN	Dubois	Jasper, IN
180630001	77			77		0.0	77	Industrial Midwes	IN	Hendricks	Indianapolis-Carmel, IN
180630002	48	44	24	39		0.0	52	Industrial Midwes	IN	Hendricks	Indianapolis-Carmel, IN
180630003	46			46		0.0	46	Industrial Midwes	IN	Hendricks	Indianapolis-Carmel, IN
180890006	72	44	38	51	yes	0.0	101	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180890022	93	62	51	69	yes	0.3	115	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180890023	49	42	50	47	yes	0.0	71	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180890031	65	58	46	56	yes	0.0	77	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180892010	36	46	41	41		0.0	46	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180950009	46			46		0.0	47	Industrial Midwes	IN	Madison	Anderson, IN
180970042	36			36		0.0	41	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
180970043	59	55	56	57		0.0	59	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
180970066	53	39	26	39		0.0	57	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
180970071	51	49	51	50	yes	0.0	67	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
180970073	45	40	37	41	yes	0.0	50	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
180970083	43			43		0.0	44	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
180970084			49	49		0.0	49	Industrial Midwes	IN	Marion	Indianapolis-Carmel, IN
181230006	79	68	19	55		0.0	90	Industrial Midwes	IN	Perry	
181230007	54	42	27	41		0.0	61	Industrial Midwes	IN	Perry	
181270022	61			61		0.0	65	Industrial Midwes	IN	Porter	Chicago-Naperville-Joliet, IL-IN-WI

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181270023	58	57	37	51	yes	0.0	82	Industrial Midwes	IN	Porter	Chicago-Naperville-Joliet, IL-IN-WI
181270024	56	40	36	44	yes	0.0	65	Industrial Midwes	IN	Porter	Chicago-Naperville-Joliet, IL-IN-WI
181410015	47			47		0.0	51	Industrial Midwes	IN	St. Joseph	South Bend-Mishawaka, IN-MI
181630006	51	45		48		0.0	55	Industrial Midwes	IN	Vanderburgh	Evansville, IN-KY
181630012	48	37	38	41		0.0	49	Industrial Midwes	IN	Vanderburgh	Evansville, IN-KY
181630021			41	41		0.0	41	Industrial Midwes	IN	Vanderburgh	Evansville, IN-KY
181670018	54	38	42	45	yes	0.0	57	Industrial Midwes	IN	Vigo	Terre Haute, IN
181670020	60			60		0.0	60	Industrial Midwes	IN	Vigo	Terre Haute, IN
181830001	132	106	56	98		0.0	151	Industrial Midwes	IN	Whitley	Fort Wayne, IN
181830002	111	123	72	102		2.2	238	Industrial Midwes	IN	Whitley	Fort Wayne, IN
190130008	57	47	50	51	yes	0.0	57	Upper Midwest	IA	Black Hawk	Waterloo-Cedar Falls, IA
190330018	95	84	68	82	yes	0.3	104	Upper Midwest	IA	Cerro Gordo	Mason City, IA
190330020	61	43	48	51	yes	0.8	92	Upper Midwest	IA	Cerro Gordo	Mason City, IA
190550001			33	33		0.0	47	Upper Midwest	IA	Delaware	
191032001		43	39	41		0.0	53	Upper Midwest	IA	Johnson	Iowa City, IA
191130037	47	48	39	45	yes	0.0	53	Upper Midwest	IA	Linn	Cedar Rapids, IA
191370002	40	36	38	38	yes	0.0	58	Upper Midwest	IA	Montgomery	
191390015	63	57	54	58	yes	0.0	80	Industrial Midwes	IA	Muscatine	Muscatine, IA
191471002	47	40	47	45	yes	0.0	61	Upper Midwest	IA	Palo Alto	
191530030	47	39	42	43	yes	0.0	57	Upper Midwest	IA	Polk	Des Moines-West Des Moines, IA
191532510	48	34	35	39	yes	0.0	58	Upper Midwest	IA	Polk	Des Moines-West Des Moines, IA
191550009	55	51	48	51	yes	0.0	59	Upper Midwest	IA	Pottawattamie	Omaha-Council Bluffs, NE-IA
191550010	57	58	37	51		0.0	71	Upper Midwest	IA	Pottawattamie	Omaha-Council Bluffs, NE-IA
191630015	48	45	37	43	yes	0.0	51	Industrial Midwes	IA	Scott	Davenport-Moline-Rock Island, IA-IL
191630017	100	85	96	94	yes	0.0	113	Industrial Midwes	IA	Scott	Davenport-Moline-Rock Island, IA-IL
191630018	50	40	34	41	yes	0.0	50	Industrial Midwes	IA	Scott	Davenport-Moline-Rock Island, IA-IL
191630019	75	57	44	59	yes	0.0	112	Industrial Midwes	IA	Scott	Davenport-Moline-Rock Island, IA-IL
191770006	44	35	35	38	yes	0.0	47	Upper Midwest	IA	Van Buren	
191930017	55	48		52		0.0	96	Upper Midwest	IA	Woodbury	Sioux City, IA-NE-SD
191930019			43	43		0.0	54	Upper Midwest	IA	Woodbury	Sioux City, IA-NE-SD
200570002		50	56	53		0.0	94	Upper Midwest	KS	Ford	Dodge City, KS
201250006	58	44	41	48	yes	0.0	78	Upper Midwest	KS	Montgomery	Coffeyville, KS
201330002	84	72	42	66	yes	0.0	120	Upper Midwest	KS	Neosho	
201730008	43	39	40	41	yes	0.0	53	Upper Midwest	KS	Sedgwick	Wichita, KS
201730009	50	49	39	46	yes	0.0	61	Upper Midwest	KS	Sedgwick	Wichita, KS

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201730010	49	53	43	48	yes	0.0	61	Upper Midwest	KS	Sedgwick	Wichita, KS
201731012	49	51	41	47	yes	0.0	61	Upper Midwest	KS	Sedgwick	Wichita, KS
201770013	40	60	67	56	yes	0.0	82	Upper Midwest	KS	Shawnee	Topeka, KS
201810001	45	66	56	56		0.0	87	Upper Midwest	KS	Sherman	
202090015	76	103	47	75	yes	0.0	110	Upper Midwest	KS	Wyandotte	Kansas City, MO-KS
202090021	52	85	41	59	yes	0.0	86	Upper Midwest	KS	Wyandotte	Kansas City, MO-KS
210190002	94	87	49	77	yes	0.0	117	Industrial Midwes	KY	Boyd	Huntington-Ashland, WV-KY-OH
210290006	60			60		0.0	82	Industrial Midwes	KY	Bullitt	Louisville/Jefferson County, KY-IN
210430500		27	22	25		0.0	27	Industrial Midwes	KY	Carter	
210670014	43	36	30	36	yes	0.0	63	Industrial Midwes	KY	Fayette	Lexington-Fayette, KY
211010014	44		38	41		0.0	51	Industrial Midwes	KY	Henderson	Evansville, IN-KY
211110043	50	44	40	45	yes	0.0	57	Industrial Midwes	KY	Jefferson	Louisville/Jefferson County, KY-IN
211110044	49	43	36	43	yes	0.0	57	Industrial Midwes	KY	Jefferson	Louisville/Jefferson County, KY-IN
211451004	39	40	33	37	yes	0.0	54	Industrial Midwes	KY	McCracken	Paducah, KY-IL
211570018	50	33	33	39	yes	0.0	68	Industrial Midwes	KY	Marshall	
211830032	45	28	32	35	yes	0.0	51	Industrial Midwes	KY	Ohio	
211930003	58	43		51		0.0	91	Industrial Midwes	KY	Perry	
220170008	64	68	37	56	yes	0.0	99	Southeast	LA	Caddo	Shreveport-Bossier City, LA
220330009			58	58		0.0	63	Southeast	LA	East Baton Rouge	Baton Rouge, LA
220550007			24	24		0.0	24	Southeast	LA	Lafayette	Lafayette, LA
220870007	51	36	40	42		0.0	87	Southeast	LA	St. Bernard	New Orleans-Metairie-Kenner, LA
221210001	75	63	89	76		0.0	89	Southeast	LA	West Baton Rouge	Baton Rouge, LA
230010011	33	37	34	35	yes	0.0	46	Northeast	ME	Androscoggin	Lewiston-Auburn, ME
230030013	64	87	78	76		0.0	111	Northeast	ME	Aroostook	
230030014			47	47		0.0	47	Northeast	ME	Aroostook	
230031008	31			31		0.0	31	Northeast	ME	Aroostook	
230031011	65	55	54	58	yes	0.0	87	Northeast	ME	Aroostook	
230031019	23	52	49	41		0.0	63	Northeast	ME	Aroostook	
230050015	67	85	55	69	yes	0.0	122	Northeast	ME	Cumberland	Portland-South Portland-Biddeford, ME
230110016	36	35	35	35	yes	0.0	64	Northeast	ME	Kennebec	Augusta-Waterville, ME
230190002	53	44	39	45		0.0	55	Northeast	ME	Penobscot	Bangor, ME
230190016		21	23	22		0.0	40	Northeast	ME	Penobscot	Bangor, ME
240031003		27	36	32		0.0	40	Northeast	MD	Anne Arundel	Baltimore-Towson, MD
245100008	49	44	37	43	yes	0.0	51	Northeast	MD	Baltimore (City)	Baltimore-Towson, MD
245100035	56	70		63		0.0	70	Northeast	MD	Baltimore (City)	Baltimore-Towson, MD

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250132009	35	35	38	36	yes	0.0	57	Northeast	MA	Hampden	Springfield, MA
250154002	29	25	24	26		0.0	33	Northeast	MA	Hampshire	Springfield, MA
250170009	31	27	31	30	yes	0.0	33	Northeast	MA	Middlesex	Boston-Cambridge-Quincy, MA-NH
250250002	38	39	69	49		0.0	69	Northeast	MA	Suffolk	Boston-Cambridge-Quincy, MA-NH
250250027	54	33	42	43		0.0	54	Northeast	MA	Suffolk	Boston-Cambridge-Quincy, MA-NH
250250042	24	28	31	28	yes	0.0	40	Northeast	MA	Suffolk	Boston-Cambridge-Quincy, MA-NH
250270023	53	42	67	54	yes	0.0	85	Northeast	MA	Worcester	Worcester, MA
260490021	19			19		0.0	19	Industrial Midwes	MI	Genesee	Flint, MI
260810007	59	36	27	41		0.0	59	Industrial Midwes	MI	Kent	Grand Rapids-Wyoming, MI
260810020	42	25	29	32		0.0	60	Industrial Midwes	MI	Kent	Grand Rapids-Wyoming, MI
261410901	42			42		0.0	58	Industrial Midwes	MI	Presque Isle	
261630001	49	37	36	41	yes	0.0	60	Industrial Midwes	MI	Wayne	Detroit-Warren-Livonia, MI
261630005			36	36		0.0	52	Industrial Midwes	MI	Wayne	Detroit-Warren-Livonia, MI
261630015	57	52	43	51	yes	0.0	74	Industrial Midwes	MI	Wayne	Detroit-Warren-Livonia, MI
261630033	73	58	46	59	yes	0.3	79	Industrial Midwes	MI	Wayne	Detroit-Warren-Livonia, MI
270530966	81	47	50	59	yes	0.0	89	Upper Midwest	MN	Hennepin	Minneapolis-St. Paul-Bloomington, MN-WI
270531007	57	40	43	47	yes	0.0	63	Upper Midwest	MN	Hennepin	Minneapolis-St. Paul-Bloomington, MN-WI
270532006	36			36		0.0	36	Upper Midwest	MN	Hennepin	Minneapolis-St. Paul-Bloomington, MN-WI
271095008		50	53	52		0.0	71	Upper Midwest	MN	Olmsted	Rochester, MN
271230021	39			39		0.0	53	Upper Midwest	MN	Ramsey	Minneapolis-St. Paul-Bloomington, MN-WI
271230866	74	45	49	56	yes	0.0	103	Upper Midwest	MN	Ramsey	Minneapolis-St. Paul-Bloomington, MN-WI
271230868	46	38	51	45	yes	0.0	59	Upper Midwest	MN	Ramsey	Minneapolis-St. Paul-Bloomington, MN-WI
271231003	56	53	44	51	yes	0.0	63	Upper Midwest	MN	Ramsey	Minneapolis-St. Paul-Bloomington, MN-WI
271370032	72	48	49	56	yes	0.0	73	Upper Midwest	MN	Saint Louis	Duluth, MN-WI
271377001	24	37	30	30	yes	0.0	42	Upper Midwest	MN	Saint Louis	Duluth, MN-WI
271630009	45	50	42	46	yes	0.0	64	Upper Midwest	MN	Washington	Minneapolis-St. Paul-Bloomington, MN-WI
280590006	42			42		0.0	42	Southeast	MS	Jackson	Pascagoula, MS
290210005	63	84	68	72	yes	0.0	86	Upper Midwest	MO	Buchanan	St. Joseph, MO-KS
290770032	37	34	26	32	yes	0.0	39	Upper Midwest	MO	Greene	Springfield, MO
290950034	50	55	38	48	yes	0.0	63	Upper Midwest	MO	Jackson	Kansas City, MO-KS
290950035	38	50	34	41		0.0	51	Upper Midwest	MO	Jackson	Kansas City, MO-KS
290970003	72	64	69	68	yes	0.3	106	Upper Midwest	MO	Jasper	Joplin, MO
291370001	32	32	24	29	yes	0.0	36	Upper Midwest	MO	Monroe	
291890015		43	34	39		0.0	46	Industrial Midwes	MO	Saint Louis	St. Louis, MO-IL
291895001	39	84		62		0.0	84	Industrial Midwes	MO	Saint Louis	St. Louis, MO-IL

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295100085	50	49	30	43	yes	0.0	59	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
295100086	46	46	31	41	yes	0.0	54	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
295100087	66	38	40	48		0.0	70	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
295100088	94	75	74	81	yes	0.4	110	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
295100093	97	113	82	97	yes	0.7	126	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
300030011	155	102		129		2.0	155	Northwest	MT	Big Horn	
300030014	30	42		36		0.0	42	Northwest	MT	Big Horn	
300030017	38	34		36		0.0	38	Northwest	MT	Big Horn	
300030018	77	45		61		0.0	95	Northwest	MT	Big Horn	
300030019	62	109		86		0.0	120	Northwest	MT	Big Horn	
300030023	65	100		83		0.0	100	Northwest	MT	Big Horn	
300030026	65	34		50		0.0	68	Northwest	MT	Big Horn	
300290007	56	37	40	44	yes	0.0	105	Northwest	MT	Flathead	Kalispell, MT
300290009	87	95	52	78	yes	0.0	106	Northwest	MT	Flathead	Kalispell, MT
300290047	78	50	55	61	yes	0.0	115	Northwest	MT	Flathead	Kalispell, MT
300350101	80			80		0.0	97	Northwest	MT	Glacier	
300430019	90	59		75		0.0	90	Northwest	MT	Jefferson	Helena, MT
300430022	42	161		102		1.9	161	Northwest	MT	Jefferson	Helena, MT
300470013	46			46		0.0	79	Northwest	MT	Lake	
300470028	55	52		54		0.0	100	Northwest	MT	Lake	
300530018	55	59	42	52	yes	0.0	79	Northwest	MT	Lincoln	
300630021	48	34	34	39		0.0	62	Northwest	MT	Missoula	Missoula, MT
300630022	54	37		46		0.0	132	Northwest	MT	Missoula	Missoula, MT
300630024	76	60	44	60	yes	0.0	104	Northwest	MT	Missoula	Missoula, MT
300630031	54	46	24	41		0.0	129	Northwest	MT	Missoula	Missoula, MT
300630034	90	38		64		2.2	170	Northwest	MT	Missoula	Missoula, MT
300830001			74	74			105	Northwest	MT	Richland	
300870307	59	41	75	58	yes	0.0	112	Northwest	MT	Rosebud	
300870766	54	50		52		0.0	54	Northwest	MT	Rosebud	
300890007	72	57	19	49		0.0	104	Northwest	MT	Sanders	
300890009		30		30		0.0	50	Northwest	MT	Sanders	
300930005	80	67	79	75	yes	0.0	124	Northwest	MT	Silver Bow	Butte-Silver Bow, MT
301111065	55			55		0.0	61	Northwest	MT	Yellowstone	Billings, MT
310250002	69	58	45	57	yes	0.0	111	Upper Midwest	NE	Cass	Omaha-Council Bluffs, NE-IA
310250008	83	79	46	69	yes	0.3	130	Upper Midwest	NE	Cass	Omaha-Council Bluffs, NE-IA

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310250009	87	79	73	80	yes	0.3	132	Upper Midwest	NE	Cass	Omaha-Council Bluffs, NE-IA
310470001	77	56	42	58	yes	0.0	119	Upper Midwest	NE	Dawson	Lexington, NE
310470003	59	53	65	59	yes	0.0	82	Upper Midwest	NE	Dawson	Lexington, NE
310550028	59	59	45	54		0.0	83	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550040	61	76	39	59	yes	0.0	78	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550044	49	66	44	53	yes	0.0	74	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550045	96	106	75	92	yes	0.0	132	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550054	55	71	52	59	yes	0.0	107	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
320030007	58			58		0.0	153	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030020	67	80	58	68	yes	0.0	131	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030022	54	58	58	57	yes	0.3	128	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030023	66	57	54	59	yes	0.0	121	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030043	47	54	40	47	yes	0.0	76	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030071	37			37		0.0	66	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030072	41	45	36	41	yes	0.0	59	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030073	34	36	29	33	yes	0.0	54	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030075	53	65	51	56	yes	0.0	95	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030298	48	53	46	49	yes	0.0	107	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030539	68			68		0.0	110	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030561	79	69	58	69	yes	0.0	106	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030601	45	46	42	44	yes	0.0	84	Southwest	NV	Clark	Las Vegas-Paradise, NV
320031019	35	45	45	42	yes	0.0	81	Southwest	NV	Clark	Las Vegas-Paradise, NV
320031021	55	60	44	53	yes	0.0	76	Southwest	NV	Clark	Las Vegas-Paradise, NV
320032002	58	66	56	60	yes	0.0	100	Southwest	NV	Clark	Las Vegas-Paradise, NV
320070004	72	35		54		0.0	88	Northwest	NV	Elko	Elko, NV
320070005		21	72	47		0.5	165	Northwest	NV	Elko	Elko, NV
320211017	55	57	26	46		0.0	87	Northwest	NV	Mineral	
320230011	54	45	57	52	yes	0.3	81	Southern Californ	NV	Nye	Pahrump, NV
320230012	86	60		73		0.7	173	Southern Californ	NV	Nye	Pahrump, NV
320230013	56	54	50	53	yes	0.0	93	Southern Californ	NV	Nye	Pahrump, NV
320230014	122	103	151	125	yes	5.2	283	Southern Californ	NV	Nye	Pahrump, NV
320230015			69	69		0.0	69	Southern Californ	NV	Nye	Pahrump, NV
320310016	67	84	72	74	yes	0.0	92	Northwest	NV	Washoe	Reno-Sparks, NV
320310020	56	68	57	60	yes	0.0	111	Northwest	NV	Washoe	Reno-Sparks, NV
320310022	115	87	88	97	yes	0.0	130	Northwest	NV	Washoe	Reno-Sparks, NV

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320310025	42	44	42	43	yes	0.0	64	Northwest	NV	Washoe	Reno-Sparks, NV
320310030	93	76	75	81	yes	0.0	108	Northwest	NV	Washoe	Reno-Sparks, NV
320311005	66	63	64	64	yes	0.0	101	Northwest	NV	Washoe	Reno-Sparks, NV
330110020	31	22	31	28	yes	0.0	52	Northeast	NH	Hillsborough	Manchester-Nashua, NH
330150014	28	25	30	28	yes	0.0	37	Northeast	NH	Rockingham	Boston-Cambridge-Quincy, MA-NH
340011006	47	93	76	72		0.0	93	Northeast	NJ	Atlantic	Atlantic City, NJ
340030004	59	86	69	71		0.0	86	Northeast	NJ	Bergen	New York-Northern NJ-Long Island, NY-NJ-P
340070003	47	50		49		0.0	50	Northeast	NJ	Camden	Phila.-Camden-Wilmington, PA-NJ-DE-MD
340070009	71	49	80	67	yes	0.0	94	Northeast	NJ	Camden	Phila.-Camden-Wilmington, PA-NJ-DE-MD
340171003	49	74	70	64	yes	0.0	93	Northeast	NJ	Hudson	New York-Northern NJ-Long Island, NY-NJ-P
340210008	48	45	37	43		0.0	53	Northeast	NJ	Mercer	Trenton-Ewing, NJ
350010019	43	40		42		0.0	66	Southwest	NM	Bernalillo	Albuquerque, NM
350010023	35	32	35	34	yes	0.0	107	Southwest	NM	Bernalillo	Albuquerque, NM
350010026	99	100	72	90	yes	1.0	131	Southwest	NM	Bernalillo	Albuquerque, NM
350010028	48	38		43		0.0	49	Southwest	NM	Bernalillo	Albuquerque, NM
350010029	115	103	58	92		0.3	143	Southwest	NM	Bernalillo	Albuquerque, NM
350011013	70	61	57	63	yes	0.0	97	Southwest	NM	Bernalillo	Albuquerque, NM
350011014	66	55		61		0.0	80	Southwest	NM	Bernalillo	Albuquerque, NM
350015011	44			44		0.0	92	Southwest	NM	Bernalillo	Albuquerque, NM
350050005	32	59	65	52	yes	0.0	98	Southwest	NM	Chaves	Roswell, NM
350130016	113	218	107	146	yes	8.0	276	Southwest	NM	Dona Ana	Las Cruces, NM
350130017	109	211	113	144	yes	7.7	283	Southwest	NM	Dona Ana	Las Cruces, NM
350130019	107	178	82	122	yes	5.7	230	Southwest	NM	Dona Ana	Las Cruces, NM
350130020	126	257	135	173	yes	10.5	358	Southwest	NM	Dona Ana	Las Cruces, NM
350130021	119	196	93	136		3.7	271	Southwest	NM	Dona Ana	Las Cruces, NM
350130024	58	103	46	69	yes	1.7	168	Southwest	NM	Dona Ana	Las Cruces, NM
350170009	25	39		32		0.0	39	Southwest	NM	Grant	Silver City, NM
350171002	38	23	32	31	yes	0.0	81	Southwest	NM	Grant	Silver City, NM
350171003			28	28		0.0	28	Southwest	NM	Grant	Silver City, NM
350250008	55	41	50	49		0.0	119	Southwest	NM	Lea	Hobbs, NM
350290001	35	88	35	53	yes	0.0	139	Southwest	NM	Luna	Deming, NM
350290003	84	313	73	157	yes	8.7	407	Southwest	NM	Luna	Deming, NM
350311236		62	69	66		0.0	105	Southwest	NM	McKinley	Gallup, NM
350359017	39			39		0.0	121	Southwest	NM	Otero	Alamogordo, NM
350430001	25	25	31	27	yes	0.0	45	Southwest	NM	Sandoval	Albuquerque, NM

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350439004	83	105	70	86	yes	0.3	139	Southwest	NM	Sandoval	Albuquerque, NM
350439012	52			52		0.0	54	Southwest	NM	Sandoval	Albuquerque, NM
350450006	29	116		73		0.0	116	Southwest	NM	San Juan	Farmington, NM
350450019		22	44	33		0.0	73	Southwest	NM	San Juan	Farmington, NM
350451233	72	61	55	63	yes	0.0	119	Southwest	NM	San Juan	Farmington, NM
350490020	30	26	34	30	yes	0.0	40	Southwest	NM	Santa Fe	Santa Fe, NM
350550005	44	76	41	54		0.0	76	Southwest	NM	Taos	Taos, NM
350559016	64			64		0.0	70	Southwest	NM	Taos	Taos, NM
360337003	34	32	17	28		0.0	45	Northeast	NY	Franklin	Malone, NY
370350004	43	34	26	34	yes	0.0	44	Southeast	NC	Catawba	Hickory-Lenoir-Morganton, NC
370510009	36	33	24	31	yes	0.0	37	Southeast	NC	Cumberland	Fayetteville, NC
370610002			24	24		0.0	24	Southeast	NC	Duplin	
370630001	35			35		0.0	50	Southeast	NC	Durham	Durham, NC
370650099	14			14		0.0	14	Southeast	NC	Edgecombe	Rocky Mount, NC
370670022	40	32	26	33	yes	0.0	41	Southeast	NC	Forsyth	Winston-Salem, NC
370670023	44	36	32	37	yes	0.0	52	Southeast	NC	Forsyth	Winston-Salem, NC
370810013	37	31	23	30	yes	0.0	43	Southeast	NC	Guilford	Greensboro-High Point, NC
370891006	35	31	27	31	yes	0.0	38	Southeast	NC	Henderson	Asheville, NC
371190003	46	45	38	43	yes	0.0	47	Southeast	NC	Mecklenburg	Charlotte-Gastonia-Concord, NC-SC
371190041		36	28	32		0.0	36	Southeast	NC	Mecklenburg	Charlotte-Gastonia-Concord, NC-SC
371190042		33	33	33		0.0	56	Southeast	NC	Mecklenburg	Charlotte-Gastonia-Concord, NC-SC
371191001	44	36	33	38		0.0	49	Southeast	NC	Mecklenburg	Charlotte-Gastonia-Concord, NC-SC
371191005	59	43	40	47	yes	0.0	70	Southeast	NC	Mecklenburg	Charlotte-Gastonia-Concord, NC-SC
371290002		21		21		0.0	21	Southeast	NC	New Hanover	Wilmington, NC
371330005	30			30		0.0	37	Southeast	NC	Onslow	Jacksonville, NC
371730002	37			37		0.0	37	Southeast	NC	Swain	
371830014	44	33	26	34	yes	0.0	57	Southeast	NC	Wake	Raleigh-Cary, NC
371910005	31			31		0.0	39	Southeast	NC	Wayne	Goldsboro, NC
380130004	27	28	23	26	yes	0.0	32	Upper Midwest	ND	Burke	
380150003	35	36	27	33	yes	0.0	53	Upper Midwest	ND	Burleigh	Bismarck, ND
380171004	40	27	21	29	yes	0.0	47	Upper Midwest	ND	Cass	Fargo, ND-MN
380250003	34	40	32	35	yes	0.0	53	Upper Midwest	ND	Dunn	
380530002	25	31	25	27	yes	0.0	45	Upper Midwest	ND	McKenzie	
380530108	20	10		15		0.0	25	Upper Midwest	ND	McKenzie	
380550113	16	10		13		0.0	20	Upper Midwest	ND	McLean	

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380570004	30	60	27	39	yes	0.0	69	Upper Midwest	ND	Mercer	
390030006	35	32	36	34		0.0	38	Industrial Midwes	OH	Allen	Lima, OH
390030007	27	28	31	29		0.0	37	Industrial Midwes	OH	Allen	Lima, OH
390030008	30	28	32	30		0.0	39	Industrial Midwes	OH	Allen	Lima, OH
390170003	44	41	33	39	yes	0.0	48	Industrial Midwes	OH	Butler	Cincinnati-Middletown, OH-KY-IN
390170015	55	47	36	46	yes	0.0	62	Industrial Midwes	OH	Butler	Cincinnati-Middletown, OH-KY-IN
390290020	52	48	45	48	yes	0.0	68	Industrial Midwes	OH	Columbiana	East Liverpool-Salem, OH
390290022	58	55	47	53	yes	0.0	70	Industrial Midwes	OH	Columbiana	East Liverpool-Salem, OH
390350027	53	57	33	48		0.0	70	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350038	66	63	49	59	yes	0.0	78	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350045	47	56	44	49	yes	0.0	58	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350060	77	63	46	62	yes	0.0	85	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350065	73	95	74	81	yes	0.0	118	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390351002	44	43	32	40	yes	0.0	58	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390490024	76	79	56	70	yes	0.0	123	Industrial Midwes	OH	Franklin	Columbus, OH
390490034	56			56		0.0	59	Industrial Midwes	OH	Franklin	Columbus, OH
390570005	38	32	33	34	yes	0.0	48	Industrial Midwes	OH	Greene	Dayton, OH
390610014	49	45	42	45	yes	0.0	51	Industrial Midwes	OH	Hamilton	Cincinnati-Middletown, OH-KY-IN
390610040	45	39	40	41	yes	0.0	48	Industrial Midwes	OH	Hamilton	Cincinnati-Middletown, OH-KY-IN
390615001	46	38	40	41	yes	0.0	66	Industrial Midwes	OH	Hamilton	Cincinnati-Middletown, OH-KY-IN
390630002	30	30	27	29		0.0	33	Industrial Midwes	OH	Hancock	Findlay, OH
390630003	35	30	36	34	yes	0.0	42	Industrial Midwes	OH	Hancock	Findlay, OH
390630004	34	27	33	31	yes	0.0	35	Industrial Midwes	OH	Hancock	Findlay, OH
390810001	48	43	45	45	yes	0.0	53	Industrial Midwes	OH	Jefferson	Weirton-Steubenville, WV-OH
390810017	58	64	48	57	yes	0.0	65	Industrial Midwes	OH	Jefferson	Weirton-Steubenville, WV-OH
390811001	47			47		0.0	47	Industrial Midwes	OH	Jefferson	Weirton-Steubenville, WV-OH
390851001	52	48	32	44	yes	0.0	67	Industrial Midwes	OH	Lake	Cleveland-Elyria-Mentor, OH
390870010	38	25		32		0.0	39	Industrial Midwes	OH	Lawrence	Huntington-Ashland, WV-KY-OH
390870012		32	25	29		0.0	37	Industrial Midwes	OH	Lawrence	Huntington-Ashland, WV-KY-OH
390933002	47	44	35	42	yes	0.0	48	Industrial Midwes	OH	Lorain	Cleveland-Elyria-Mentor, OH
390951003	67	66	58	64	yes	0.0	88	Industrial Midwes	OH	Lucas	Toledo, OH
390990005	48	43	42	44	yes	0.0	54	Industrial Midwes	OH	Mahoning	Youngstown-Warren-Boardman, OH-PA
390990006	50	48	38	45	yes	0.0	54	Industrial Midwes	OH	Mahoning	Youngstown-Warren-Boardman, OH-PA
391137001	58	45	43	49	yes	0.0	61	Industrial Midwes	OH	Montgomery	Dayton, OH
391450013	41	29	22	31	yes	0.0	44	Industrial Midwes	OH	Scioto	Portsmouth, OH

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391450019	38	30	24	31	yes	0.0	38	Industrial Midwes	OH	Scioto	Portsmouth, OH
391450020	44	37	33	38	yes	0.0	54	Industrial Midwes	OH	Scioto	Portsmouth, OH
391450021	66	49	41	52	yes	0.0	72	Industrial Midwes	OH	Scioto	Portsmouth, OH
391450022	47	39	34	40	yes	0.0	51	Industrial Midwes	OH	Scioto	Portsmouth, OH
391550005	44	40	31	38	yes	0.0	55	Industrial Midwes	OH	Trumbull	Youngstown-Warren-Boardman, OH-PA
391550006	39		33	36		0.0	46	Industrial Midwes	OH	Trumbull	Youngstown-Warren-Boardman, OH-PA
391550007	45	41		43		0.0	62	Industrial Midwes	OH	Trumbull	Youngstown-Warren-Boardman, OH-PA
391670006	59			59		0.0	59	Industrial Midwes	OH	Washington	Parkersburg-Marietta-Vienna, WV-OH
391750008	167			167		2.0	167	Industrial Midwes	OH	Wyandot	
391750009	65			65		0.0	66	Industrial Midwes	OH	Wyandot	
400019009		30	28	29		0.0	33	Southeast	OK	Adair	
400159008	43	47	35	42	yes	0.0	64	Southwest	OK	Caddo	
400219002	48	35	41	41		0.0	60	Southeast	OK	Cherokee	Tahlequah, OK
400719010	88	71	68	76		0.0	91	Southeast	OK	Kay	Ponca City, OK
400979014	45	33	42	40		0.0	49	Southeast	OK	Mayes	
401010167	66	56	52	58	yes	0.0	106	Southeast	OK	Muskogee	Muskogee, OK
401019019			49	49		0.0	60	Southeast	OK	Muskogee	Muskogee, OK
401090035	51	39	44	45	yes	0.0	120	Southeast	OK	Oklahoma	Oklahoma City, OK
401091037		49	47	48		0.0	116	Southeast	OK	Oklahoma	Oklahoma City, OK
401159004	68	56	56	60	yes	0.0	80	Southeast	OK	Ottawa	Miami, OK
401159005	48	27		38		0.0	65	Southeast	OK	Ottawa	Miami, OK
401159006	44	33		39		0.0	45	Southeast	OK	Ottawa	Miami, OK
401159007	50	48		49		0.0	52	Southeast	OK	Ottawa	Miami, OK
401159008	41	38		40		0.0	44	Southeast	OK	Ottawa	Miami, OK
401210415	56	16		36		0.0	56	Southeast	OK	Pittsburg	McAlester, OK
401359015	48	42	41	44		0.0	60	Southeast	OK	Sequoyah	Fort Smith, AR-OK
401430110	90	85	61	79	yes	2.0	225	Southeast	OK	Tulsa	Tulsa, OK
401430191	54	36	77	56	yes	0.0	84	Southeast	OK	Tulsa	Tulsa, OK
410090004	29	19		24		0.0	29	Northwest	OR	Columbia	Portland-Vancouver-Beaverton, OR-WA
410170120	40	78		59		0.0	78	Northwest	OR	Deschutes	Bend, OR
410290133			42	42		0.0	42	Northwest	OR	Jackson	Medford, OR
410292129	78	47	46	57	yes	0.0	93	Northwest	OR	Jackson	Medford, OR
410294001	69	56	46	57	yes	0.0	92	Northwest	OR	Jackson	Medford, OR
410330114	39	43		41		0.0	49	Northwest	OR	Josephine	Grants Pass, OR
410350004	71	76	75	74	yes	0.0	88	Northwest	OR	Klamath	Klamath Falls, OR

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410390013	38	38	36	37	yes	0.0	65	Northwest	OR	Lane	Eugene-Springfield, OR
410390058	43	45	49	46	yes	0.0	78	Northwest	OR	Lane	Eugene-Springfield, OR
410390060	62	41	50	51		0.0	62	Northwest	OR	Lane	Eugene-Springfield, OR
410392013	46	44	45	45	yes	0.0	59	Northwest	OR	Lane	Eugene-Springfield, OR
410510009	48	38	43	43	yes	0.0	81	Northwest	OR	Multnomah	Portland-Vancouver-Beaverton, OR-WA
410510080		34	28	31		0.0	41	Northwest	OR	Multnomah	Portland-Vancouver-Beaverton, OR-WA
410510246	36	30	34	33		0.0	36	Northwest	OR	Multnomah	Portland-Vancouver-Beaverton, OR-WA
410590121	55	36	40	44		0.0	64	Northwest	OR	Umatilla	Pendleton-Hermiston, OR
410610119	53	29	33	38		0.0	53	Northwest	OR	Union	La Grande, OR
420030002	60	49	44	51	yes	0.0	64	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030021	53			53		0.0	60	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030031	58	41	39	46	yes	0.0	62	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030064	82	73	58	71	yes	0.0	87	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030067	44	42	28	38	yes	0.0	54	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030092	44	54	50	49		0.0	61	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030095	46			46		0.0	51	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420030116	53	41	33	42	yes	0.0	63	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420031301	61	68	62	64	yes	0.0	84	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420033006	83	68	52	68	yes	0.0	99	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420033007	47	43	36	42	yes	0.0	50	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420037004	107	82	68	86	yes	0.0	112	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420070014	69	49	40	53	yes	0.0	80	Industrial Midwes	PA	Beaver	Pittsburgh, PA
420110011	34	32	20	29		0.0	39	Northeast	PA	Berks	Reading, PA
420110015	43	51		47		0.0	82	Northeast	PA	Berks	Reading, PA
420130801	47	44	35	42	yes	0.0	58	Northeast	PA	Blair	Altoona, PA
420170012	42	36		39		0.0	49	Northeast	PA	Bucks	Phila.-Camden-Wilmington, PA-NJ-DE-MD
420210011	48	44	42	45	yes	0.0	59	Industrial Midwes	PA	Cambria	Johnstown, PA
420430401	44	42	36	41	yes	0.0	48	Northeast	PA	Dauphin	Harrisburg-Carlisle, PA
420450002	39	45	33	39	yes	0.0	48	Northeast	PA	Delaware	Phila.-Camden-Wilmington, PA-NJ-DE-MD
420490003	50	41	30	40	yes	0.0	63	Industrial Midwes	PA	Erie	Erie, PA
420692006	43	35		39		0.0	48	Northeast	PA	Lackawanna	Scranton--Wilkes-Barre, PA
420710007	47	43	34	41	yes	0.0	50	Northeast	PA	Lancaster	Lancaster, PA
420730015	70	64	52	62	yes	0.0	77	Industrial Midwes	PA	Lawrence	New Castle, PA
420770004	37	38	31	35	yes	0.0	45	Northeast	PA	Lehigh	Allentown-Bethlehem-Easton, PA-NJ
420791101	52	39	32	41	yes	0.0	55	Northeast	PA	Luzerne	Scranton--Wilkes-Barre, PA

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420810100	36	41	35	37		0.0	49	Northeast	PA	Lycoming	Williamsport, PA
420910013	40	38		39		0.0	48	Northeast	PA	Montgomery	Phila.-Camden-Wilmington, PA-NJ-DE-MD
420950025	44	41		43		0.0	54	Northeast	PA	Northampton	Allentown-Bethlehem-Easton, PA-NJ
420951000	57	80	41	59	yes	0.0	90	Northeast	PA	Northampton	Allentown-Bethlehem-Easton, PA-NJ
421010004	41	46	40	42	yes	0.0	53	Northeast	PA	Philadelphia	Phila.-Camden-Wilmington, PA-NJ-DE-MD
421010449	36	37	36	36	yes	0.0	43	Northeast	PA	Philadelphia	Phila.-Camden-Wilmington, PA-NJ-DE-MD
421010649	59	64	46	56	yes	0.0	80	Northeast	PA	Philadelphia	Phila.-Camden-Wilmington, PA-NJ-DE-MD
421250005	51	45	35	44	yes	0.0	56	Industrial Midwes	PA	Washington	Pittsburgh, PA
421255001	49	46		48		0.0	53	Industrial Midwes	PA	Washington	Pittsburgh, PA
421290007	55	54		55		0.0	61	Industrial Midwes	PA	Westmoreland	Pittsburgh, PA
421290008	52	36		44		0.0	61	Industrial Midwes	PA	Westmoreland	Pittsburgh, PA
421330008	49	43	37	43	yes	0.0	52	Northeast	PA	York	York-Hanover, PA
440030002	24	24	25	24		0.0	36	Northeast	RI	Kent	Providence-New Bedford-Fall River, RI-MA
440070022	27	34	32	31	yes	0.0	41	Northeast	RI	Providence	Providence-New Bedford-Fall River, RI-MA
440070026	52	40	58	50	yes	0.0	62	Northeast	RI	Providence	Providence-New Bedford-Fall River, RI-MA
440070027	29	40	33	34	yes	0.0	42	Northeast	RI	Providence	Providence-New Bedford-Fall River, RI-MA
450030003	48			48		0.0	61	Southeast	SC	Aiken	Augusta-Richmond County, GA-SC
450110001	45			45		0.0	47	Southeast	SC	Barnwell	
450190003	41	30	31	34	yes	0.0	44	Southeast	SC	Charleston	Charleston-North Charleston, SC
450190046	32			32		0.0	32	Southeast	SC	Charleston	Charleston-North Charleston, SC
450190051			34	34		0.0	34	Southeast	SC	Charleston	Charleston-North Charleston, SC
450195501			29	29		0.0	29	Southeast	SC	Charleston	Charleston-North Charleston, SC
450250001	36	31	29	32	yes	0.0	52	Southeast	SC	Chesterfield	
450430006	54	59	60	58	yes	0.0	80	Southeast	SC	Georgetown	Georgetown, SC
450430009	47			47		0.0	47	Southeast	SC	Georgetown	Georgetown, SC
450430010	62	48	45	52		0.0	64	Southeast	SC	Georgetown	Georgetown, SC
450430011		47	48	48		0.0	60	Southeast	SC	Georgetown	Georgetown, SC
450430012		32	30	31		0.0	41	Southeast	SC	Georgetown	Georgetown, SC
450450008		37	14	26		0.0	37	Southeast	SC	Greenville	Greenville-Mauldin-Easley, SC
450450010	40	30		35		0.0	46	Southeast	SC	Greenville	Greenville-Mauldin-Easley, SC
450450015		38	32	35		0.0	42	Southeast	SC	Greenville	Greenville-Mauldin-Easley, SC
450451002	25			25		0.0	25	Southeast	SC	Greenville	Greenville-Mauldin-Easley, SC
450518001			55	55		0.0	63	Southeast	SC	Horry	Myrtle Beach-Conway-North Myrtle Beach, S
450630009	84	57	50	64	yes	0.0	90	Southeast	SC	Lexington	Columbia, SC
450630010	35	39	33	36		0.0	42	Southeast	SC	Lexington	Columbia, SC

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450790007	38			38		0.0	72	Southeast	SC	Richland	Columbia, SC
450790018	50	37	34	40	yes	0.0	56	Southeast	SC	Richland	Columbia, SC
450790019	49	36	34	40	yes	0.0	51	Southeast	SC	Richland	Columbia, SC
450791003	39	20		30		0.0	48	Southeast	SC	Richland	Columbia, SC
450830001	46			46		0.0	48	Southeast	SC	Spartanburg	Spartanburg, SC
450910005	43			43		0.0	52	Southeast	SC	York	Charlotte-Gastonia-Concord, NC-SC
460110002	48	58	58	55	yes	0.7	203	Upper Midwest	SD	Brookings	Brookings, SD
460130003	44	64	53	54	yes	0.0	81	Upper Midwest	SD	Brown	Aberdeen, SD
460290002	60	76	65	67	yes	0.3	86	Upper Midwest	SD	Codington	Watertown, SD
460330132	31	27	23	27	yes	0.3	65	Upper Midwest	SD	Custer	
460710001	31	30	20	27	yes	0.0	39	Upper Midwest	SD	Jackson	
460930001	40	31	34	35	yes	0.0	70	Upper Midwest	SD	Meade	Rapid City, SD
460990006	41	44	40	42	yes	0.0	61	Upper Midwest	SD	Minnehaha	Sioux Falls, SD
460990007	42			42		0.0	49	Upper Midwest	SD	Minnehaha	Sioux Falls, SD
460990008		41	40	41		0.0	54	Upper Midwest	SD	Minnehaha	Sioux Falls, SD
461030013	84	70	63	72	yes	0.0	88	Upper Midwest	SD	Pennington	Rapid City, SD
461030020	88	97	101	95	yes	0.0	123	Upper Midwest	SD	Pennington	Rapid City, SD
461031001	48	44	43	45	yes	0.0	58	Upper Midwest	SD	Pennington	Rapid City, SD
461270001			51	51		0.0	82	Upper Midwest	SD	Union	Sioux City, IA-NE-SD
461270002			39	39		0.0	49	Upper Midwest	SD	Union	Sioux City, IA-NE-SD
470110103	45	38	27	37	yes	0.0	45	Southeast	TN	Bradley	Cleveland, TN
470111002	43	37	29	36		0.0	50	Southeast	TN	Bradley	Cleveland, TN
470370002	57	38	34	43	yes	0.0	58	Southeast	TN	Davidson	Nashville-Davidson-Murfreesboro-Franklin, TN
470370024	53	37	30	40	yes	0.0	53	Southeast	TN	Davidson	Nashville-Davidson-Murfreesboro-Franklin, TN
470650006	44	35	22	34	yes	0.0	46	Southeast	TN	Hamilton	Chattanooga, TN-GA
470930022	49	38	29	39		0.0	56	Southeast	TN	Knox	Knoxville, TN
470931013		44	38	41		0.0	53	Southeast	TN	Knox	Knoxville, TN
470931017	51	40	30	40		0.0	54	Southeast	TN	Knox	Knoxville, TN
471070101	62	44	35	47	yes	0.0	67	Southeast	TN	McMinn	Athens, TN
471130003	43	41	28	37		0.0	62	Southeast	TN	Madison	Jackson, TN
471250006	50	38	28	39	yes	0.0	65	Southeast	TN	Montgomery	Clarksville, TN-KY
471450004			27	27		0.0	27	Southeast	TN	Roane	Harriman, TN
471450103	48	50	47	48	yes	0.0	68	Southeast	TN	Roane	Harriman, TN
471450104	41	41	30	37	yes	0.0	47	Southeast	TN	Roane	Harriman, TN
471451001			32	32		0.0	41	Southeast	TN	Roane	Harriman, TN

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471453009			31	31		0.0	34	Southeast	TN	Roane	Harriman, TN
471570016	57	42	33	44	yes	0.0	71	Southeast	TN	Shelby	Memphis, TN-MS-AR
471570046	47	39	41	42	yes	0.0	53	Southeast	TN	Shelby	Memphis, TN-MS-AR
471730104	54	40	17	37		0.0	54	Southeast	TN	Union	Knoxville, TN
471730105	43	36	24	34	yes	0.0	49	Southeast	TN	Union	Knoxville, TN
471730107	83	87	49	73	yes	0.0	104	Southeast	TN	Union	Knoxville, TN
480290053	57	41	49	49	yes	0.0	84	Southwest	TX	Bexar	San Antonio, TX
480290060	36	42	37	38		0.0	44	Southwest	TX	Bexar	San Antonio, TX
480610006	63	40	48	50	yes	0.3	75	Southeast	TX	Cameron	Brownsville-Harlingen, TX
480612002	49			49		0.0	70	Southeast	TX	Cameron	Brownsville-Harlingen, TX
481130035	31	40		36		0.0	40	Southeast	TX	Dallas	Dallas-Fort Worth-Arlington, TX
481130050	29	43	43	38		0.0	57	Southeast	TX	Dallas	Dallas-Fort Worth-Arlington, TX
481130057	40	29		35		0.0	40	Southeast	TX	Dallas	Dallas-Fort Worth-Arlington, TX
481130061			53	53		0.0	53	Southeast	TX	Dallas	Dallas-Fort Worth-Arlington, TX
481130075			34	34		0.0	40	Southeast	TX	Dallas	Dallas-Fort Worth-Arlington, TX
481410002	89	71	63	74		0.0	107	Southwest	TX	El Paso	El Paso, TX
481410029	47	55	40	47		0.0	55	Southwest	TX	El Paso	El Paso, TX
481410037	96	85	62	81	yes	1.0	154	Southwest	TX	El Paso	El Paso, TX
481410038	72	58	65	65		0.0	76	Southwest	TX	El Paso	El Paso, TX
481410044	115	87	63	88	yes	0.3	136	Southwest	TX	El Paso	El Paso, TX
481410057	110	90	70	90	yes	2.7	168	Southwest	TX	El Paso	El Paso, TX
481410059	72	49	33	51		0.0	72	Southwest	TX	El Paso	El Paso, TX
481419018	93	137		115		1.0	218	Southwest	TX	El Paso	El Paso, TX
481670004	72	50	51	58		0.0	72	Southeast	TX	Galveston	Houston-Sugar Land-Baytown, TX
482010024	42	41	41	41	yes	0.0	54	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482010047	47	46	38	44	yes	0.0	56	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482010062	49	59	49	52	yes	0.0	104	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482010066	45	51	52	49		0.0	66	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482010071	43	46	34	41		0.0	46	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482011035	159	125	94	126	yes	3.0	190	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482011039	33	33	33	33	yes	0.0	40	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482030002	31	28	25	28	yes	0.0	43	Southeast	TX	Harrison	Marshall, TX
482150043	58	44	43	48	yes	0.3	80	Southwest	TX	Hidalgo	McAllen-Edinburg-Mission, TX
483550034	72	60	55	62	yes	0.0	95	Southeast	TX	Nueces	Corpus Christi, TX
484393010	43	34	37	38	yes	0.0	44	Southeast	TX	Tarrant	Dallas-Fort Worth-Arlington, TX

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484530020		36	41	39		0.0	43	Southwest	TX	Travis	Austin-Round Rock, TX
484530021	41	35	41	39	yes	0.0	44	Southwest	TX	Travis	Austin-Round Rock, TX
484790016	61	55	60	59	yes	0.7	119	Southwest	TX	Webb	Laredo, TX
484790017	41	33	58	44	yes	0.0	74	Southwest	TX	Webb	Laredo, TX
490050004	55	58	60	58	yes	0.0	93	Northwest	UT	Cache	Logan, UT-ID
490110004	82	63	67	71	yes	0.0	103	Northwest	UT	Davis	Ogden-Clearfield, UT
490350003	90	59	75	75	yes	1.2	110	Northwest	UT	Salt Lake	Salt Lake City, UT
490350012	118	97	91	102	yes	2.4	174	Northwest	UT	Salt Lake	Salt Lake City, UT
490351001	65	56	50	57	yes	0.0	89	Northwest	UT	Salt Lake	Salt Lake City, UT
490353006	93	75	96	88	yes	1.0	138	Northwest	UT	Salt Lake	Salt Lake City, UT
490490002	86	75	75	79	yes	0.0	146	Northwest	UT	Utah	Provo-Orem, UT
490494001	94	80	99	91	yes	2.0	177	Northwest	UT	Utah	Provo-Orem, UT
490570002	84	65	78	76	yes	0.3	118	Northwest	UT	Weber	Ogden-Clearfield, UT
500070007	19	18	15	17	yes	0.0	33	Northeast	VT	Chittenden	Burlington-South Burlington, VT
500070014	30	25	32	29	yes	0.0	42	Northeast	VT	Chittenden	Burlington-South Burlington, VT
500210002	29	29	32	30	yes	0.0	37	Northeast	VT	Rutland	Rutland, VT
500250004	29	28		29		0.0	35	Northeast	VT	Windham	
510350001	37	28	40	35		0.0	40	Industrial Midwes	VA	Carroll	
510360003	36	37		37		0.0	38	Northeast	VA	Charles	Richmond, VA
510470002	36	33	26	32	yes	0.0	50	Northeast	VA	Culpeper	Culpeper, VA
510590005	52	38	29	40		0.0	54	Northeast	VA	Fairfax	Wash.-Arlington-Alexandria, DC-VA-MD-WV
510590018	35	40	45	40		0.0	50	Northeast	VA	Fairfax	Wash.-Arlington-Alexandria, DC-VA-MD-WV
510690012	67	76		72		0.0	88	Northeast	VA	Frederick	Winchester, VA-WV
510870014		38	31	35		0.0	38	Northeast	VA	Henrico	Richmond, VA
511010003	36	35	27	33	yes	0.0	41	Northeast	VA	King William	Richmond, VA
511870004	32	36	24	31	yes	0.0	46	Northeast	VA	Warren	Wash.-Arlington-Alexandria, DC-VA-MD-WV
515100009			36	36		0.0	50	Northeast	VA	Alexandria City	Wash.-Arlington-Alexandria, DC-VA-MD-WV
515100020			29	29		0.0	40	Northeast	VA	Alexandria City	Wash.-Arlington-Alexandria, DC-VA-MD-WV
515400002	40			40		0.0	53	Northeast	VA	Charlottesville City	Charlottesville, VA
516300004	39	39	28	35	yes	0.0	50	Northeast	VA	Fredericksburg City	Wash.-Arlington-Alexandria, DC-VA-MD-WV
516500004	37	31	24	31		0.0	38	Northeast	VA	Hampton City	Virginia Beach-Norfolk-Newport News, VA-NC
516700010	35	34	27	32	yes	0.0	42	Northeast	VA	Hopewell City	Richmond, VA
516700011	39	41		40		0.0	42	Northeast	VA	Hopewell City	Richmond, VA
517000013			28	28		0.0	28	Northeast	VA	Newport News City	Virginia Beach-Norfolk-Newport News, VA-NC
517100024	36	69	35	47	yes	0.0	88	Northeast	VA	Norfolk City	Virginia Beach-Norfolk-Newport News, VA-NC

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517700011	58	61	63	61	yes	0.0	75	Industrial Midwes	VA	Roanoke City	Roanoke, VA
518400002	45	36	28	36	yes	0.0	51	Northeast	VA	Winchester City	Winchester, VA-WV
530030004	61	27		44		0.0	61	Northwest	WA	Asotin	Lewiston, ID-WA
530050002	53	66	69	63	yes	0.7	116	Northwest	WA	Benton	Kennewick-Richland-Pasco, WA
530330057	45			45		0.0	53	Northwest	WA	King	Seattle-Tacoma-Bellevue, WA
530332004	36			36		0.0	58	Northwest	WA	King	Seattle-Tacoma-Bellevue, WA
530530031	43			43		0.0	64	Northwest	WA	Pierce	Seattle-Tacoma-Bellevue, WA
530630001	26			26		0.0	26	Northwest	WA	Spokane	Spokane, WA
530630016	56	72	42	57		0.3	89	Northwest	WA	Spokane	Spokane, WA
530630021			48	48		0.0	48	Northwest	WA	Spokane	Spokane, WA
530650004	74	152	83	103	yes	2.4	200	Northwest	WA	Stevens	
530710006	64	63	64	64	yes	0.8	112	Northwest	WA	Walla Walla	Walla Walla, WA
530770009	52	51	50	51	yes	0.0	57	Northwest	WA	Yakima	Yakima, WA
540090005	59	52	38	50	yes	0.0	64	Industrial Midwes	WV	Brooke	Weirton-Steubenville, WV-OH
540090011	77	52	38	56	yes	0.0	80	Industrial Midwes	WV	Brooke	Weirton-Steubenville, WV-OH
540290009	73	51	37	54	yes	0.0	75	Industrial Midwes	WV	Hancock	Weirton-Steubenville, WV-OH
540291004	67	46	35	49	yes	0.0	82	Industrial Midwes	WV	Hancock	Weirton-Steubenville, WV-OH
540390010	48	43	36	42	yes	0.0	53	Industrial Midwes	WV	Kanawha	Charleston, WV
550250047		43	58	51		0.0	63	Industrial Midwes	WI	Dane	Madison, WI
550270001			20	20		0.0	20	Industrial Midwes	WI	Dodge	Beaver Dam, WI
550270007	44	31	28	34	yes	0.0	51	Industrial Midwes	WI	Dodge	Beaver Dam, WI
550410007	19	18	53	30		0.0	53	Industrial Midwes	WI	Forest	
550790010	47	43	40	43		0.0	47	Industrial Midwes	WI	Milwaukee	Milwaukee-Waukesha-West Allis, WI
550790059	63	40	41	48		0.0	71	Industrial Midwes	WI	Milwaukee	Milwaukee-Waukesha-West Allis, WI
551171004	30			30		0.0	30	Industrial Midwes	WI	Sheboygan	Sheboygan, WI
551330027	47	38	36	40	yes	0.0	63	Industrial Midwes	WI	Waukesha	Milwaukee-Waukesha-West Allis, WI
560010006	47	68	57	57		0.0	73	Northwest	WY	Albany	Laramie, WY
560010800	113	110	87	103	yes	1.7	190	Northwest	WY	Albany	Laramie, WY
560010801	82	64	48	65	yes	0.0	98	Northwest	WY	Albany	Laramie, WY
560050088			56	56		0.0	73	Northwest	WY	Campbell	Gillette, WY
560050099	55	51	31	46	yes	0.0	57	Northwest	WY	Campbell	Gillette, WY
560050456	41	32	29	34		0.0	53	Northwest	WY	Campbell	Gillette, WY
560050802	35	26	21	27	yes	0.0	39	Northwest	WY	Campbell	Gillette, WY
560050808	114	81	51	82	yes	0.0	139	Northwest	WY	Campbell	Gillette, WY
560050826	67	66	52	62	yes	0.0	91	Northwest	WY	Campbell	Gillette, WY

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560050841		52	21	37		0.0	52	Northwest	WY	Campbell	Gillette, WY
560050857	76	60	59	65		0.0	121	Northwest	WY	Campbell	Gillette, WY
560050869	100	91	81	91	yes	0.0	131	Northwest	WY	Campbell	Gillette, WY
560050870	102	112	127	114		0.0	144	Northwest	WY	Campbell	Gillette, WY
560050874	94	104		99		0.4	142	Northwest	WY	Campbell	Gillette, WY
560050875	94	69	52	72	yes	0.0	117	Northwest	WY	Campbell	Gillette, WY
560050877	76	33		55		0.0	99	Northwest	WY	Campbell	Gillette, WY
560050881	74	72	59	68	yes	0.0	93	Northwest	WY	Campbell	Gillette, WY
560050883	62	61	67	63	yes	0.0	149	Northwest	WY	Campbell	Gillette, WY
560050884	55	50	37	47	yes	0.0	72	Northwest	WY	Campbell	Gillette, WY
560050885	82	58	67	69	yes	0.0	116	Northwest	WY	Campbell	Gillette, WY
560050886	78	59	54	64	yes	0.0	90	Northwest	WY	Campbell	Gillette, WY
560050889	58	44	37	46	yes	0.0	131	Northwest	WY	Campbell	Gillette, WY
560050890	35	29	21	28	yes	0.0	50	Northwest	WY	Campbell	Gillette, WY
560050891	104	85	49	79	yes	0.3	119	Northwest	WY	Campbell	Gillette, WY
560050892	42	34	27	34	yes	0.0	48	Northwest	WY	Campbell	Gillette, WY
560050893		50	23	37		0.0	72	Northwest	WY	Campbell	Gillette, WY
560050894	49	47	28	41		0.0	58	Northwest	WY	Campbell	Gillette, WY
560050895	66	57	44	56	yes	0.0	70	Northwest	WY	Campbell	Gillette, WY
560050896	36	16		26		0.0	44	Northwest	WY	Campbell	Gillette, WY
560050899	71	66		69		0.0	107	Northwest	WY	Campbell	Gillette, WY
560050900	33	20		27		0.0	41	Northwest	WY	Campbell	Gillette, WY
560050901	100	64	73	79		0.0	143	Northwest	WY	Campbell	Gillette, WY
560050906	64	60	48	57	yes	1.0	69	Northwest	WY	Campbell	Gillette, WY
560050907	95	72	52	73	yes	0.4	116	Northwest	WY	Campbell	Gillette, WY
560050908	54	56	42	51	yes	0.0	72	Northwest	WY	Campbell	Gillette, WY
560050910	89			89		0.0	100	Northwest	WY	Campbell	Gillette, WY
560050916	97	85		91		0.0	123	Northwest	WY	Campbell	Gillette, WY
560050917	118	80		99		0.0	143	Northwest	WY	Campbell	Gillette, WY
560051002	74	55	53	61	yes	0.0	74	Northwest	WY	Campbell	Gillette, WY
560051877		29	25	27		0.0	44	Northwest	WY	Campbell	Gillette, WY
560051879		31	26	29		0.0	31	Northwest	WY	Campbell	Gillette, WY
560051896		28	22	25		0.0	28	Northwest	WY	Campbell	Gillette, WY
560051899		78	63	71		0.0	91	Northwest	WY	Campbell	Gillette, WY
560051900		57	47	52		0.0	68	Northwest	WY	Campbell	Gillette, WY

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560051915		84	47	66		0.0	96	Northwest	WY	Campbell	Gillette, WY
560051917		88	66	77		0.0	93	Northwest	WY	Campbell	Gillette, WY
560052900		41	21	31		0.0	48	Northwest	WY	Campbell	Gillette, WY
560070826			39	39		0.0	40	Northwest	WY	Carbon	
560078110			63	63		0.0	63	Northwest	WY	Carbon	
560078120			35	35		0.0	35	Northwest	WY	Carbon	
560090819		71	30	51		0.0	71	Northwest	WY	Converse	
560090850	90	91	62	81	yes	0.0	110	Northwest	WY	Converse	
560090851	94	80	105	93	yes	0.0	154	Northwest	WY	Converse	
560130099	36	32	29	32	yes	0.0	68	Northwest	WY	Fremont	Riverton, WY
560130232			19	19		0.0	31	Northwest	WY	Fremont	Riverton, WY
560131003	34	46	44	41	yes	0.0	95	Northwest	WY	Fremont	Riverton, WY
560210001	27	44	29	33	yes	0.0	55	Northwest	WY	Laramie	Cheyenne, WY
560230800	61	68	89	73	yes	0.8	139	Northwest	WY	Lincoln	
560230814	29	29	21	26	yes	0.0	31	Northwest	WY	Lincoln	
560230815	25	25	23	24	yes	0.0	28	Northwest	WY	Lincoln	
560230820	48	56	59	54	yes	0.4	126	Northwest	WY	Lincoln	
560250001	36	42	40	39	yes	0.0	51	Northwest	WY	Natrona	Casper, WY
560290001	55	60	22	46		0.0	91	Northwest	WY	Park	
560310805	174	85	59	106		2.5	174	Northwest	WY	Platte	
560330002	71	53	57	60	yes	0.8	103	Northwest	WY	Sheridan	Sheridan, WY
560330003	45	35	26	35	yes	0.0	60	Northwest	WY	Sheridan	Sheridan, WY
560330099	40			40		0.0	40	Northwest	WY	Sheridan	Sheridan, WY
560350098	47	91		69		0.0	95	Northwest	WY	Sublette	
560350099	27	29	23	26		0.0	61	Northwest	WY	Sublette	
560350100	31	23	20	25	yes	0.0	43	Northwest	WY	Sublette	
560370007	66	62	59	62	yes	0.0	102	Northwest	WY	Sweetwater	Rock Springs, WY
560370010	23	42	19	28		0.0	42	Northwest	WY	Sweetwater	Rock Springs, WY
560370012	38	45	24	36	yes	0.0	54	Northwest	WY	Sweetwater	Rock Springs, WY
560370013	56	65	69	63	yes	0.0	91	Northwest	WY	Sweetwater	Rock Springs, WY
560370014	50	50	38	46	yes	2.0	195	Northwest	WY	Sweetwater	Rock Springs, WY
560370200	54	37	42	44	yes	0.7	93	Northwest	WY	Sweetwater	Rock Springs, WY
560370812	29	30	28	29	yes	0.0	53	Northwest	WY	Sweetwater	Rock Springs, WY
560370847	52	57	54	54		0.0	74	Northwest	WY	Sweetwater	Rock Springs, WY
560370848	102	96	93	97	yes	0.0	116	Northwest	WY	Sweetwater	Rock Springs, WY

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560370851	36	28	28	31	yes	0.0	41	Northwest	WY	Sweetwater	Rock Springs, WY
560370852	49	46	51	49	yes	0.0	75	Northwest	WY	Sweetwater	Rock Springs, WY
560370860	68	73	60	67	yes	0.3	150	Northwest	WY	Sweetwater	Rock Springs, WY
560370862	24	22	17	21	yes	0.0	45	Northwest	WY	Sweetwater	Rock Springs, WY
560370866	67	28	33	43	yes	0.0	98	Northwest	WY	Sweetwater	Rock Springs, WY
560370867	80	68	44	64	yes	0.0	110	Northwest	WY	Sweetwater	Rock Springs, WY
560370868	81	70	58	70	yes	1.6	148	Northwest	WY	Sweetwater	Rock Springs, WY
560370875	33	54	51	46		0.0	74	Northwest	WY	Sweetwater	Rock Springs, WY
560370898	28	46	33	36	yes	0.0	54	Northwest	WY	Sweetwater	Rock Springs, WY
560370901	32	16	23	24	yes	0.0	38	Northwest	WY	Sweetwater	Rock Springs, WY
560371002	26	32	28	29	yes	0.0	48	Northwest	WY	Sweetwater	Rock Springs, WY
560371236		27	53	40		0.0	74	Northwest	WY	Sweetwater	Rock Springs, WY
560371414			39	39		0.0	58	Northwest	WY	Sweetwater	Rock Springs, WY
560371868		80	93	87		0.7	176	Northwest	WY	Sweetwater	Rock Springs, WY
560391006	29	42	38	36		0.0	93	Northwest	WY	Teton	Jackson, WY-ID
560410101	40	38	45	41	yes	0.3	73	Northwest	WY	Uinta	Evanston, WY
720330004	74	63	72	70	yes	0.3	107	Not in PMREG Re	PR	Catano	San Juan-Caguas-Guaynabo, PR
720530003	62	58	60	60		0.0	75	Not in PMREG Re	PR	Fajardo	Fajardo, PR
720570008	63	66	74	68		0.0	96	Not in PMREG Re	PR	Guayama	Guayama, PR
720610001	55	62	72	63		0.0	95	Not in PMREG Re	PR	Guaynabo	San Juan-Caguas-Guaynabo, PR
720610005	79	72	72	74		0.0	106	Not in PMREG Re	PR	Guaynabo	San Juan-Caguas-Guaynabo, PR
721130004	75	64	72	70		0.0	80	Not in PMREG Re	PR	Ponce	Ponce, PR
721190002	57	62		60		0.0	62	Not in PMREG Re	PR	Rio Grande	San Juan-Caguas-Guaynabo, PR
721270003	72	78		75		0.0	103	Not in PMREG Re	PR	San Juan	San Juan-Caguas-Guaynabo, PR
721270008	55	32		44		0.0	63	Not in PMREG Re	PR	San Juan	San Juan-Caguas-Guaynabo, PR
721270010	63	86		75		0.0	86	Not in PMREG Re	PR	San Juan	San Juan-Caguas-Guaynabo, PR
780100008	124	30	64	73		0.0	124	Not in PMREG Re	VI	St Croix	
780100012	89	79	146	105		0.0	148	Not in PMREG Re	VI	St Croix	
780300007	60	97	110	89		0.0	119	Not in PMREG Re	VI	St Thomas	
780300010		112	63	88		0.0	137	Not in PMREG Re	VI	St Thomas	

APPENDIX D

Ratios of Three Year Design Values

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
010730002	52	61.2		73	48.7	**1.3**	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010730023	66	77.6	yes	101	67.3	**1.2**	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010731010	42	49.4	yes	96	64.0	**0.8**	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010736003	96	112.9	yes	145	96.7	**1.2**	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010736004	111	130.6	yes	167	111.3	**1.2**	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010890002	41	48.2	yes	81	54.0	**0.9**	Southeast	AL	Madison	Huntsville, AL
010890004	31	36.5	yes	71	47.3	**0.8**	Southeast	AL	Madison	Huntsville, AL
011011002	43	50.6	yes	85	56.7	**0.9**	Southeast	AL	Montgomery	Montgomery, AL
020200018	52	61.2	yes	122	81.3	**0.8**	Not in PMREG R	AK	Anchorage	Anchorage, AK
020200044	93	109.4	yes	109	72.7	**1.5**	Not in PMREG R	AK	Anchorage	Anchorage, AK
020200052	54	63.5		120	80.0	**0.8**	Not in PMREG R	AK	Anchorage	Anchorage, AK
020201004	56	65.9	yes	163	108.7	**0.6**	Not in PMREG R	AK	Anchorage	Anchorage, AK
040011234	77	90.6		110	73.3	**1.2**	Southwest	AZ	Apache	
040030011	60	70.6	yes	159	106.0	**0.7**	Southwest	AZ	Cochise	Sierra Vista-Douglas, AZ
040031005	82	96.5	yes	97	64.7	**1.5**	Southwest	AZ	Cochise	Sierra Vista-Douglas, AZ
040071001	98	115.3	yes	194	129.3	**0.9**	Southwest	AZ	Gila	Payson, AZ
040078000	38	44.7		72	48.0	**0.9**	Southwest	AZ	Gila	Payson, AZ
040130019	87	102.4	yes	117	78.0	**1.3**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040131003	61	71.8	yes	110	73.3	**1.0**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040131004	63	74.1	yes	87	58.0	**1.3**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040132001	63	74.1	yes	196	130.7	**0.6**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133002	87	102.4	yes	133	88.7	**1.2**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133003	62	72.9	yes	135	90.0	**0.8**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133010	93	109.4	yes	123	82.0	**1.3**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134003	112	131.8	yes	171	114.0	**1.2**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134006	106	124.7	yes	195	130.0	**1.0**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040135100	60	70.6	yes	94	62.7	**1.1**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137024	120	141.2	yes	176	117.3	**1.2**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
040139812	115	135.3	yes	161	107.3	**1.3**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040139997	65	76.5	yes	102	68.0	**1.1**	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040151003	48	56.5	yes	98	65.3	**0.9**	Southwest	AZ	Mohave	Lake Havasu City-Kingman, AZ
040151011	108	127.1		195	130.0	**1.0**	Southwest	AZ	Mohave	Lake Havasu City-Kingman, AZ
040170007	46	54.1		75	50.0	**1.1**	Southwest	AZ	Navajo	
040171002	32	37.6		85	56.7	**0.7**	Southwest	AZ	Navajo	
040190001	65	76.5	yes	128	85.3	**0.9**	Southwest	AZ	Pima	Tucson, AZ
040190008	63	74.1		89	59.3	**1.2**	Southwest	AZ	Pima	Tucson, AZ
040190011	61	71.8	yes	95	63.3	**1.1**	Southwest	AZ	Pima	Tucson, AZ
040191001	65	76.5	yes	121	80.7	**0.9**	Southwest	AZ	Pima	Tucson, AZ
040191009	68	80.0	yes	99	66.0	**1.2**	Southwest	AZ	Pima	Tucson, AZ
040191018	45	52.9	yes	101	67.3	**0.8**	Southwest	AZ	Pima	Tucson, AZ
040191023	58	68.2	yes	80	53.3	**1.3**	Southwest	AZ	Pima	Tucson, AZ
040191026	63	74.1	yes	173	115.3	**0.6**	Southwest	AZ	Pima	Tucson, AZ
040191030	50	58.8	yes	84	56.0	**1.1**	Southwest	AZ	Pima	Tucson, AZ
040191113	65	76.5		124	82.7	**0.9**	Southwest	AZ	Pima	Tucson, AZ
040213004	76	89.4	yes	189	126.0	**0.7**	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213007	54	63.5	yes	113	75.3	**0.8**	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213014	106	124.7		153	102.0	**1.2**	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
060010007	55	64.7		71	47.3	**1.4**	Northwest	CA	Alameda	San Francisco-Oakland-Fremont, CA
060070002	72	84.7	yes	143	95.3	**0.9**	Northwest	CA	Butte	Chico, CA
060072001	41	48.2		116	77.3	**0.6**	Northwest	CA	Butte	Chico, CA
060090001	34	40.0	yes	74	49.3	**0.8**	Northwest	CA	Calaveras	
060111002	59	69.4	yes	90	60.0	**1.2**	Northwest	CA	Colusa	
060131002	45	52.9	yes	78	52.0	**1.0**	Northwest	CA	Contra Costa	San Francisco-Oakland-Fremont, CA
060133001	61	71.8		73	48.7	**1.5**	Northwest	CA	Contra Costa	San Francisco-Oakland-Fremont, CA
060190007	81	95.3	yes	98	65.3	**1.5**	Southern Californ	CA	Fresno	Fresno, CA
060190008	77	90.6	yes	107	71.3	**1.3**	Southern Californ	CA	Fresno	Fresno, CA

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
060195001	74	87.1	yes	116	77.3	**1.1**	Southern Californ	CA	Fresno	Fresno, CA
060210003	73	85.9	yes	121	80.7	**1.1**	Northwest	CA	Glenn	
060250004	149	175.3		149	99.3	**1.8**	Southern Californ	CA	Imperial	El Centro, CA
060270002	48	56.5		81	54.0	**1.0**	Northwest	CA	Inyo	Bishop, CA
060270004	58	68.2	yes	149	99.3	**0.7**	Southern Californ	CA	Inyo	Bishop, CA
060270025	87	102.4	yes	198	132.0	**0.8**	Southern Californ	CA	Inyo	Bishop, CA
060271001	62	72.9	yes	138	92.0	**0.8**	Southern Californ	CA	Inyo	Bishop, CA
060271023	54	63.5		76	50.7	**1.3**	Northwest	CA	Inyo	Bishop, CA
060290011	75	88.2	yes	154	102.7	**0.9**	Southern Californ	CA	Kern	Bakersfield, CA
060290015	45	52.9	yes	72	48.0	**1.1**	Southern Californ	CA	Kern	Bakersfield, CA
060311007	78	91.8		111	74.0	**1.2**	Southern Californ	CA	Kings	Hanford-Corcoran, CA
060370002	82	96.5		165	110.0	**0.9**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060370016	49	57.6		81	54.0	**1.1**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060371002	88	103.5		118	78.7	**1.3**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060371103	76	89.4	yes	125	83.3	**1.1**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060374002	60	70.6	yes	123	82.0	**0.9**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060374004	88	103.5		123	82.0	**1.3**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060375005	64	75.3	yes	128	85.3	**0.9**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060376012	77	90.6	yes	167	111.3	**0.8**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060379033	56	65.9	yes	152	101.3	**0.7**	Southern Californ	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, CA
060431001	67	78.8	yes	135	90.0	**0.9**	Northwest	CA	Mariposa	
060452001	72	84.7		113	75.3	**1.1**	Northwest	CA	Mendocino	Ukiah, CA
060472510	66	77.6	yes	75	50.0	**1.6**	Northwest	CA	Merced	Merced, CA
060510001	72	84.7	yes	118	78.7	**1.1**	Northwest	CA	Mono	
060510005	39	45.9	yes	78	52.0	**0.9**	Northwest	CA	Mono	
060510007	78	91.8		120	80.0	**1.1**	Northwest	CA	Mono	
060590007	64	75.3	yes	97	64.7	**1.2**	Southern Californ	CA	Orange	Los Angeles-Long Beach-Santa Ana, CA
060592022	46	54.1	yes	74	49.3	**1.1**	Southern Californ	CA	Orange	Los Angeles-Long Beach-Santa Ana, CA

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
060610006	35	41.2	yes	74	49.3	**0.8**	Northwest	CA	Placer	Sacramento--Arden-Arcade--Roseville, CA
060650004	72	84.7		84	56.0	**1.5**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060650012	58	68.2		99	66.0	**1.0**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060652002	109	128.2	yes	179	119.3	**1.1**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060655001	81	95.3	yes	149	99.3	**1.0**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060658001	91	107.1	yes	117	78.0	**1.4**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060658005	118	138.8	yes	142	94.7	**1.5**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060659001	58	68.2		72	48.0	**1.4**	Southern Californ	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060670002	61	71.8		97	64.7	**1.1**	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670006	50	58.8	yes	83	55.3	**1.1**	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670010	53	62.4	yes	73	48.7	**1.3**	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670013	64	75.3		94	62.7	**1.2**	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060670284	72	84.7	yes	89	59.3	**1.4**	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060674001	53	62.4	yes	81	54.0	**1.2**	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville, CA
060710005	62	72.9		89	59.3	**1.2**	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060711234	71	83.5	yes	144	96.0	**0.9**	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060714001	69	81.2	yes	99	66.0	**1.2**	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060714003	67	78.8	yes	97	64.7	**1.2**	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060719004	88	103.5	yes	136	90.7	**1.1**	Southern Californ	CA	San Bernardino	Riverside-San Bernardino-Ontario, CA
060730077	70	82.4		95	63.3	**1.3**	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060731002	50	58.8	yes	82	54.7	**1.1**	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060731010	55	64.7	yes	110	73.3	**0.9**	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060731014	98	115.3	yes	170	113.3	**1.0**	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060732000	48	56.5		91	60.7	**0.9**	Southern Californ	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060771002	69	81.2	yes	104	69.3	**1.2**	Northwest	CA	San Joaquin	Stockton, CA
060773005	54	63.5	yes	97	64.7	**1.0**	Northwest	CA	San Joaquin	Stockton, CA
060773010	57	67.1	yes	71	47.3	**1.4**	Northwest	CA	San Joaquin	Stockton, CA
060792004	84	98.8	yes	130	86.7	**1.1**	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
060794002	54	63.5	yes	81	54.0	**1.2**	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060794003	95	111.8		146	97.3	**1.1**	Southern Californ	CA	San Luis Obispo	San Luis Obispo-Paso Robles, CA
060852003	67	78.8		72	48.0	**1.6**	Northwest	CA	Santa Clara	San Jose-Sunnyvale-Santa Clara, CA
060870003	69	81.2		106	70.7	**1.1**	Northwest	CA	Santa Cruz	Santa Cruz-Watsonville, CA
060890007	63	74.1	yes	135	90.0	**0.8**	Northwest	CA	Shasta	Redding, CA
060890008	57	67.1	yes	108	72.0	**0.9**	Northwest	CA	Shasta	Redding, CA
060930004	59	69.4		115	76.7	**0.9**	Northwest	CA	Siskiyou	
060970001	29	34.1	yes	81	54.0	**0.6**	Northwest	CA	Sonoma	Santa Rosa-Petaluma, CA
060990005	76	89.4	yes	111	74.0	**1.2**	Northwest	CA	Stanislaus	Modesto, CA
060990006	71	83.5	yes	96	64.0	**1.3**	Northwest	CA	Stanislaus	Modesto, CA
061030002	64	75.3	yes	106	70.7	**1.1**	Northwest	CA	Tehama	Red Bluff, CA
061072002	89	104.7	yes	103	68.7	**1.5**	Southern Californ	CA	Tulare	Visalia-Porterville, CA
061111004	48	56.5	yes	98	65.3	**0.9**	Southern Californ	CA	Ventura	Oxnard-Thousand Oaks-Ventura, CA
061112002	53	62.4	yes	118	78.7	**0.8**	Southern Californ	CA	Ventura	Oxnard-Thousand Oaks-Ventura, CA
061131003	74	87.1	yes	181	120.7	**0.7**	Northwest	CA	Yolo	Sacramento--Arden-Arcade--Roseville, CA
080010006	73	85.9	yes	107	71.3	**1.2**	Northwest	CO	Adams	Denver-Aurora, CO
080030001	65	76.5	yes	135	90.0	**0.8**	Northwest	CO	Alamosa	
080030003	71	83.5	yes	157	104.7	**0.8**	Northwest	CO	Alamosa	
080070001	57	67.1	yes	182	121.3	**0.6**	Northwest	CO	Archuleta	
080130012	47	55.3	yes	73	48.7	**1.1**	Northwest	CO	Boulder	Boulder, CO
080290004	63	74.1	yes	186	124.0	**0.6**	Northwest	CO	Delta	
080310017	54	63.5	yes	80	53.3	**1.2**	Northwest	CO	Denver	Denver-Aurora, CO
080310025	57	67.1	yes	96	64.0	**1.0**	Northwest	CO	Denver	Denver-Aurora, CO
080410017	39	45.9		100	66.7	**0.7**	Northwest	CO	El Paso	Colorado Springs, CO
080450007	62	72.9	yes	88	58.7	**1.2**	Northwest	CO	Garfield	
080510004	90	105.9	yes	108	72.0	**1.5**	Northwest	CO	Gunnison	
080510007	53	62.4	yes	92	61.3	**1.0**	Northwest	CO	Gunnison	
080770017	72	84.7	yes	103	68.7	**1.2**	Northwest	CO	Mesa	Grand Junction, CO

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
080770018	75	88.2	yes	130	86.7	**1.0**	Northwest	CO	Mesa	Grand Junction, CO
080770019	86	101.2		147	98.0	**1.0**	Northwest	CO	Mesa	Grand Junction, CO
080990001	80	94.1	yes	174	116.0	**0.8**	Upper Midwest	CO	Prowers	
080990002	50	58.8	yes	123	82.0	**0.7**	Upper Midwest	CO	Prowers	
081010012	76	89.4		120	80.0	**1.1**	Northwest	CO	Pueblo	Pueblo, CO
081070003	78	91.8	yes	99	66.0	**1.4**	Northwest	CO	Routt	
081130004	66	77.6	yes	130	86.7	**0.9**	Northwest	CO	San Miguel	
081170002	54	63.5	yes	100	66.7	**1.0**	Northwest	CO	Summit	Silverthorne, CO
090019003	36	42.4	yes	76	50.7	**0.8**	Northeast	CT	Fairfield	Bridgeport-Stamford-Norwalk, CT
120010023	43	50.6		72	48.0	**1.1**	Southeast	FL	Alachua	Gainesville, FL
120051004	45	52.9		82	54.7	**1.0**	Southeast	FL	Bay	Panama City-Lynn Haven, FL
120113002	51	60.0		101	67.3	**0.9**	Southeast	FL	Broward	Miami-Fort Lauderdale-Pompano Beach, FL
120310053	44	51.8		82	54.7	**0.9**	Southeast	FL	Duval	Jacksonville, FL
120310084	52	61.2	yes	70	46.7	**1.3**	Southeast	FL	Duval	Jacksonville, FL
120310089	42	49.4		83	55.3	**0.9**	Southeast	FL	Duval	Jacksonville, FL
120470015	81	95.3		106	70.7	**1.3**	Southeast	FL	Hamilton	
120570066	67	78.8		91	60.7	**1.3**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120570083	46	54.1	yes	76	50.7	**1.1**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120570095	57	67.1		82	54.7	**1.2**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120571035	44	51.8	yes	72	48.0	**1.1**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120571070	49	57.6		74	49.3	**1.2**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120572002	39	45.9		73	48.7	**0.9**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120573002	30	35.3	yes	72	48.0	**0.7**	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
120810008	62	72.9		111	74.0	**1.0**	Southeast	FL	Manatee	Sarasota-Bradenton-Venice, FL
120861016	56	65.9	yes	76	50.7	**1.3**	Southeast	FL	Miami-Dade	Miami-Fort Lauderdale-Pompano Beach, FL
120990008	43	50.6		79	52.7	**1.0**	Southeast	FL	Palm Beach	Miami-Fort Lauderdale-Pompano Beach, FL
121030012	40	47.1	yes	72	48.0	**1.0**	Southeast	FL	Pinellas	Tampa-St. Petersburg-Clearwater, FL
121052006	59	69.4		93	62.0	**1.1**	Southeast	FL	Polk	Lakeland, FL

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
121071008	46	54.1	yes	77	51.3	**1.1**	Southeast	FL	Putnam	Palatka, FL
130210007	61	71.8	yes	133	88.7	**0.8**	Southeast	GA	Bibb	Macon, GA
130510014	38	44.7	yes	115	76.7	**0.6**	Southeast	GA	Chatham	Savannah, GA
130950007	51	60.0	yes	71	47.3	**1.3**	Southeast	GA	Dougherty	Albany, GA
131150005	41	48.2		81	54.0	**0.9**	Southeast	GA	Floyd	Rome, GA
131210048	46	54.1	yes	82	54.7	**1.0**	Southeast	GA	Fulton	Atlanta-Sandy Springs-Marietta, GA
131270004	64	75.3		85	56.7	**1.3**	Southeast	GA	Glynn	Brunswick, GA
132150011	46	54.1	yes	94	62.7	**0.9**	Southeast	GA	Muscogee	Columbus, GA-AL
132450091	53	62.4	yes	76	50.7	**1.2**	Southeast	GA	Richmond	Augusta-Richmond County, GA-SC
150030011	31	36.5	yes	91	60.7	**0.6**	Not in PMREG R	HI	Honolulu	Honolulu, HI
150090006	58	68.2		93	62.0	**1.1**	Not in PMREG R	HI	Maui	Kahului-Wailuku, HI
160010009	55	64.7	yes	90	60.0	**1.1**	Northwest	ID	Ada	Boise City-Nampa, ID
160050015	53	62.4	yes	83	55.3	**1.1**	Northwest	ID	Bannock	Pocatello, ID
160050020	50	58.8		75	50.0	**1.2**	Northwest	ID	Bannock	Pocatello, ID
160170005	50	58.8		131	87.3	**0.7**	Northwest	ID	Bonner	
160270002	69	81.2	yes	98	65.3	**1.2**	Northwest	ID	Canyon	Boise City-Nampa, ID
160770011	68	80.0	yes	110	73.3	**1.1**	Northwest	ID	Power	Pocatello, ID
170310022	53	62.4	yes	78	52.0	**1.2**	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170310060	54	63.5	yes	98	65.3	**1.0**	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170311016	71	83.5	yes	93	62.0	**1.3**	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170311901	48	56.5	yes	88	58.7	**1.0**	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170312001	56	65.9	yes	79	52.7	**1.3**	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170314201	47	55.3	yes	80	53.3	**1.0**	Industrial Midwes	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
170990007	59	69.4	yes	86	57.3	**1.2**	Industrial Midwes	IL	La Salle	Ottawa-Streator, IL
171190010	60	70.6	yes	115	76.7	**0.9**	Industrial Midwes	IL	Madison	St. Louis, MO-IL
171191007	76	89.4	yes	110	73.3	**1.2**	Industrial Midwes	IL	Madison	St. Louis, MO-IL
171193007	55	64.7	yes	94	62.7	**1.0**	Industrial Midwes	IL	Madison	St. Louis, MO-IL
171971002	41	48.2	yes	71	47.3	**1.0**	Industrial Midwes	IL	Will	Chicago-Naperville-Joliet, IL-IN-WI

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180630001	77	90.6		77	51.3	**1.8**	Industrial Midwes	IN	Hendricks	Indianapolis-Carmel, IN
180890006	51	60.0	yes	101	67.3	**0.9**	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180890022	69	81.2	yes	115	76.7	**1.1**	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180890023	47	55.3	yes	71	47.3	**1.2**	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
180890031	56	65.9	yes	77	51.3	**1.3**	Industrial Midwes	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
181230006	55	64.7		90	60.0	**1.1**	Industrial Midwes	IN	Perry	
181270023	51	60.0	yes	82	54.7	**1.1**	Industrial Midwes	IN	Porter	Chicago-Naperville-Joliet, IL-IN-WI
181830001	98	115.3		151	100.7	**1.1**	Industrial Midwes	IN	Whitley	Fort Wayne, IN
190330018	82	96.5	yes	104	69.3	**1.4**	Upper Midwest	IA	Cerro Gordo	Mason City, IA
190330020	51	60.0	yes	92	61.3	**1.0**	Upper Midwest	IA	Cerro Gordo	Mason City, IA
191390015	58	68.2	yes	80	53.3	**1.3**	Industrial Midwes	IA	Muscatine	Muscatine, IA
191550010	51	60.0		71	47.3	**1.3**	Upper Midwest	IA	Pottawattamie	Omaha-Council Bluffs, NE-IA
191630017	94	110.6	yes	113	75.3	**1.5**	Industrial Midwes	IA	Scott	Davenport-Moline-Rock Island, IA-IL
191630019	59	69.4	yes	112	74.7	**0.9**	Industrial Midwes	IA	Scott	Davenport-Moline-Rock Island, IA-IL
191930017	52	61.2		96	64.0	**1.0**	Upper Midwest	IA	Woodbury	Sioux City, IA-NE-SD
200570002	53	62.4		94	62.7	**1.0**	Upper Midwest	KS	Ford	Dodge City, KS
201250006	48	56.5	yes	78	52.0	**1.1**	Upper Midwest	KS	Montgomery	Coffeyville, KS
201330002	66	77.6	yes	120	80.0	**1.0**	Upper Midwest	KS	Neosho	
201770013	56	65.9	yes	82	54.7	**1.2**	Upper Midwest	KS	Shawnee	Topeka, KS
201810001	56	65.9		87	58.0	**1.1**	Upper Midwest	KS	Sherman	
202090015	75	88.2	yes	110	73.3	**1.2**	Upper Midwest	KS	Wyandotte	Kansas City, MO-KS
202090021	59	69.4	yes	86	57.3	**1.2**	Upper Midwest	KS	Wyandotte	Kansas City, MO-KS
210190002	77	90.6	yes	117	78.0	**1.2**	Industrial Midwes	KY	Boyd	Huntington-Ashland, WV-KY-OH
210290006	60	70.6		82	54.7	**1.3**	Industrial Midwes	KY	Bullitt	Louisville/Jefferson County, KY-IN
211930003	51	60.0		91	60.7	**1.0**	Industrial Midwes	KY	Perry	
220170008	56	65.9	yes	99	66.0	**1.0**	Southeast	LA	Caddo	Shreveport-Bossier City, LA
220870007	42	49.4		87	58.0	**0.9**	Southeast	LA	St. Bernard	New Orleans-Metairie-Kenner, LA
221210001	76	89.4		89	59.3	**1.5**	Southeast	LA	West Baton Roug	Baton Rouge, LA

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SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
230030013	76	89.4		111	74.0	**1.2**	Northeast	ME	Aroostook	
230031011	58	68.2	yes	87	58.0	**1.2**	Northeast	ME	Aroostook	
230050015	69	81.2	yes	122	81.3	**1.0**	Northeast	ME	Cumberland	Portland-South Portland-Biddeford, ME
245100035	63	74.1		70	46.7	**1.6**	Northeast	MD	Baltimore (City)	Baltimore-Towson, MD
250270023	54	63.5	yes	85	56.7	**1.1**	Northeast	MA	Worcester	Worcester, MA
261630015	51	60.0	yes	74	49.3	**1.2**	Industrial Midwes	MI	Wayne	Detroit-Warren-Livonia, MI
261630033	59	69.4	yes	79	52.7	**1.3**	Industrial Midwes	MI	Wayne	Detroit-Warren-Livonia, MI
270530966	59	69.4	yes	89	59.3	**1.2**	Upper Midwest	MN	Hennepin	Minneapolis-St. Paul-Bloomington, MN-WI
271095008	52	61.2		71	47.3	**1.3**	Upper Midwest	MN	Olmsted	Rochester, MN
271230866	56	65.9	yes	103	68.7	**1.0**	Upper Midwest	MN	Ramsey	Minneapolis-St. Paul-Bloomington, MN-WI
271370032	56	65.9	yes	73	48.7	**1.4**	Upper Midwest	MN	Saint Louis	Duluth, MN-WI
290210005	72	84.7	yes	86	57.3	**1.5**	Upper Midwest	MO	Buchanan	St. Joseph, MO-KS
290970003	68	80.0	yes	106	70.7	**1.1**	Upper Midwest	MO	Jasper	Joplin, MO
291895001	62	72.9		84	56.0	**1.3**	Industrial Midwes	MO	Saint Louis	St. Louis, MO-IL
295100087	48	56.5		70	46.7	**1.2**	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
295100088	81	95.3	yes	110	73.3	**1.3**	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
295100093	97	114.1	yes	126	84.0	**1.4**	Industrial Midwes	MO	St. Louis City	St. Louis, MO-IL
300030011	129	151.8		155	103.3	**1.5**	Northwest	MT	Big Horn	
300030018	61	71.8		95	63.3	**1.1**	Northwest	MT	Big Horn	
300030019	86	101.2		120	80.0	**1.3**	Northwest	MT	Big Horn	
300030023	83	97.6		100	66.7	**1.5**	Northwest	MT	Big Horn	
300290007	44	51.8	yes	105	70.0	**0.7**	Northwest	MT	Flathead	Kalispell, MT
300290009	78	91.8	yes	106	70.7	**1.3**	Northwest	MT	Flathead	Kalispell, MT
300290047	61	71.8	yes	115	76.7	**0.9**	Northwest	MT	Flathead	Kalispell, MT
300350101	80	94.1		97	64.7	**1.5**	Northwest	MT	Glacier	
300430019	75	88.2		90	60.0	**1.5**	Northwest	MT	Jefferson	Helena, MT
300430022	102	120.0		161	107.3	**1.1**	Northwest	MT	Jefferson	Helena, MT
300470013	46	54.1		79	52.7	**1.0**	Northwest	MT	Lake	

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300470028	54	63.5		100	66.7	**1.0**	Northwest	MT	Lake	
300530018	52	61.2	yes	79	52.7	**1.2**	Northwest	MT	Lincoln	
300630022	46	54.1		132	88.0	**0.6**	Northwest	MT	Missoula	Missoula, MT
300630024	60	70.6	yes	104	69.3	**1.0**	Northwest	MT	Missoula	Missoula, MT
300630031	41	48.2		129	86.0	**0.6**	Northwest	MT	Missoula	Missoula, MT
300630034	64	75.3		170	113.3	**0.7**	Northwest	MT	Missoula	Missoula, MT
300830001	74	87.1		105	70.0	**1.2**	Northwest	MT	Richland	
300870307	58	68.2	yes	112	74.7	**0.9**	Northwest	MT	Rosebud	
300890007	49	57.6		104	69.3	**0.8**	Northwest	MT	Sanders	
300930005	75	88.2	yes	124	82.7	**1.1**	Northwest	MT	Silver Bow	Butte-Silver Bow, MT
310250002	57	67.1	yes	111	74.0	**0.9**	Upper Midwest	NE	Cass	Omaha-Council Bluffs, NE-IA
310250008	69	81.2	yes	130	86.7	**0.9**	Upper Midwest	NE	Cass	Omaha-Council Bluffs, NE-IA
310250009	80	94.1	yes	132	88.0	**1.1**	Upper Midwest	NE	Cass	Omaha-Council Bluffs, NE-IA
310470001	58	68.2	yes	119	79.3	**0.9**	Upper Midwest	NE	Dawson	Lexington, NE
310470003	59	69.4	yes	82	54.7	**1.3**	Upper Midwest	NE	Dawson	Lexington, NE
310550028	54	63.5		83	55.3	**1.1**	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550040	59	69.4	yes	78	52.0	**1.3**	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550044	53	62.4	yes	74	49.3	**1.3**	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550045	92	108.2	yes	132	88.0	**1.2**	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
310550054	59	69.4	yes	107	71.3	**1.0**	Upper Midwest	NE	Douglas	Omaha-Council Bluffs, NE-IA
320030007	58	68.2		153	102.0	**0.7**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030020	68	80.0	yes	131	87.3	**0.9**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030022	57	67.1	yes	128	85.3	**0.8**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030023	59	69.4	yes	121	80.7	**0.9**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030043	47	55.3	yes	76	50.7	**1.1**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030075	56	65.9	yes	95	63.3	**1.0**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030298	49	57.6	yes	107	71.3	**0.8**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030539	68	80.0		110	73.3	**1.1**	Southwest	NV	Clark	Las Vegas-Paradise, NV

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320030561	69	81.2	yes	106	70.7	**1.1**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030601	44	51.8	yes	84	56.0	**0.9**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320031019	42	49.4	yes	81	54.0	**0.9**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320031021	53	62.4	yes	76	50.7	**1.2**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320032002	60	70.6	yes	100	66.7	**1.1**	Southwest	NV	Clark	Las Vegas-Paradise, NV
320070004	54	63.5		88	58.7	**1.1**	Northwest	NV	Elko	Elko, NV
320070005	47	55.3		165	110.0	**0.5**	Northwest	NV	Elko	Elko, NV
320211017	46	54.1		87	58.0	**0.9**	Northwest	NV	Mineral	
320230011	52	61.2	yes	81	54.0	**1.1**	Southern Californ	NV	Nye	Pahrump, NV
320230012	73	85.9		173	115.3	**0.7**	Southern Californ	NV	Nye	Pahrump, NV
320230013	53	62.4	yes	93	62.0	**1.0**	Southern Californ	NV	Nye	Pahrump, NV
320310016	74	87.1	yes	92	61.3	**1.4**	Northwest	NV	Washoe	Reno-Sparks, NV
320310020	60	70.6	yes	111	74.0	**1.0**	Northwest	NV	Washoe	Reno-Sparks, NV
320310022	97	114.1	yes	130	86.7	**1.3**	Northwest	NV	Washoe	Reno-Sparks, NV
320310030	81	95.3	yes	108	72.0	**1.3**	Northwest	NV	Washoe	Reno-Sparks, NV
320311005	64	75.3	yes	101	67.3	**1.1**	Northwest	NV	Washoe	Reno-Sparks, NV
340011006	72	84.7		93	62.0	**1.4**	Northeast	NJ	Atlantic	Atlantic City, NJ
340030004	71	83.5		86	57.3	**1.5**	Northeast	NJ	Bergen	New York-Northern New Jersey-Ll, NY-NJ-PA
340070009	67	78.8	yes	94	62.7	**1.3**	Northeast	NJ	Camden	Philadelphia-Camden-Wilmington, PA-NJ-DE-M
340171003	64	75.3	yes	93	62.0	**1.2**	Northeast	NJ	Hudson	New York-Northern New Jersey-Ll NY-NJ-PA
350010023	34	40.0	yes	107	71.3	**0.6**	Southwest	NM	Bernalillo	Albuquerque, NM
350010026	90	105.9	yes	131	87.3	**1.2**	Southwest	NM	Bernalillo	Albuquerque, NM
350010029	92	108.2		143	95.3	**1.1**	Southwest	NM	Bernalillo	Albuquerque, NM
350011013	63	74.1	yes	97	64.7	**1.1**	Southwest	NM	Bernalillo	Albuquerque, NM
350011014	61	71.8		80	53.3	**1.3**	Southwest	NM	Bernalillo	Albuquerque, NM
350015011	44	51.8		92	61.3	**0.8**	Southwest	NM	Bernalillo	Albuquerque, NM
350050005	52	61.2	yes	98	65.3	**0.9**	Southwest	NM	Chaves	Roswell, NM
350130024	69	81.2	yes	168	112.0	**0.7**	Southwest	NM	Dona Ana	Las Cruces, NM

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350171002	31	36.5	yes	81	54.0	**0.7**	Southwest	NM	Grant	Silver City, NM
350250008	49	57.6		119	79.3	**0.7**	Southwest	NM	Lea	Hobbs, NM
350290001	53	62.4	yes	139	92.7	**0.7**	Southwest	NM	Luna	Deming, NM
350311236	66	77.6		105	70.0	**1.1**	Southwest	NM	McKinley	Gallup, NM
350359017	39	45.9		121	80.7	**0.6**	Southwest	NM	Otero	Alamogordo, NM
350439004	86	101.2	yes	139	92.7	**1.1**	Southwest	NM	Sandoval	Albuquerque, NM
350450006	73	85.9		116	77.3	**1.1**	Southwest	NM	San Juan	Farmington, NM
350450019	33	38.8		73	48.7	**0.8**	Southwest	NM	San Juan	Farmington, NM
350451233	63	74.1	yes	119	79.3	**0.9**	Southwest	NM	San Juan	Farmington, NM
350550005	54	63.5		76	50.7	**1.3**	Southwest	NM	Taos	Taos, NM
350559016	64	75.3		70	46.7	**1.6**	Southwest	NM	Taos	Taos, NM
371191005	47	55.3	yes	70	46.7	**1.2**	Southeast	NC	Mecklenburg	Charlotte-Gastonia-Concord, NC-SC
390290022	53	62.4	yes	70	46.7	**1.3**	Industrial Midwes	OH	Columbiana	East Liverpool-Salem, OH
390350027	48	56.5		70	46.7	**1.2**	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350038	59	69.4	yes	78	52.0	**1.3**	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350060	62	72.9	yes	85	56.7	**1.3**	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390350065	81	95.3	yes	118	78.7	**1.2**	Industrial Midwes	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390490024	70	82.4	yes	123	82.0	**1.0**	Industrial Midwes	OH	Franklin	Columbus, OH
390951003	64	75.3	yes	88	58.7	**1.3**	Industrial Midwes	OH	Lucas	
391450021	52	61.2	yes	72	48.0	**1.3**	Industrial Midwes	OH	Scioto	Portsmouth, OH
391750008	167	196.5		167	111.3	**1.8**	Industrial Midwes	OH	Wyandot	
400719010	76	89.4		91	60.7	**1.5**	Southeast	OK	Kay	Ponca City, OK
401010167	58	68.2	yes	106	70.7	**1.0**	Southeast	OK	Muskogee	Muskogee, OK
401090035	45	52.9	yes	120	80.0	**0.7**	Southeast	OK	Oklahoma	Oklahoma City, OK
401091037	48	56.5		116	77.3	**0.7**	Southeast	OK	Oklahoma	Oklahoma City, OK
401159004	60	70.6	yes	80	53.3	**1.3**	Southeast	OK	Ottawa	Miami, OK
401430191	56	65.9	yes	84	56.0	**1.2**	Southeast	OK	Tulsa	Tulsa, OK
410170120	59	69.4		78	52.0	**1.3**	Northwest	OR	Deschutes	Bend, OR

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
410292129	57	67.1	yes	93	62.0	**1.1**	Northwest	OR	Jackson	Medford, OR
410294001	57	67.1	yes	92	61.3	**1.1**	Northwest	OR	Jackson	Medford, OR
410350004	74	87.1	yes	88	58.7	**1.5**	Northwest	OR	Klamath	Klamath Falls, OR
410390058	46	54.1	yes	78	52.0	**1.0**	Northwest	OR	Lane	Eugene-Springfield, OR
410510009	43	50.6	yes	81	54.0	**0.9**	Northwest	OR	Multnomah	Portland-Vancouver-Beaverton, OR-WA
420030064	71	83.5	yes	87	58.0	**1.4**	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420031301	64	75.3	yes	84	56.0	**1.3**	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420033006	68	80.0	yes	99	66.0	**1.2**	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420037004	86	101.2	yes	112	74.7	**1.4**	Industrial Midwes	PA	Allegheny	Pittsburgh, PA
420070014	53	62.4	yes	80	53.3	**1.2**	Industrial Midwes	PA	Beaver	Pittsburgh, PA
420110015	47	55.3		82	54.7	**1.0**	Northeast	PA	Berks	Reading, PA
420730015	62	72.9	yes	77	51.3	**1.4**	Industrial Midwes	PA	Lawrence	New Castle, PA
420951000	59	69.4	yes	90	60.0	**1.2**	Northeast	PA	Northampton	Allentown-Bethlehem-Easton, PA-NJ
421010649	56	65.9	yes	80	53.3	**1.2**	Northeast	PA	Philadelphia	Philadelphia-Camden-Wilmington, PA-NJ-DE-M
450430006	58	68.2	yes	80	53.3	**1.3**	Southeast	SC	Georgetown	Georgetown, SC
450630009	64	75.3	yes	90	60.0	**1.3**	Southeast	SC	Lexington	Columbia, SC
450790007	38	44.7		72	48.0	**0.9**	Southeast	SC	Richland	Columbia, SC
460130003	54	63.5	yes	81	54.0	**1.2**	Upper Midwest	SD	Brown	Aberdeen, SD
460290002	67	78.8	yes	86	57.3	**1.4**	Upper Midwest	SD	Codington	Watertown, SD
460930001	35	41.2	yes	70	46.7	**0.9**	Upper Midwest	SD	Meade	Rapid City, SD
461030013	72	84.7	yes	88	58.7	**1.4**	Upper Midwest	SD	Pennington	Rapid City, SD
461030020	95	111.8	yes	123	82.0	**1.4**	Upper Midwest	SD	Pennington	Rapid City, SD
461270001	51	60.0		82	54.7	**1.1**	Upper Midwest	SD	Union	Sioux City, IA-NE-SD
471570016	44	51.8	yes	71	47.3	**1.1**	Southeast	TN	Shelby	Memphis, TN-MS-AR
471730107	73	85.9	yes	104	69.3	**1.2**	Southeast	TN	Union	Knoxville, TN
480290053	49	57.6	yes	84	56.0	**1.0**	Southwest	TX	Bexar	San Antonio, TX
480610006	50	58.8	yes	75	50.0	**1.2**	Southeast	TX	Cameron	Brownsville-Harlingen, TX
480612002	49	57.6		70	46.7	**1.2**	Southeast	TX	Cameron	Brownsville-Harlingen, TX

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
481410002	74	87.1		107	71.3	**1.2**	Southwest	TX	El Paso	El Paso, TX
481410037	81	95.3	yes	154	102.7	**0.9**	Southwest	TX	El Paso	El Paso, TX
481410038	65	76.5		76	50.7	**1.5**	Southwest	TX	El Paso	El Paso, TX
481410044	88	103.5	yes	136	90.7	**1.1**	Southwest	TX	El Paso	El Paso, TX
481410057	90	105.9	yes	168	112.0	**0.9**	Southwest	TX	El Paso	El Paso, TX
481410059	51	60.0		72	48.0	**1.3**	Southwest	TX	El Paso	El Paso, TX
481670004	58	68.2		72	48.0	**1.4**	Southeast	TX	Galveston	Houston-Sugar Land-Baytown, TX
482010062	52	61.2	yes	104	69.3	**0.9**	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482011035	126	148.2	yes	190	126.7	**1.2**	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
482150043	48	56.5	yes	80	53.3	**1.1**	Southwest	TX	Hidalgo	McAllen-Edinburg-Mission, TX
483550034	62	72.9	yes	95	63.3	**1.2**	Southeast	TX	Nueces	Corpus Christi, TX
484790016	59	69.4	yes	119	79.3	**0.9**	Southwest	TX	Webb	Laredo, TX
484790017	44	51.8	yes	74	49.3	**1.0**	Southwest	TX	Webb	Laredo, TX
490050004	58	68.2	yes	93	62.0	**1.1**	Northwest	UT	Cache	Logan, UT-ID
490110004	71	83.5	yes	103	68.7	**1.2**	Northwest	UT	Davis	Ogden-Clearfield, UT
490350003	75	88.2	yes	110	73.3	**1.2**	Northwest	UT	Salt Lake	Salt Lake City, UT
490350012	102	120.0	yes	174	116.0	**1.0**	Northwest	UT	Salt Lake	Salt Lake City, UT
490351001	57	67.1	yes	89	59.3	**1.1**	Northwest	UT	Salt Lake	Salt Lake City, UT
490353006	88	103.5	yes	138	92.0	**1.1**	Northwest	UT	Salt Lake	Salt Lake City, UT
490490002	79	92.9	yes	146	97.3	**1.0**	Northwest	UT	Utah	Provo-Orem, UT
490494001	91	107.1	yes	177	118.0	**0.9**	Northwest	UT	Utah	Provo-Orem, UT
490570002	76	89.4	yes	118	78.7	**1.1**	Northwest	UT	Weber	Ogden-Clearfield, UT
510690012	72	84.7		88	58.7	**1.4**	Northeast	VA	Frederick	Winchester, VA-WV
517100024	47	55.3	yes	88	58.7	**0.9**	Northeast	VA	Norfolk City	Virginia Beach-Norfolk-Newport News, VA-NC
517700011	61	71.8	yes	75	50.0	**1.4**	Industrial Midwes	VA	Roanoke City	Roanoke, VA
530050002	63	74.1	yes	116	77.3	**1.0**	Northwest	WA	Benton	Kennewick-Richland-Pasco, WA
530630016	57	67.1		89	59.3	**1.1**	Northwest	WA	Spokane	Spokane, WA
530650004	103	121.2	yes	200	133.3	**0.9**	Northwest	WA	Stevens	

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
530710006	64	75.3	yes	112	74.7	**1.0**	Northwest	WA	Walla Walla	Walla Walla, WA
540090011	56	65.9	yes	80	53.3	**1.2**	Industrial Midwes	WV	Brooke	Weirton-Steubenville, WV-OH
540290009	54	63.5	yes	75	50.0	**1.3**	Industrial Midwes	WV	Hancock	Weirton-Steubenville, WV-OH
540291004	49	57.6	yes	82	54.7	**1.1**	Industrial Midwes	WV	Hancock	Weirton-Steubenville, WV-OH
550790059	48	56.5		71	47.3	**1.2**	Industrial Midwes	WI	Milwaukee	Milwaukee-Waukesha-West Allis, WI
560010006	57	67.1		73	48.7	**1.4**	Northwest	WY	Albany	Laramie, WY
560010800	103	121.2	yes	190	126.7	**1.0**	Northwest	WY	Albany	Laramie, WY
560010801	65	76.5	yes	98	65.3	**1.2**	Northwest	WY	Albany	Laramie, WY
560050088	56	65.9		73	48.7	**1.4**	Northwest	WY	Campbell	Gillette, WY
560050808	82	96.5	yes	139	92.7	**1.0**	Northwest	WY	Campbell	Gillette, WY
560050826	62	72.9	yes	91	60.7	**1.2**	Northwest	WY	Campbell	Gillette, WY
560050857	65	76.5		121	80.7	**0.9**	Northwest	WY	Campbell	Gillette, WY
560050869	91	107.1	yes	131	87.3	**1.2**	Northwest	WY	Campbell	Gillette, WY
560050870	114	134.1		144	96.0	**1.4**	Northwest	WY	Campbell	Gillette, WY
560050874	99	116.5		142	94.7	**1.2**	Northwest	WY	Campbell	Gillette, WY
560050875	72	84.7	yes	117	78.0	**1.1**	Northwest	WY	Campbell	Gillette, WY
560050877	55	64.7		99	66.0	**1.0**	Northwest	WY	Campbell	Gillette, WY
560050881	68	80.0	yes	93	62.0	**1.3**	Northwest	WY	Campbell	Gillette, WY
560050883	63	74.1	yes	149	99.3	**0.7**	Northwest	WY	Campbell	Gillette, WY
560050884	47	55.3	yes	72	48.0	**1.2**	Northwest	WY	Campbell	Gillette, WY
560050885	69	81.2	yes	116	77.3	**1.0**	Northwest	WY	Campbell	Gillette, WY
560050886	64	75.3	yes	90	60.0	**1.3**	Northwest	WY	Campbell	Gillette, WY
560050889	46	54.1	yes	131	87.3	**0.6**	Northwest	WY	Campbell	Gillette, WY
560050891	79	92.9	yes	119	79.3	**1.2**	Northwest	WY	Campbell	Gillette, WY
560050893	37	43.5		72	48.0	**0.9**	Northwest	WY	Campbell	Gillette, WY
560050895	56	65.9	yes	70	46.7	**1.4**	Northwest	WY	Campbell	Gillette, WY
560050899	69	81.2		107	71.3	**1.1**	Northwest	WY	Campbell	Gillette, WY
560050901	79	92.9		143	95.3	**1.0**	Northwest	WY	Campbell	Gillette, WY

Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
560050907	73	85.9	yes	116	77.3	**1.1**	Northwest	WY	Campbell	Gillette, WY
560050908	51	60.0	yes	72	48.0	**1.3**	Northwest	WY	Campbell	Gillette, WY
560050910	89	104.7		100	66.7	**1.6**	Northwest	WY	Campbell	Gillette, WY
560050916	91	107.1		123	82.0	**1.3**	Northwest	WY	Campbell	Gillette, WY
560050917	99	116.5		143	95.3	**1.2**	Northwest	WY	Campbell	Gillette, WY
560051002	61	71.8	yes	74	49.3	**1.5**	Northwest	WY	Campbell	Gillette, WY
560051899	71	83.5		91	60.7	**1.4**	Northwest	WY	Campbell	Gillette, WY
560051915	66	77.6		96	64.0	**1.2**	Northwest	WY	Campbell	Gillette, WY
560051917	77	90.6		93	62.0	**1.5**	Northwest	WY	Campbell	Gillette, WY
560090819	51	60.0		71	47.3	**1.3**	Northwest	WY	Converse	
560090850	81	95.3	yes	110	73.3	**1.3**	Northwest	WY	Converse	
560090851	93	109.4	yes	154	102.7	**1.1**	Northwest	WY	Converse	
560131003	41	48.2	yes	95	63.3	**0.8**	Northwest	WY	Fremont	Riverton, WY
560230800	73	85.9	yes	139	92.7	**0.9**	Northwest	WY	Lincoln	
560230820	54	63.5	yes	126	84.0	**0.8**	Northwest	WY	Lincoln	
560290001	46	54.1		91	60.7	**0.9**	Northwest	WY	Park	
560310805	106	124.7		174	116.0	**1.1**	Northwest	WY	Platte	
560330002	60	70.6	yes	103	68.7	**1.0**	Northwest	WY	Sheridan	Sheridan, WY
560350098	69	81.2		95	63.3	**1.3**	Northwest	WY	Sublette	
560370007	62	72.9	yes	102	68.0	**1.1**	Northwest	WY	Sweetwater	Rock Springs, WY
560370013	63	74.1	yes	91	60.7	**1.2**	Northwest	WY	Sweetwater	Rock Springs, WY
560370014	46	54.1	yes	195	130.0	**0.4**	Northwest	WY	Sweetwater	Rock Springs, WY
560370200	44	51.8	yes	93	62.0	**0.8**	Northwest	WY	Sweetwater	Rock Springs, WY
560370847	54	63.5		74	49.3	**1.3**	Northwest	WY	Sweetwater	Rock Springs, WY
560370848	97	114.1	yes	116	77.3	**1.5**	Northwest	WY	Sweetwater	Rock Springs, WY
560370852	49	57.6	yes	75	50.0	**1.2**	Northwest	WY	Sweetwater	Rock Springs, WY
560370860	67	78.8	yes	150	100.0	**0.8**	Northwest	WY	Sweetwater	Rock Springs, WY
560370866	43	50.6	yes	98	65.3	**0.8**	Northwest	WY	Sweetwater	Rock Springs, WY

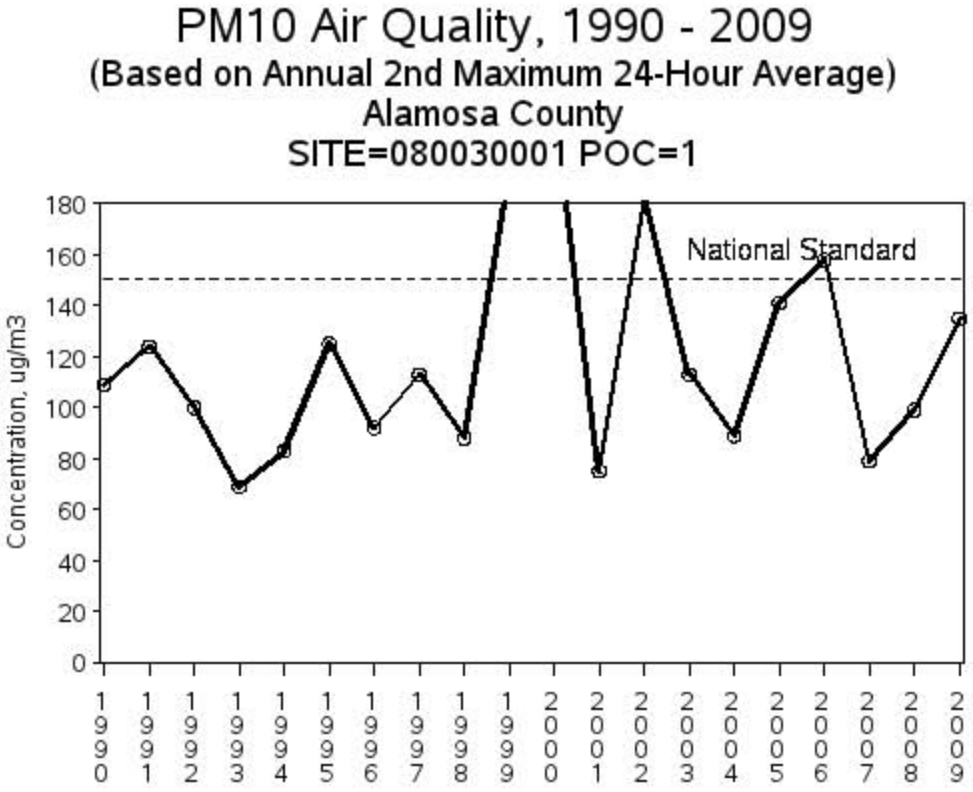
Appendix D. Ratios of Three-Year Design Value Compliance Margins

SITE	3-year average 98th per centile, 2007-2009	Percentage of 85 ug/M3, 98th Percentile Format	Three-year data set complete?	Existing standard design value, 2007-2009	Percentage of Existing 150 ug/M3, One-exceedance Format	**Ratio of Compliance Margins, 98th Percentile versus Exising Standard**	PM Region	state	county	CBSA
560370867	64	75.3	yes	110	73.3	**1.0**	Northwest	WY	Sweetwater	Rock Springs, WY
560370868	70	82.4	yes	148	98.7	**0.8**	Northwest	WY	Sweetwater	Rock Springs, WY
560370875	46	54.1		74	49.3	**1.1**	Northwest	WY	Sweetwater	Rock Springs, WY
560371236	40	47.1		74	49.3	**1.0**	Northwest	WY	Sweetwater	Rock Springs, WY
560371868	87	102.4		176	117.3	**0.9**	Northwest	WY	Sweetwater	Rock Springs, WY
560391006	36	42.4		93	62.0	**0.7**	Northwest	WY	Teton	Jackson, WY-ID
560410101	41	48.2	yes	73	48.7	**1.0**	Northwest	WY	Uinta	Evanston, WY
720330004	70	82.4	yes	107	71.3	**1.2**	Not in PMREG R	PR	Catano	San Juan-Caguas-Guaynabo, PR
720530003	60	70.6		75	50.0	**1.4**	Not in PMREG R	PR	Fajardo	Fajardo, PR
720570008	68	80.0		96	64.0	**1.3**	Not in PMREG R	PR	Guayama	Guayama, PR
720610001	63	74.1		95	63.3	**1.2**	Not in PMREG R	PR	Guaynabo	San Juan-Caguas-Guaynabo, PR
720610005	74	87.1		106	70.7	**1.2**	Not in PMREG R	PR	Guaynabo	San Juan-Caguas-Guaynabo, PR
721130004	70	82.4		80	53.3	**1.5**	Not in PMREG R	PR	Ponce	Ponce, PR
721270003	75	88.2		103	68.7	**1.3**	Not in PMREG R	PR	San Juan	San Juan-Caguas-Guaynabo, PR
721270010	75	88.2		86	57.3	**1.5**	Not in PMREG R	PR	San Juan	San Juan-Caguas-Guaynabo, PR
780100008	73	85.9		124	82.7	**1.0**	Not in PMREG R	VI	St Croix	
780100012	105	123.5		148	98.7	**1.3**	Not in PMREG R	VI	St Croix	
780300007	89	104.7		119	79.3	**1.3**	Not in PMREG R	VI	St Thomas	
780300010	88	103.5		137	91.3	**1.1**	Not in PMREG R	VI	St Thomas	

APPENDIX E

Long Term PM_{10} Concentration Trends

All charts from http://www.epa.gov/airtrends/pm.html#pmloc


PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Alamosa County
SITE=080030001 POC=1
National Standard
Concentration, ug/m3
0
20
40
60
80
100
120
140
160
180
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
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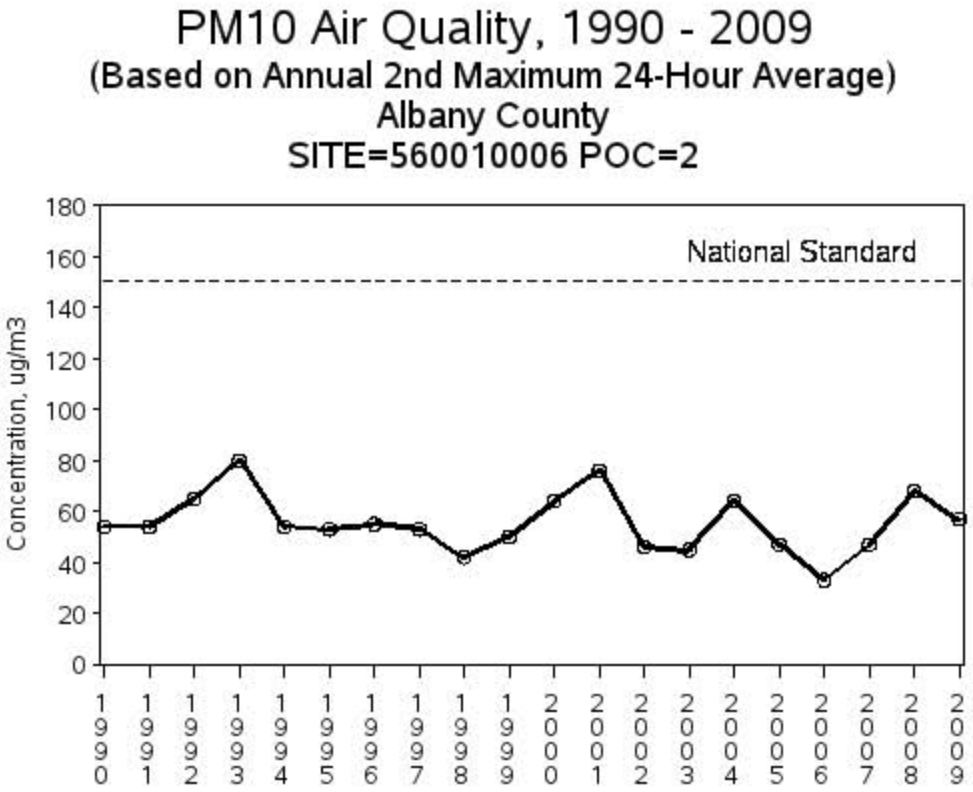
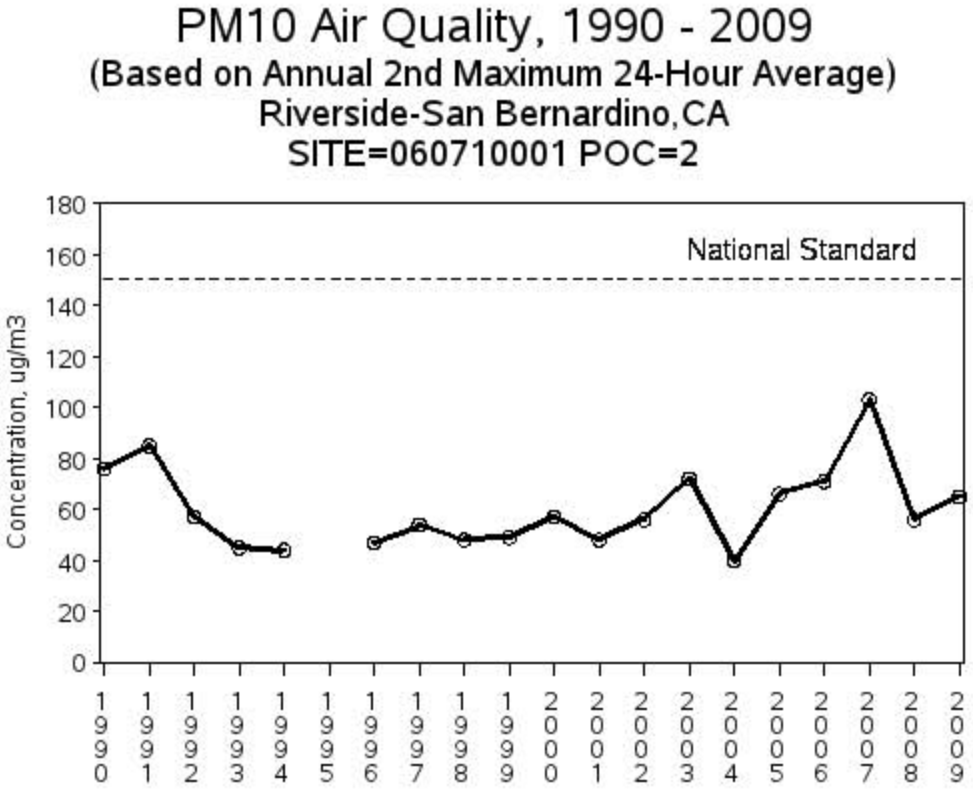
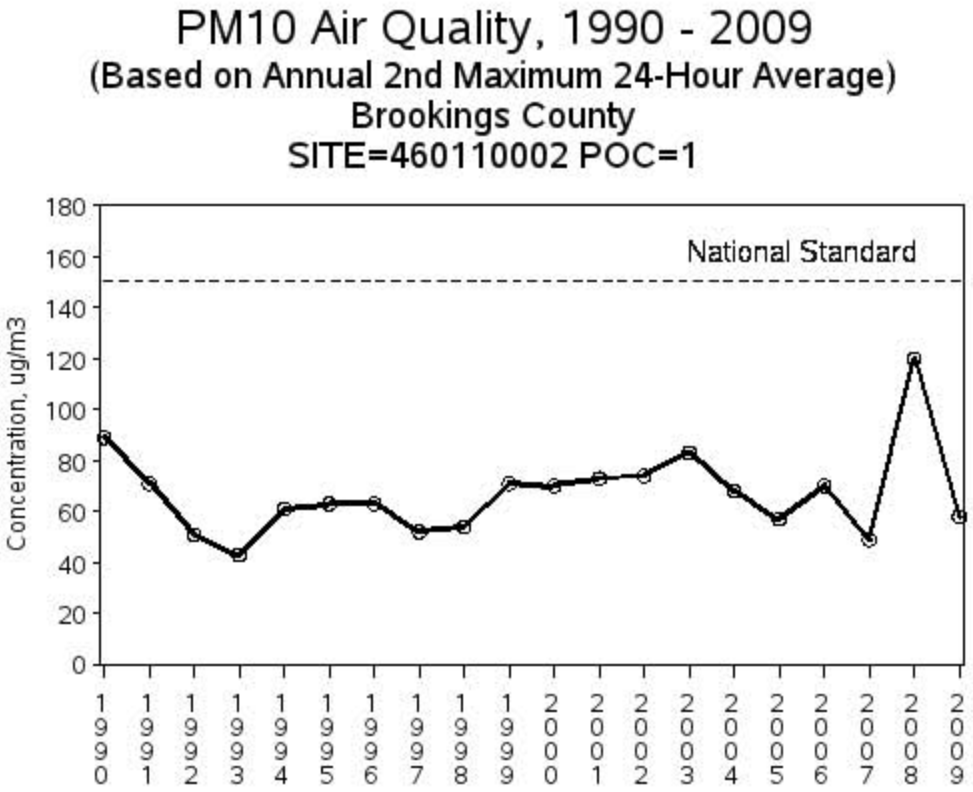
2004
2005
2006
2007
2008
2009


PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Albany County
SITE=560010006 POC=2
National Standard
Concentration, ug/m3
0
20
40
60
80
100
120
140
160
180
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009


PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Riverside-San Bernardino,CA
SITE=060710001 POC=2
National Standard
Concentration, ug/m3
0
20
40
60
80
100
120
140
160
180
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009


PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Brookings County
SITE=460110002 POC=1
National Standard
Concentration, ug/m3
0
20
40
60
80
100
120
140
160
180
1990
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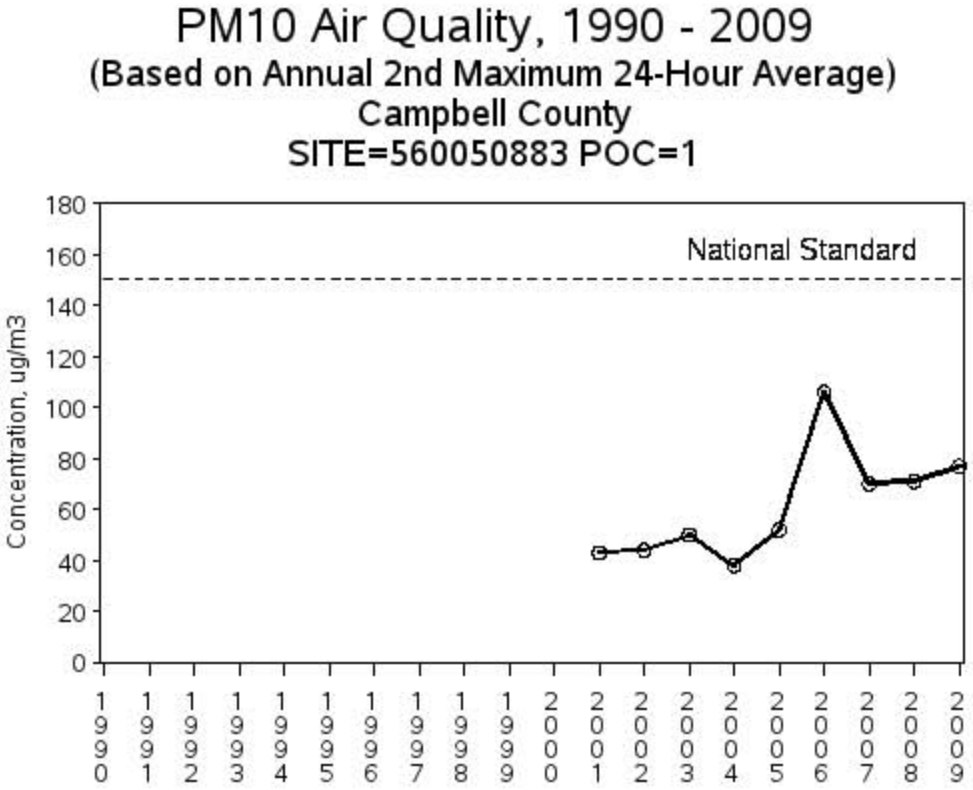
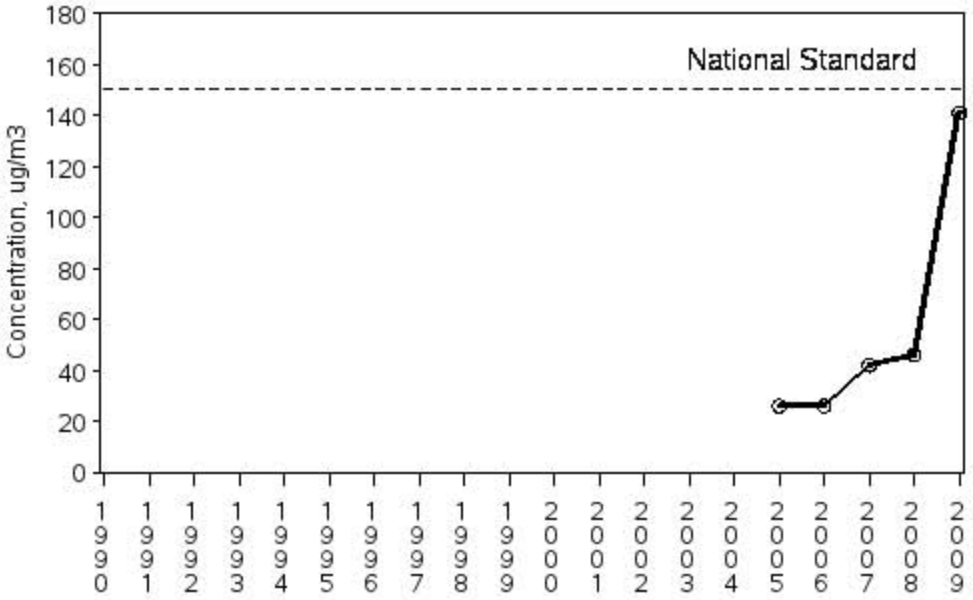
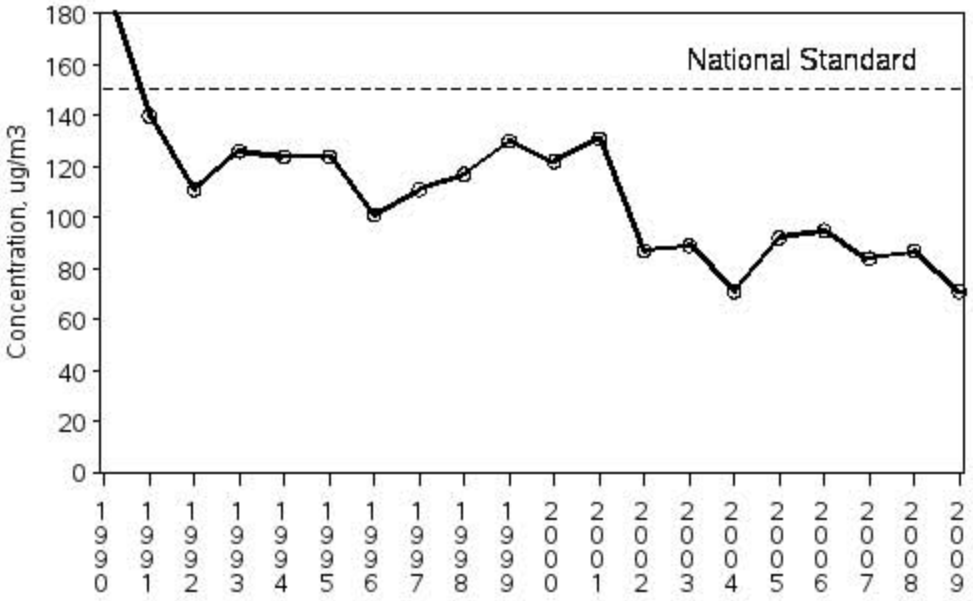
2004
2005
2006
2007
2008
2009

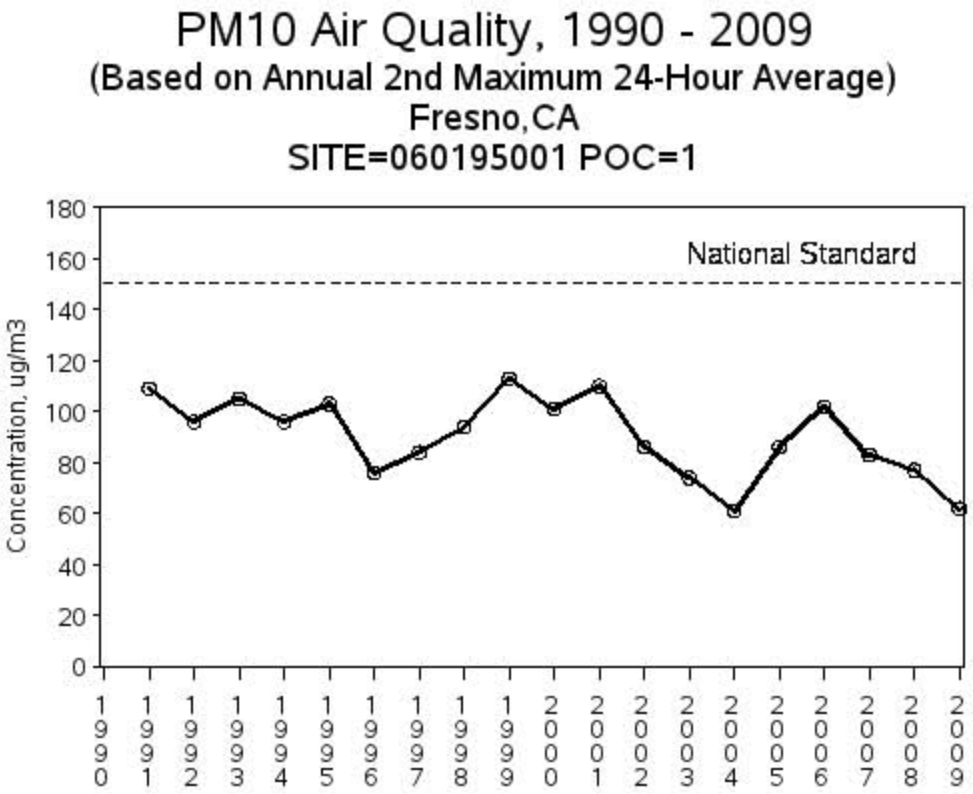

PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Campbell County
SITE=560050883 POC=1
National Standard
Concentration, ug/m3
180
160
140
120
100
80
60
40
20
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Custer County
SITE=460330132 POC=3



PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Fresno,CA
SITE=060190007 POC=1




PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Fresno,CA
SITE=060195001 POC=1
National Standard
Concentration, ug/m3
180
160
140
120
100
80
60
40
20
0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
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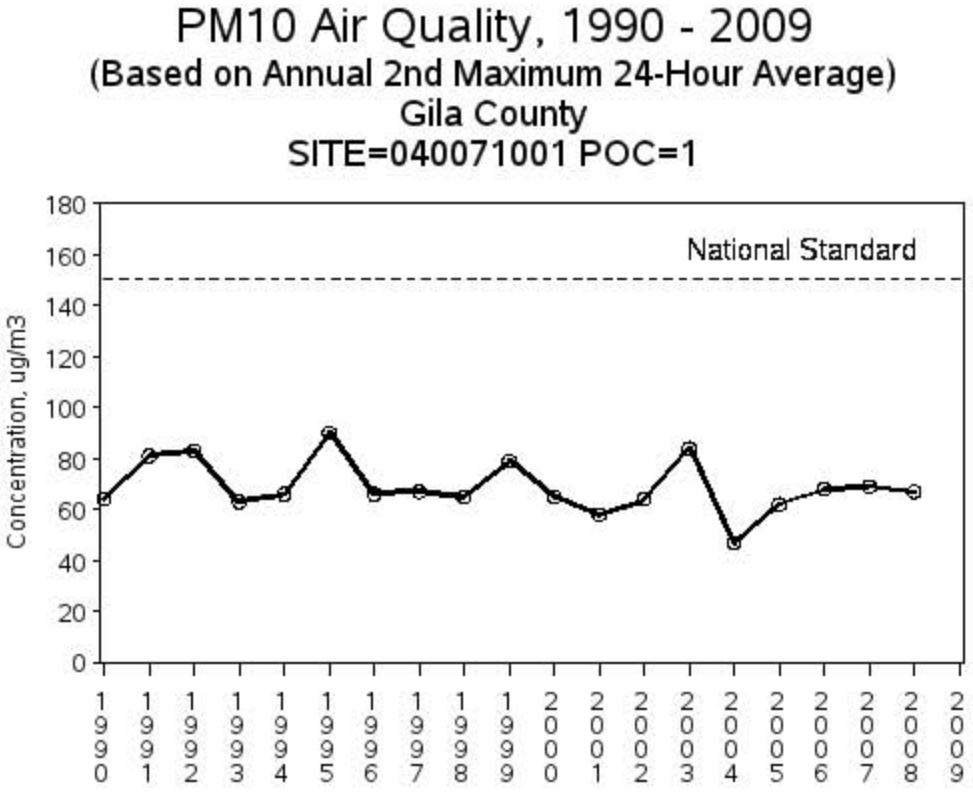
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Gila County
SITE=040071001 POC=1
National Standard
Concentration, ug/m3
180
160
140
120
100
80
60
40
20
0
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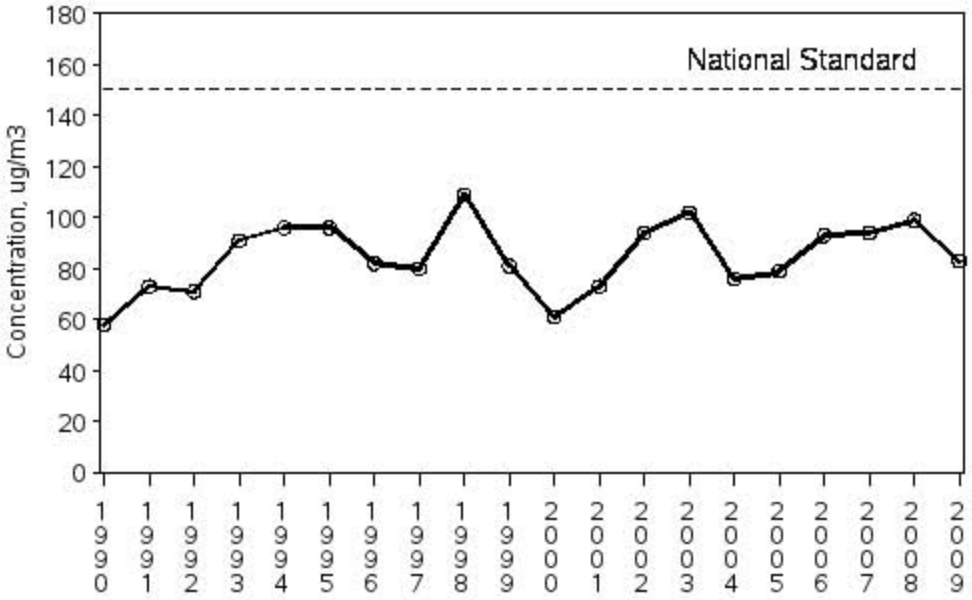
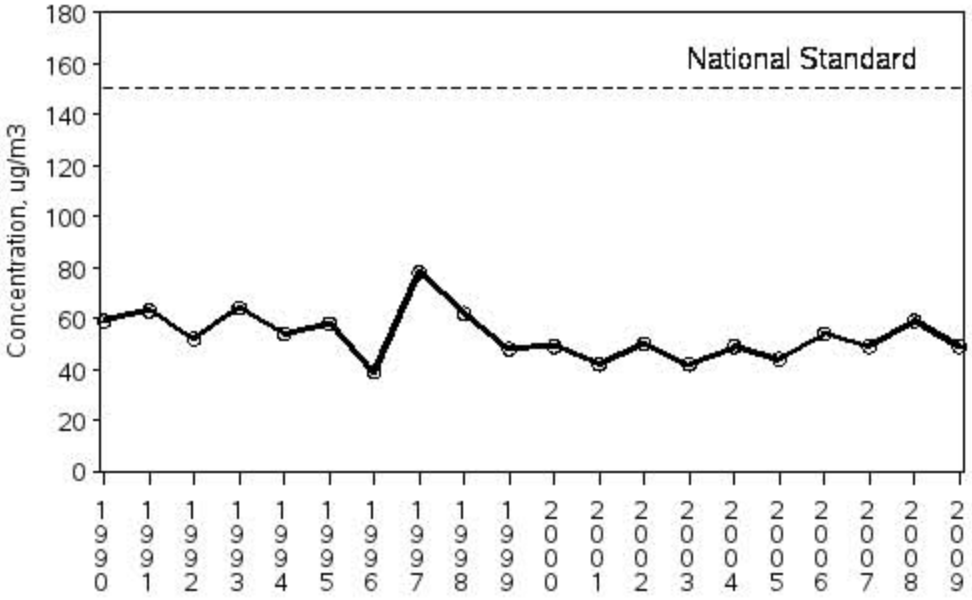
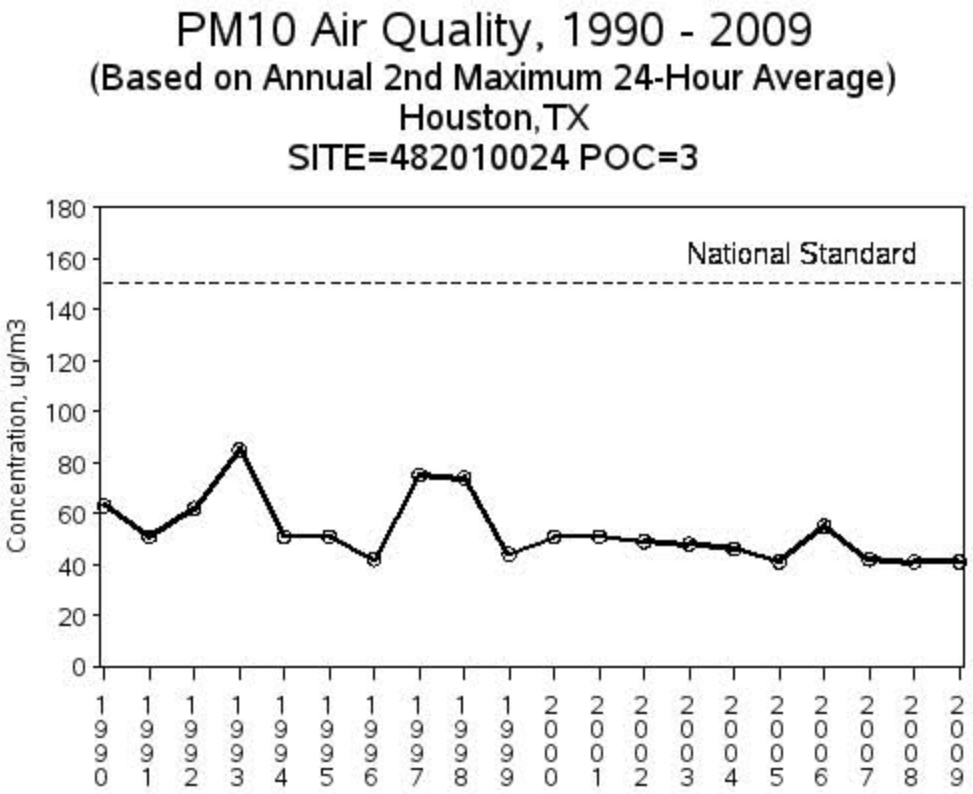
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Gunnison County
SITE=080510004 POC=2



PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Houston,TX
SITE=482010062 POC=1




PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Houston,TX
SITE=482010024 POC=3
National Standard
Concentration, ug/m3
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160
140
120
100
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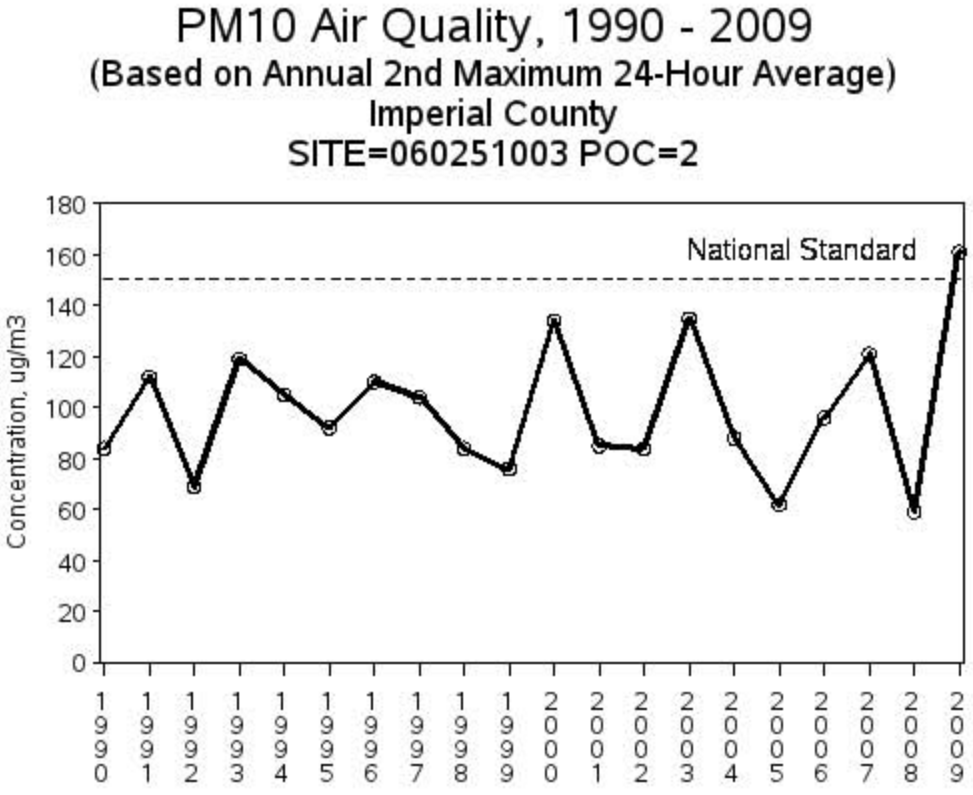
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Imperial County
SITE=060251003 POC=2
National Standard
Concentration, ug/m3
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160
140
120
100
80
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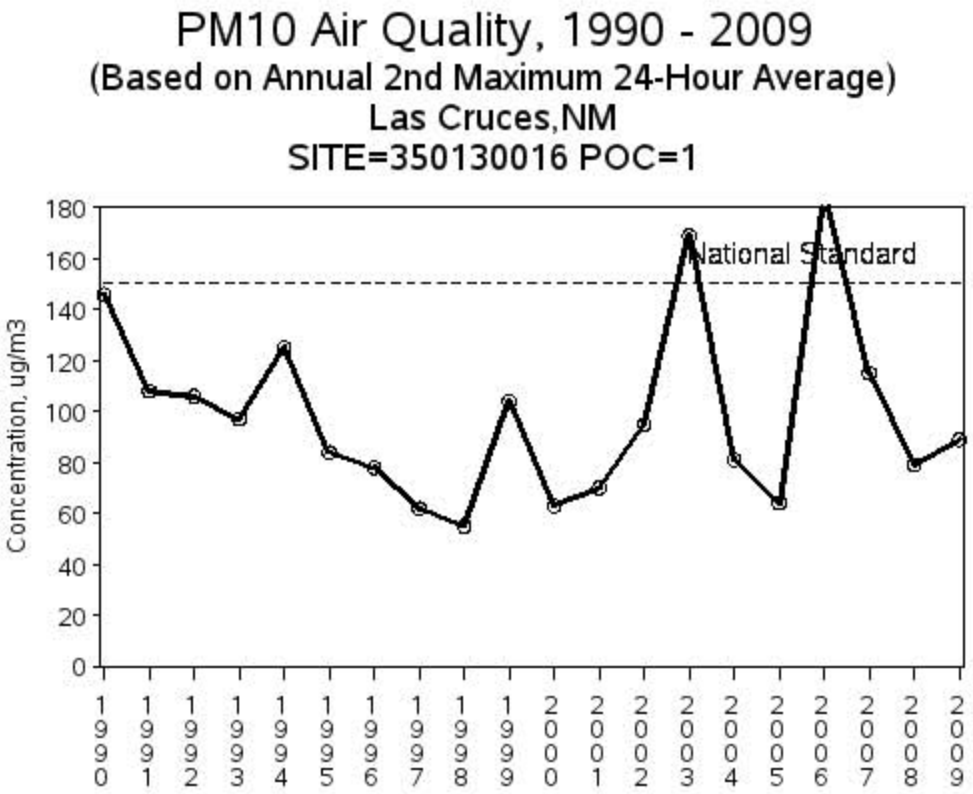
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Las Cruces,NM
SITE=350130016 POC=1
National Standard
Concentration, ug/m3
0
20
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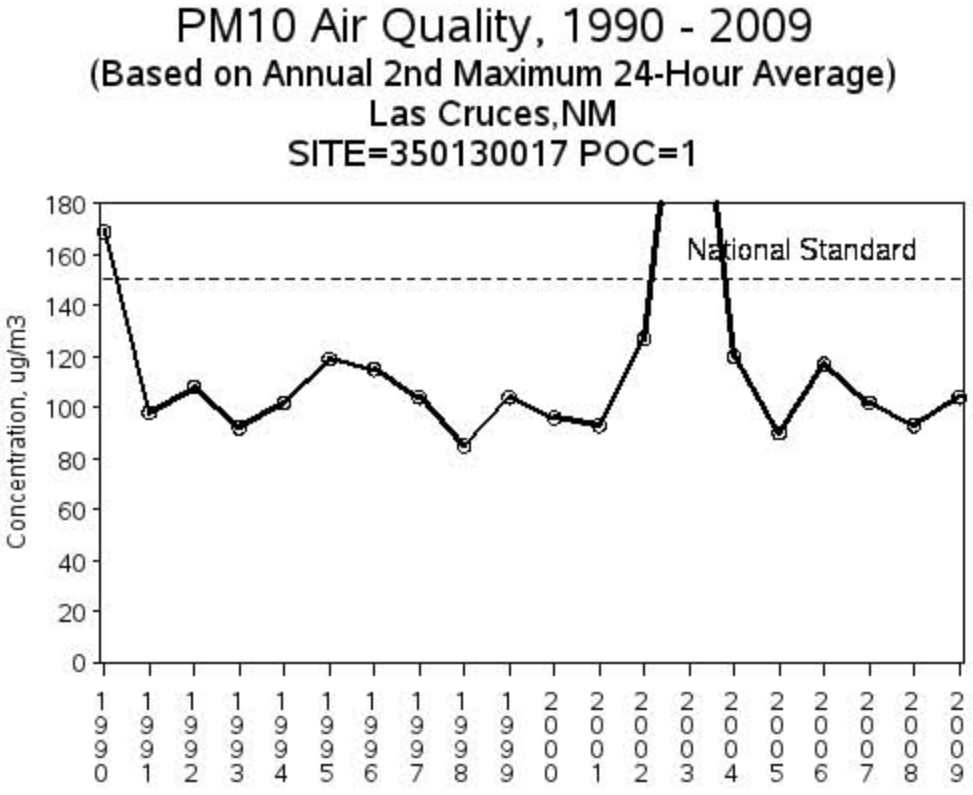
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Las Cruces,NM
SITE=350130017 POC=1
National Standard
Concentration, ug/m3
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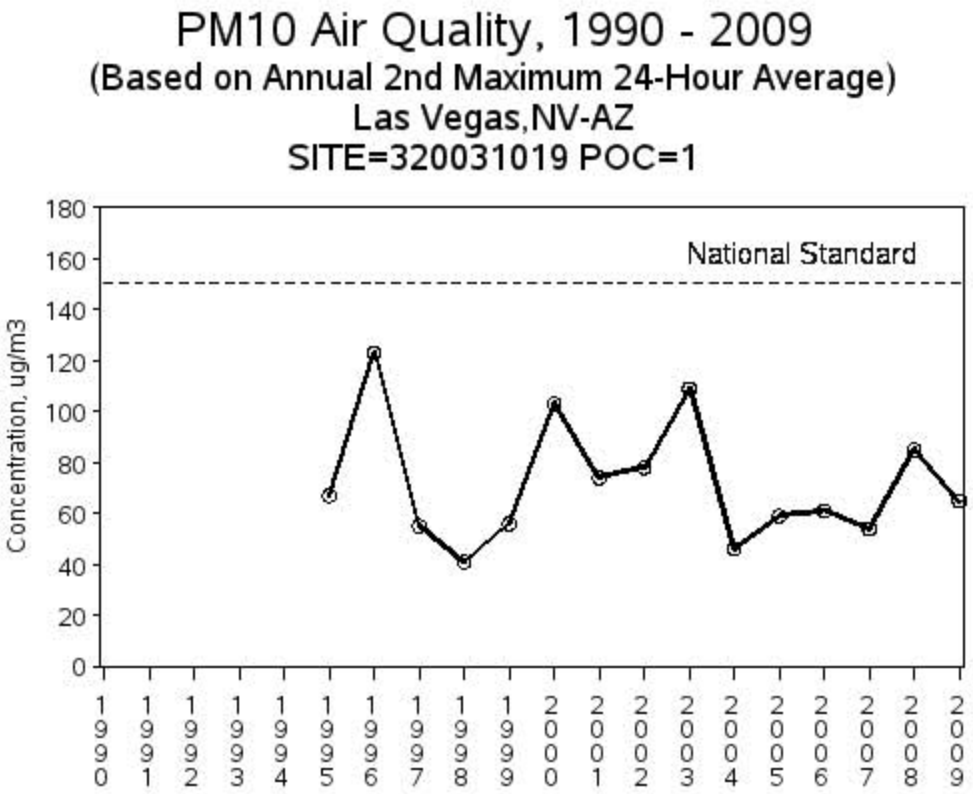
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Las Vegas,NV-AZ
SITE=320031019 POC=1
National Standard
Concentration, ug/m3
0
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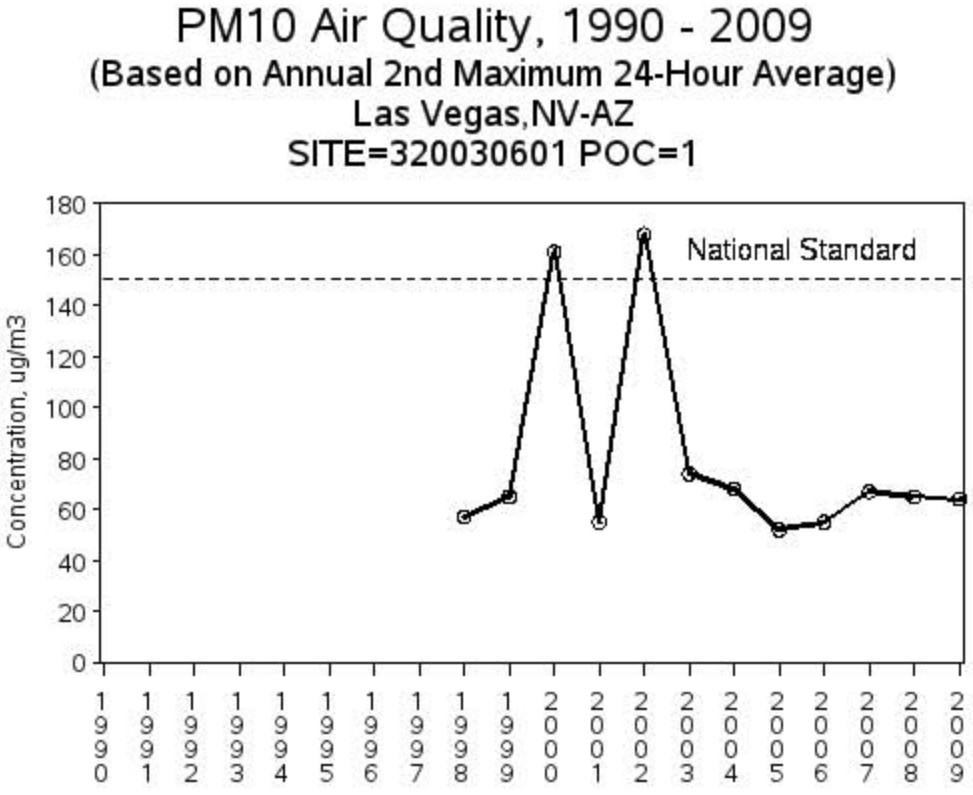
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Las Vegas,NV-AZ
SITE=320030601 POC=1
National Standard
Concentration, ug/m3
0
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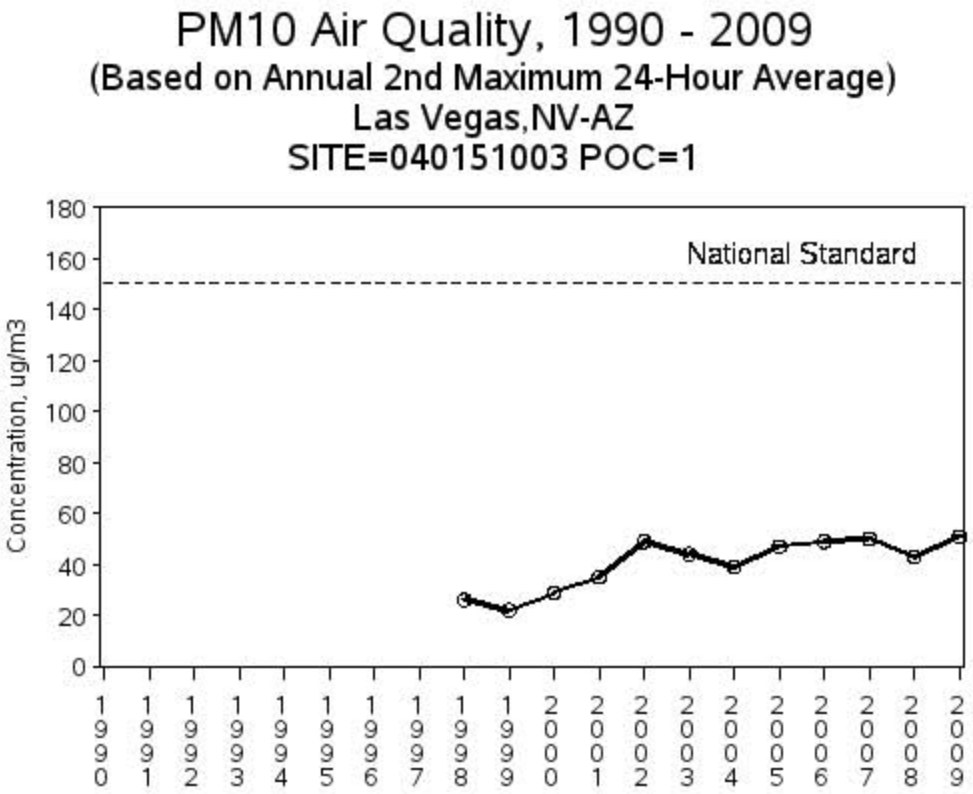
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Las Vegas,NV-AZ
SITE=040151003 POC=1
National Standard
Concentration, ug/m3
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120
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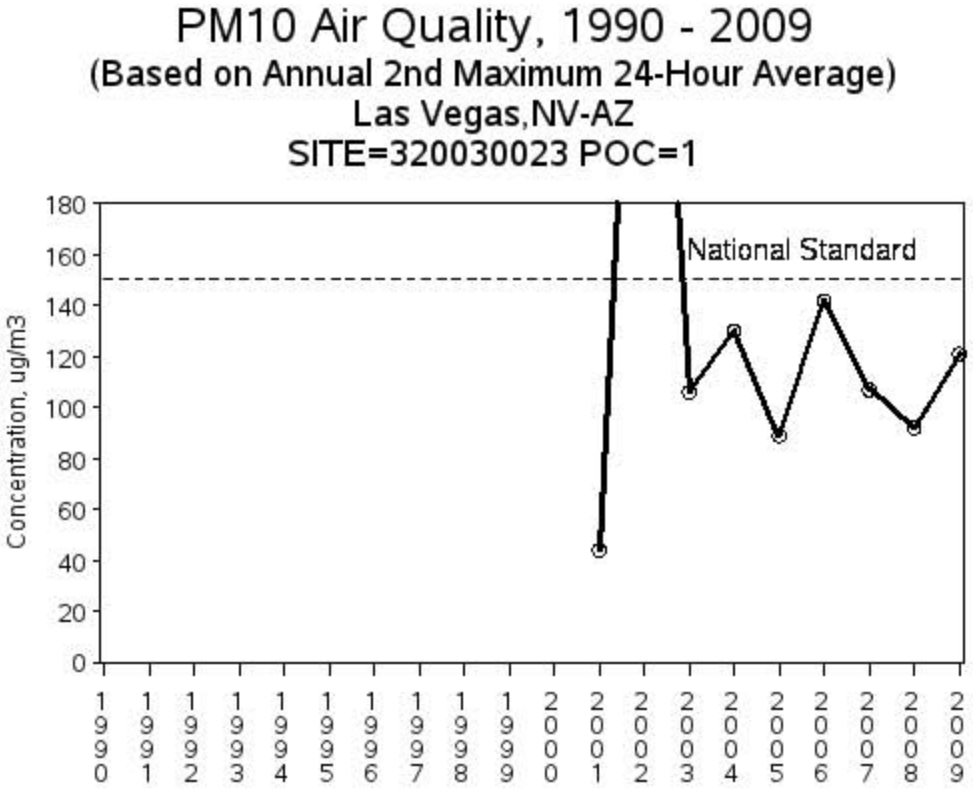
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Las Vegas,NV-AZ
SITE=320030023 POC=1
National Standard
Concentration, ug/m3
0
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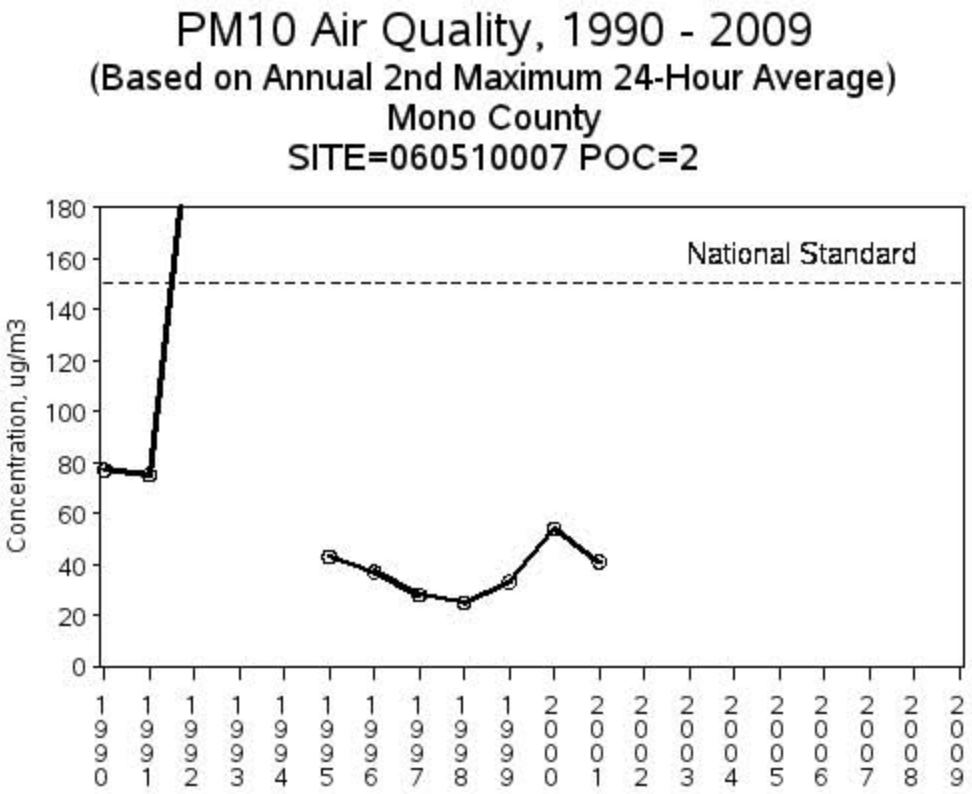
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Mono County
SITE=060510007 POC=2
National Standard
Concentration, ug/m3
0
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100
120
140
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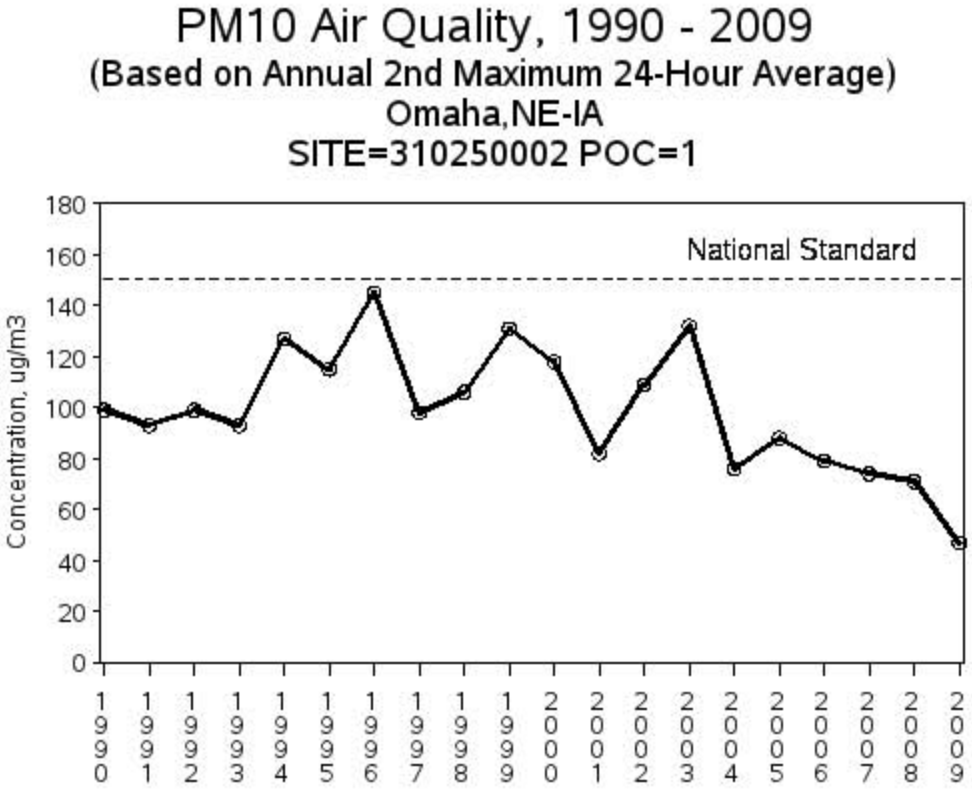
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Omaha,NE-IA
SITE=310250002 POC=1
National Standard
Concentration, ug/m3
0
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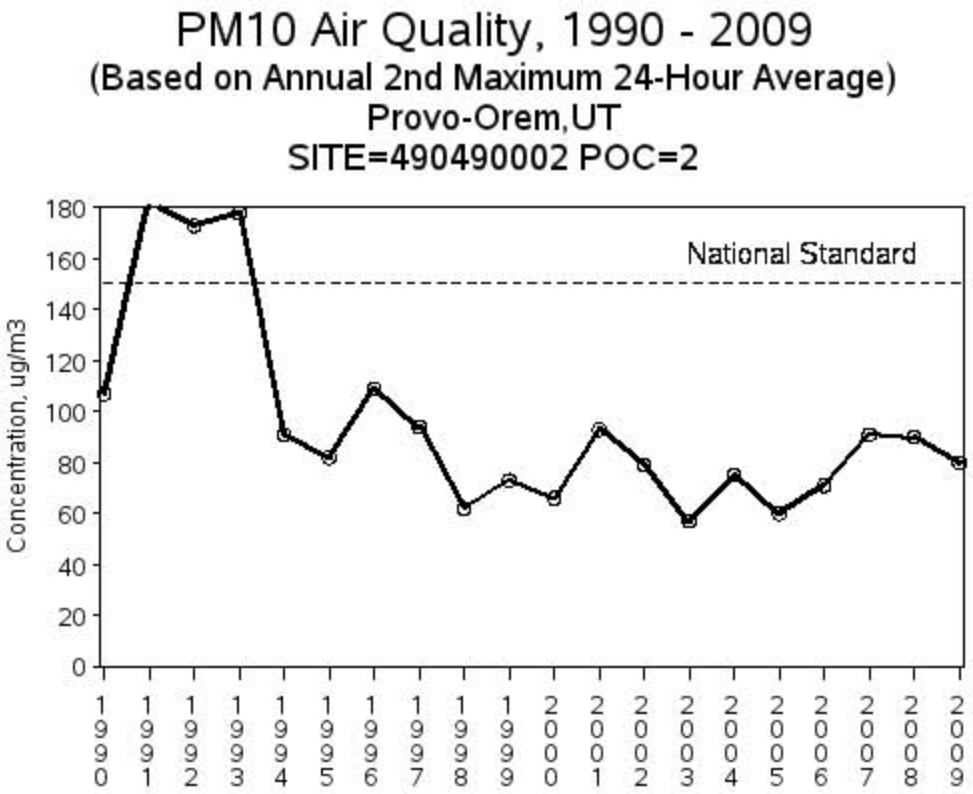
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Provo-Orem,UT
SITE=490490002 POC=2
National Standard
Concentration, ug/m3
0
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80
100
120
140
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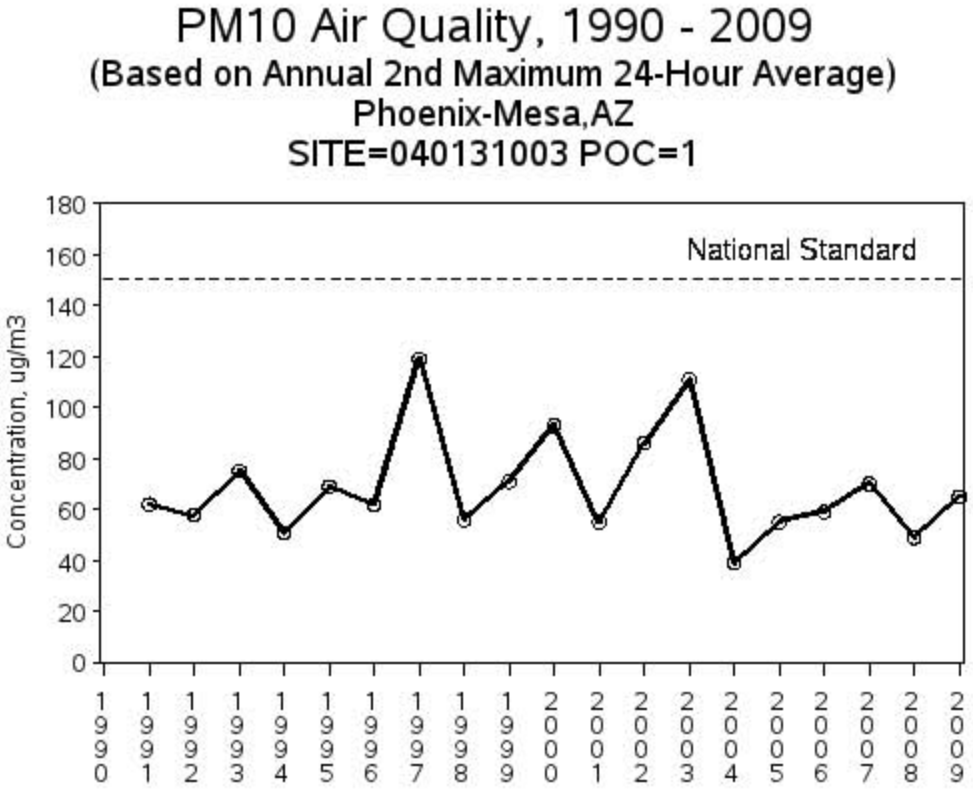
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Phoenix-Mesa,AZ
SITE=040131003 POC=1
National Standard
Concentration, ug/m3
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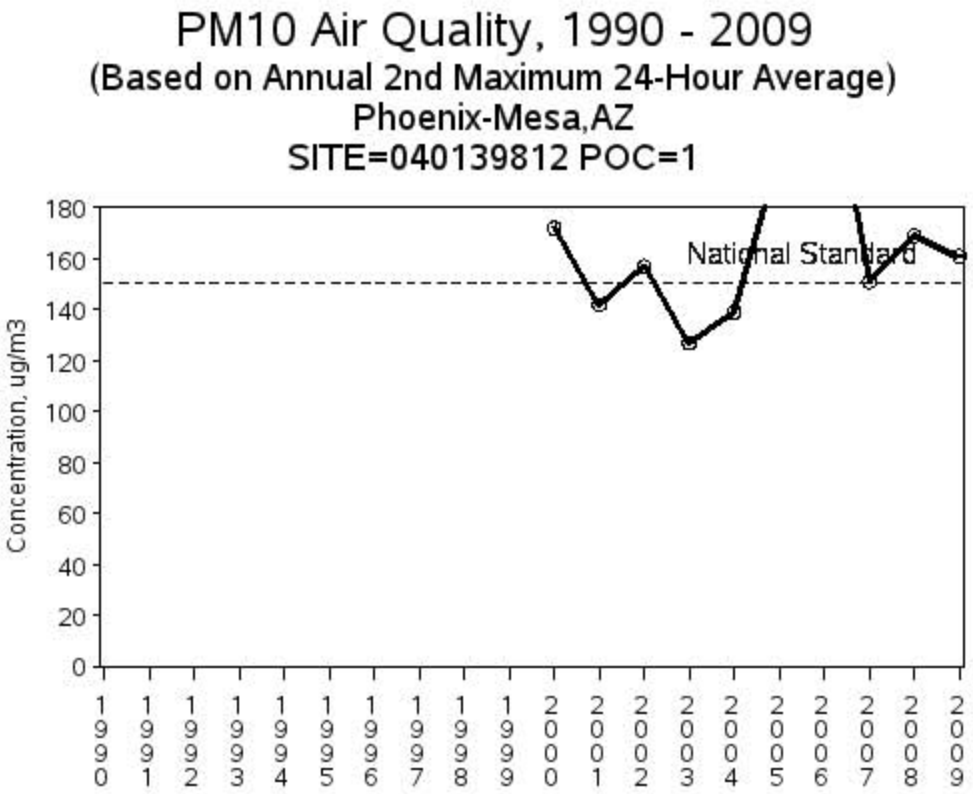
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Phoenix-Mesa,AZ
SITE=040139812 POC=1
National Standard
Concentration, ug/m3
180
160
140
120
100
80
60
40
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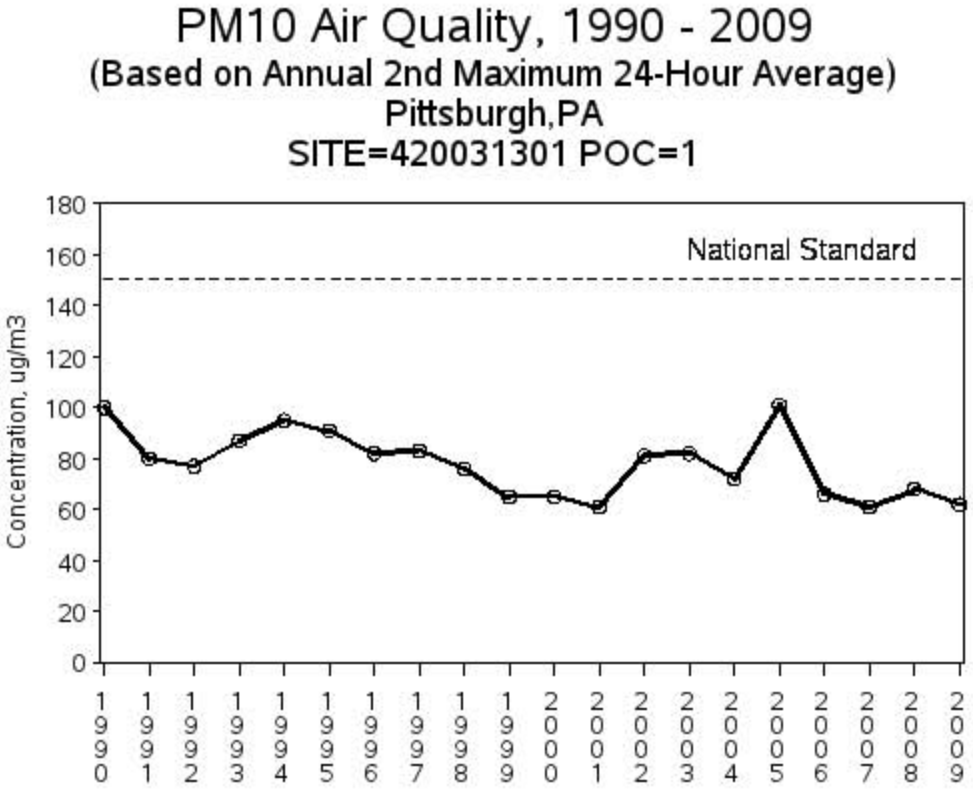
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Pittsburgh,PA
SITE=420031301 POC=1
National Standard
Concentration, ug/m3
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100
80
60
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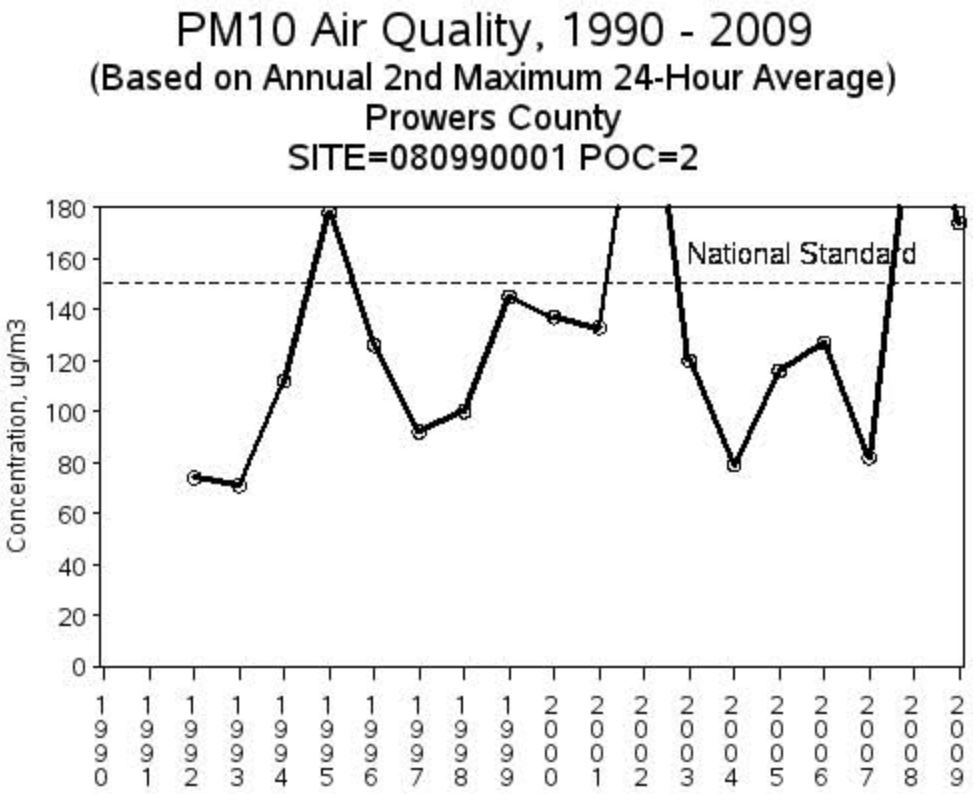
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Prowers County
SITE=080990001 POC=2
National Standard
Concentration, ug/m3
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40
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80
100
120
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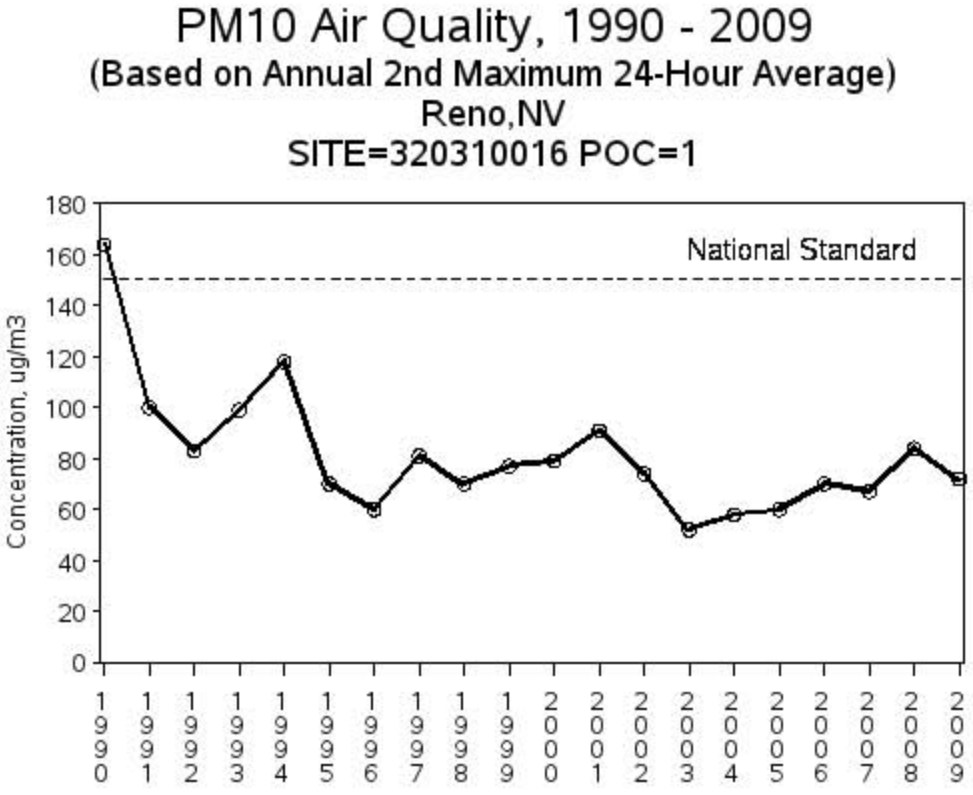
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Reno,NV
SITE=320310016 POC=1
National Standard
Concentration, ug/m3
0
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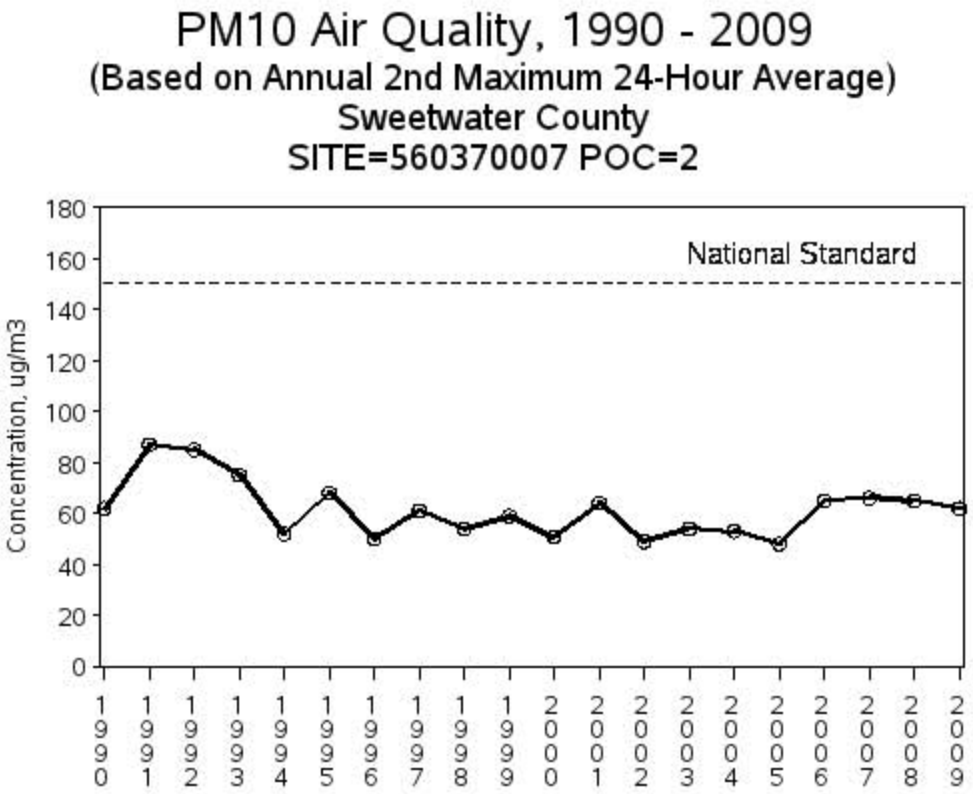
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Sweetwater County
SITE=560370007 POC=2
National Standard
Concentration, ug/m3
180
160
140
120
100
80
60
40
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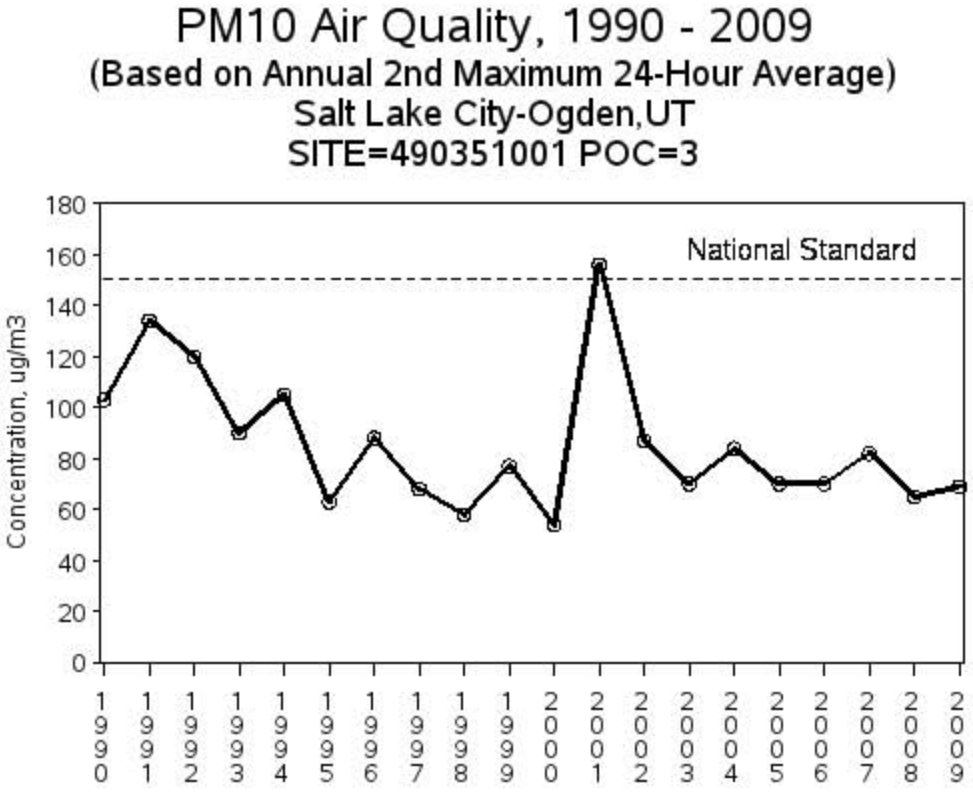
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Salt Lake City-Ogden,UT
SITE=490351001 POC=3
National Standard
Concentration, ug/m3
180
160
140
120
100
80
60
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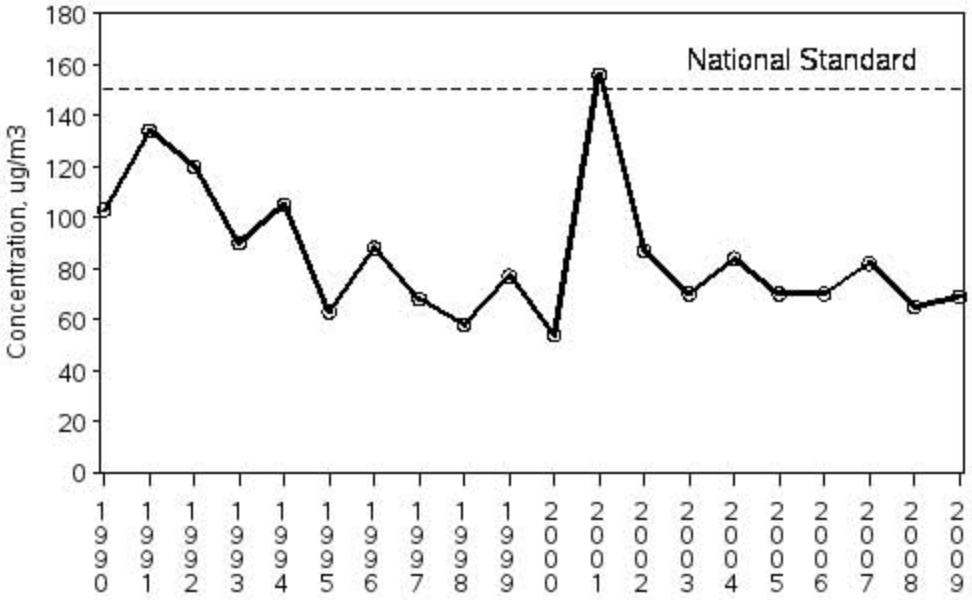
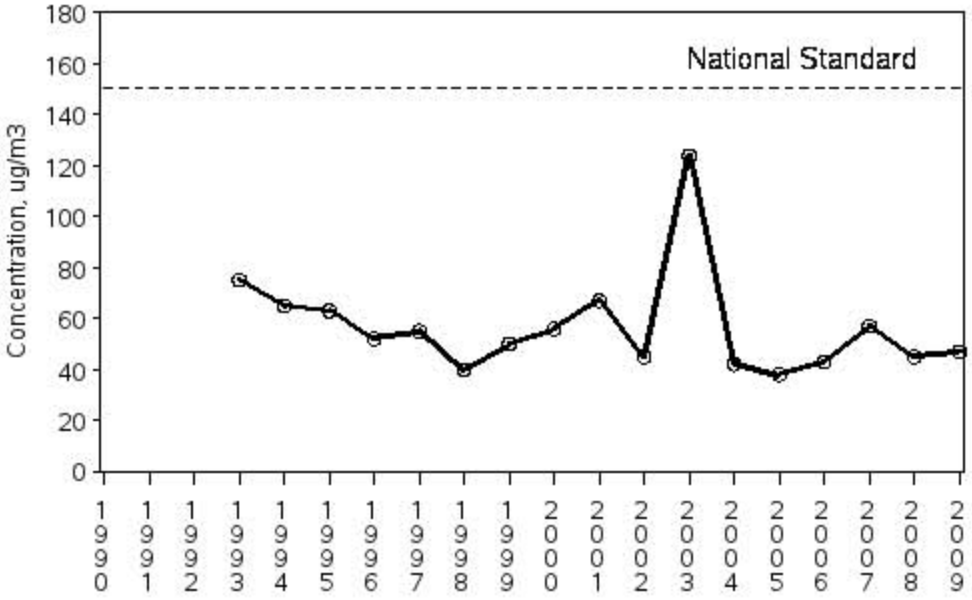
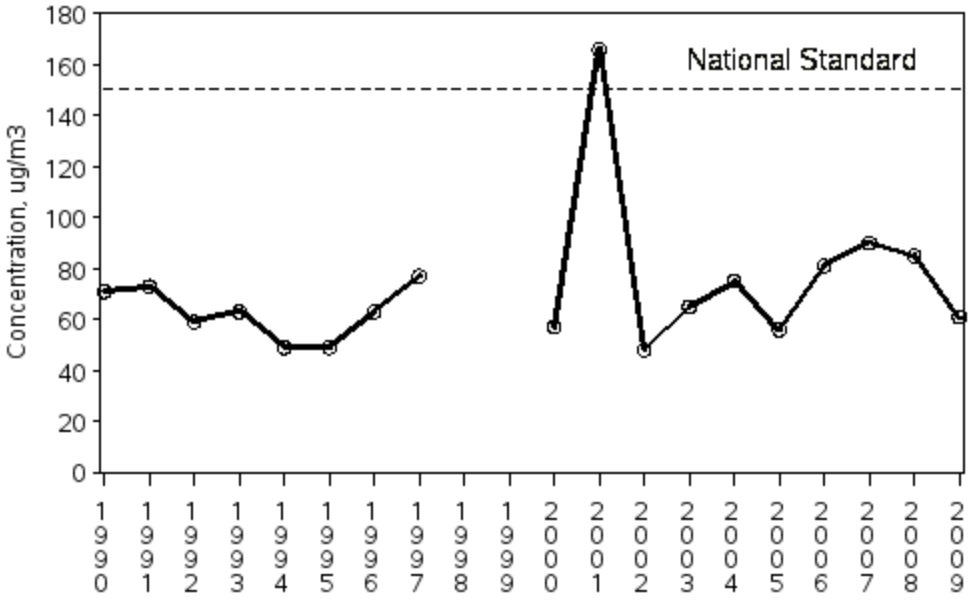
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Salt Lake City-Ogden,UT
SITE=490351001 POC=3



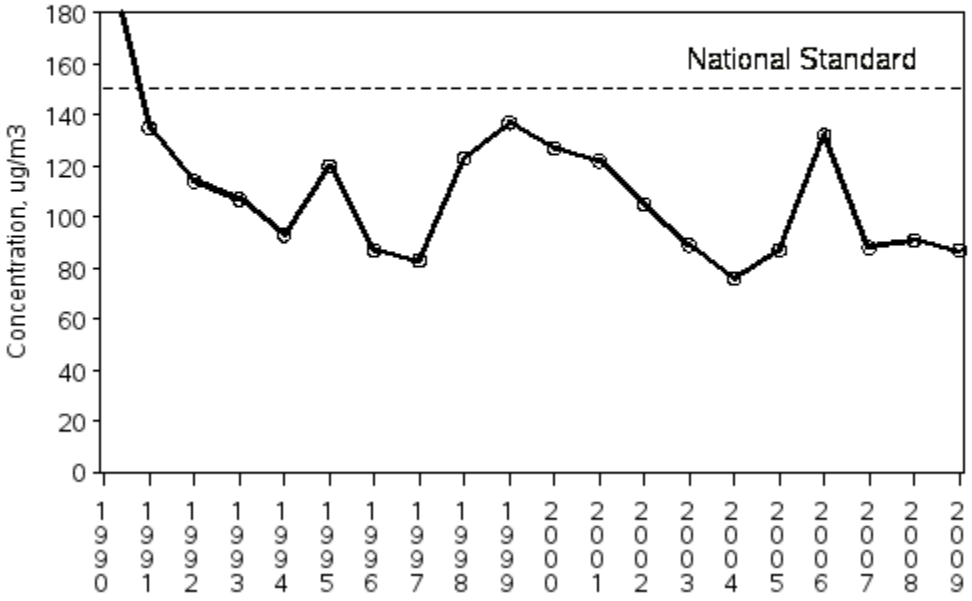
PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
San Diego,CA
SITE=060731002 POC=1

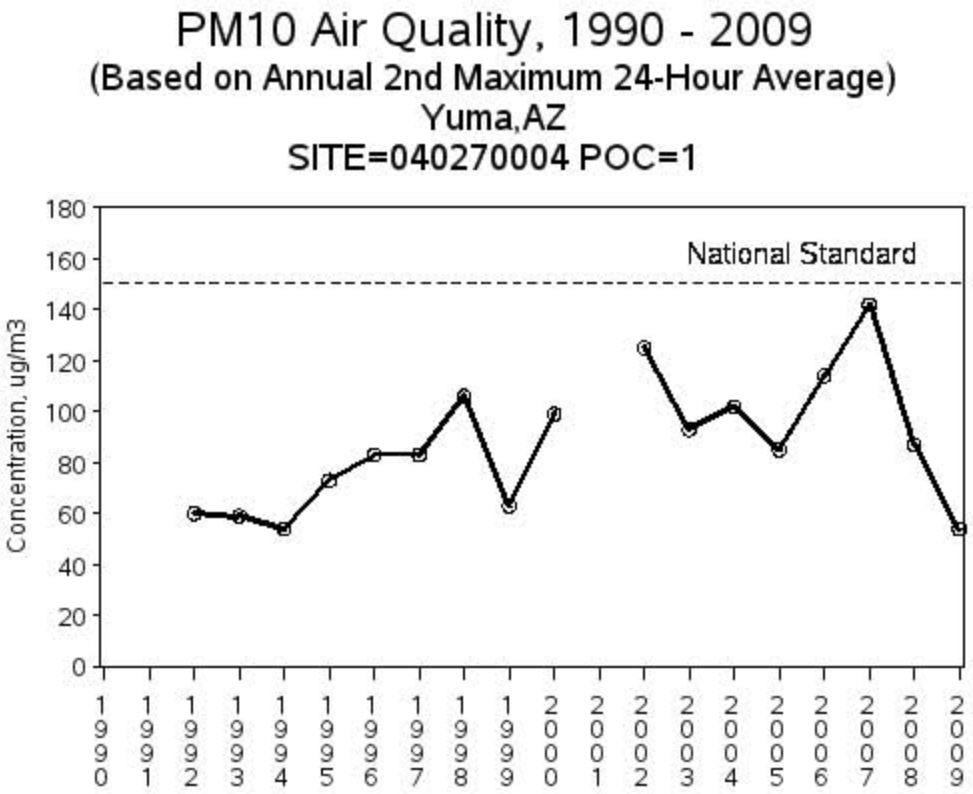


PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Tulsa,OK
SITE=401430110 POC=1



PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Visalia-Tulare-Porterville,CA
SITE=061072002 POC=2




PM10 Air Quality, 1990 - 2009
(Based on Annual 2nd Maximum 24-Hour Average)
Yuma,AZ
SITE=040270004 POC=1
National Standard
Concentration, ug/m3
180
160
140
120
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APPENDIX F

Collocated PM_{10} Monitoring Data

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
AK	20	18	1	1	44	None	4.2	47.0	9.0
AK	20	18	3	1	50	Unmarked Spikes, Partial Days, Extended Periods of Low Values			
AK	20	44	1	1	88	None	1.4	87.0	1.6
AK	20	44	2	1	86	None			
AK	20	1004	1	1	50	None	12.0	58.5	20.5
AK	20	1004	3	1	67	Negative Values, Partial days, High Winds, Wildfires			
AZ	3	11	1	1	46	None	1.4	47.0	3.0
AZ	3	11	2	1	48	None			
AZ	13	5100	1	1	43	None	2.1	44.5	4.8
AZ	13	5100	2	1	46	None			
AZ	13	7020	1	1	119	High Wind (Once)	2.1	120.5	1.8
AZ	13	7020	2	1	122	High Wind (Once)			
AZ	13	9997	1	1	59	6 Months Only	3.5	61.5	5.7
AZ	13	9997	3	1	64				
AZ	21	1	1	1	99	Unmarked Spike	12.0	107.5	11.2
AZ	21	1	3	1	116	High WInds (Four), High Impact, Unmarked Spikes,			
AZ	21	3008	1	1	91	None	75.0	144.0	52.1

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
AZ	21	3008	3	1	197	None	75.6	144.6	52.1
AZ	21	3011	1	1	165	High Wind (Two)--High Impact	56.1	160.3	35.0
AZ	21	3011	2	1	102	High Wind (Twice), Unmarked Spike			
AZ	21	3011	3	1	214	High Winds (Many)--Very High Impact, Many Unmarked Spikes--some close to High Wind Days			
AZ	21	7004	1	1	81	None	0.0	81.0	0.0
AZ	21	7004	2	1	81	High WInd (Once)			
AZ	23	4	1	1	116	Unmarked Spikes	17.4	128.7	13.5
AZ	23	4	3	1	141	Very Frequent and Severe Midnight Spikes, Many "Other" Codes			
AR	119	7	1	1	31	None	0.1	30.6	0.5
AR	119	7	2	1	31	None			
CA	29	10	1	1	112	Unmarked Spikes	22.8	95.4	23.9
CA	29	10	3	1	79	High Winds, Unmarked Spikes (Many), Partial Days (Many)			
CA	29	14	1	1	90	None	0.0	90.3	0.0

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
CA	29	14	2	1	90	None	0.0	90.2	0.0
CA	31	4	1	1	83	Unmarked Spike	5.2	86.4	6.1
CA	31	4	3	1	86	Unmarked Spike			
CA	31	4	4	1	83	None			
CA	31	4	7	1	94	High Wind, Unmarked Spikes, Partial Days			
CA	37	1103	2	1	62	None	8.5	68.0	12.5
CA	37	1103	3	1	74				
CA	37	4002	2	1	56	None	ND	56.0	ND
CA	37	4002	5	1	ND	Seven Months Missing, Partial Days (Many)			
CA	51	1	5	1	68	None	4.2	65.0	6.5
CA	51	1	6	1	62	None			
CA	65	2002	2	1	68	Unmarked Spike	8.1	77.3	10.5
CA	65	2002	3	1	83	High Winds, Unmarked Excursions, Extended Periods of Zero Vaues			
CA	65	2002	4	1	81	Unmarked Spike			
CA	65	5001	2	1	42	Unmarked Spike	21.2	57.0	37.2
CA	65	5001	3	1	72	Unmarked Spikes, Partial Days			
CA	65	8001	2	1	75	None	3.6	71.0	5.1
CA	65	8001	4	1	68	None			
CA	65	8001	5	1	70	Unmarked Spike			
CA	67	6	1	1	35	None	1.2	34.3	3.4
CA	67	6	2	1	35	None			

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
CA	67	6	3	1	33	None			
CA	67	4001	2	1	33	None	3.5	35.5	9.8
CA	67	4001	3	1	38	Partial Days			
CA	71	25	1	1	65	Nonte	0.7	64.5	1.1
CA	71	25	2	1	64	None			
CA	71	306	1	1	49	None	8.3	54.9	15.1
CA	71	306	2	1	61	High WInds, Unmarked Spikes (Many), Partial Days			
CA	71	1234	1	1	32	High Wind (Once), Very Low Values for Two Days	21.9	47.5	46.1
CA	71	1234	2	1	63	Unmarked Spikes, Low Values for Extended Periods			
CA	71	9004	2	1	63	None	4.5	59.8	7.6
CA	71	9004	3	1	57	None			
CO	51	4	2	1	83	None	2.1	84.5	2.5
CO	51	4	3	1	86	Unmarked Spike			
CO	99	1	2	1	90	High Winds (Twice), Unmarked Spikes (Many)	24.7	72.5	34.1
CO	99	2	2	1	55	High Winds (Twice), Unmarked Spikes (Many)			
ID	5	15	1	1	82	None, Stops in Sept			

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
ID	5	15	3	1	65	High Wind, Unmarked Spike, Negative Values Uncorrected	11.7	73.7	15.9
ID	77	11	1	1	46	None	1.2	47.0	2.6
ID	77	11	2	1	48	None			
KS	173	1012	1	1	42	Prescribed Fire, Partial Day	2.5	43.4	5.9
KS	173	1012	3	1	45	Prescribed Fire			
KS	177	13	1	1	50	None	16.9	62.1	27.2
KS	177	13	2	1	74	Unmarked Spike			
KS	209	21	1	1	42	None	5.1	45.4	11.2
KS	209	21	2	1	49	None			
MO	510	85	1	1	30	None	2.8	32.0	8.8
MO	510	85	2	1	34	None			
MT	29	7	1	1	40	None	2.1	38.5	5.5
MT	29	7	2	1	37	None			
NE	25	2	1	1	45	None	2.3	43.8	5.3
NE	25	2	2	1	42	None			
NE	55	54	1	1	52	None	1.6	51.2	3.2
NE	55	54	2	1	50	Very Few Samples			
NV	31	1005	1	1	65	Lab Issues	0.6	64.6	0.9
NV	31	1005	2	1	64	Lab Issues			
NM	1	26	1	1	73	Unmarked Spikes	1.2	74.3	1.6
NM	1	26	2	1	75	Unmarked Spike			
NM	1	26	3	1	75	Unmarked Spikes (Many), Partial Days			
NM	13	17	1	1	104	Unmarked Sikes			

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
NM	13	17	2	1	127	Flawed Clock, High Winds (Many), Unmarked Spikes (Many), Partial Days (Many), Negatives Uncorrected, Extended Periods of Low Values	16.1	115.7	13.9
OK	1	9009	1	1	29	None	3.5	31.1	11.4
OK	1	9009	2	1	34	None			
OK	15	9008	1	1	34	None	0.7	34.5	2.0
OK	15	9008	2	1	35	None			
OK	109	35	1	1	44	Unmarked Spike	0.7	43.5	1.6
OK	109	35	2	1	43	Unmarked Spike			
OK	143	110	1	1	61	Unmarked Spike	3.5	58.5	6.0
OK	143	110	2	1	56	Unmarked Spike			
OR	51	9	1	1	43		1.8	41.8	4.4
OR	51	9	2	1	41	None			
OR	51	246	7	1	35	None	1.3	33.7	3.8
OR	51	246	8	1	33	None			
TX	29	53	2	1	58	None	6.4	53.5	11.9
TX	29	53	4	1	49	None			
TX	141	57	1	1	67	None	3.0	69.1	4.4
TX	141	57	4	1	71	Unmarked Spikes			
UT	35	12	2	1	91	Wildfire, Unmarked Spikes (Three)	3.5	93.5	3.8
UT	35	12	3	1	96	None			
UT	49	2	2	1	75	Unmarked Spike	0.0	75.0	0.0

Table F-1 Collocated Data, West, Southwest, and Midwest States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD, %
UT	49	2	3	1	75	None	0.0	75.0	0.0
WA	63	16	3	1	40	None	ND	40.0	ND
WA	63	16	4	1	ND	Three Months Data, Skipped			
WY	5	875	1	1	52	None	1.4	51.0	2.8
WY	5	875	2	1	50	None			
WY	7	826	1	1	40	None	2.8	38.0	7.4
WY	7	826	2	1	36	None			
WY	7	8110	1	1	63	None	19.8	49.0	40.4
WY	7	8120	1	1	35	None			
WY	23	815	1	1	24	Non-Credible Low Values Part of the Year	0.7	23.5	3.0
WY	23	815	2	1	23	None			
WY	25	1	1	1	40	None	6.4	35.5	17.9
WY	25	1	2	1	31	None			

Table F-2 Collocated Data, Eastern States									
State	County Code	Site ID	POC	Unit	EPA 98Th	Notes	Standard Deviation	Average	RSD,%
DC	1	41	1	1	31.1	Gatherings, Noon Monitor Start Times	1.9	29.7	6.4
DC	1	41	2	1	28.4	Gatherings			
FL	86	1016	1	1	65.0	None	4.2	62.0	6.8
FL	86	1016	2	1	59.0	None			
GA	21	7	1	1	44.0	None	4.9	47.5	10.4
GA	21	7	2	1	51.0	None			
GA	121	32	1	1	40.0	None	1.4	39.0	3.6
GA	121	32	2	1	38.0	None			
MI	163	33	1	1	46.0	None	2.4	47.2	5.1
MI	163	33	3	1	45.7	None			
MI	163	33	9	1	50.0	None			
OH	61	40	1	1	31.0	None	7.3	36.2	20.2
OH	61	40	9	1	41.3	Partial Days			
OH	61	5001	1	1	40.0	None	0.7	39.5	1.8
OH	61	5001	2	1	39.0	None			
OH	99	5	1	1	42.0	None	2.8	40.0	7.1
OH	99	6	1	1	38.0	None			
PA	3	1301	1	1	62.0	None	7.1	57.0	12.4
PA	3	1301	2	1	52.0	None			

APPENDIX G

Monitoring Locations Shifting from Compliance to Violation with the Potentially Revised NAAQS

Appendix G. Monitoring Locations in Compliance That Shift to Violation

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
010730023	66	Yes			101	Southeast	AL	Jefferson	Birmingham-Hoover, AL
010736003	96	Yes	Yes		145	Southeast	AL	Jefferson	Birmingham-Hoover, AL
020200044	93	Yes	Yes	Yes	109	Not in PMRE	AK	Anchorage	Anchorage, AK
040011234	77	Yes	Yes		110	Southwest	AZ	Apache	
040031005	82	Yes	Yes		97	Southwest	AZ	Cochise	Sierra Vista-Douglas, AZ
040130019	87	Yes	Yes	Yes	117	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133002	87	Yes	Yes	Yes	133	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040133010	93	Yes	Yes	Yes	123	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040191009	68	Yes			99	Southwest	AZ	Pima	Tucson, AZ
060070002	72	Yes			143	Northwest	CA	Butte	Chico, CA
060190007	81	Yes	Yes		98	Southern Cal	CA	Fresno	Fresno, CA
060190008	77	Yes	Yes		107	Southern Cal	CA	Fresno	Fresno, CA
060195001	74	Yes			116	Southern Cal	CA	Fresno	Fresno, CA
060210003	73	Yes			121	Northwest	CA	Glenn	
060250004	149	Yes	Yes	Yes	149	Southern Cal	CA	Imperial	El Centro, CA
060311007	78	Yes	Yes		111	Southern Cal	CA	Kings	Hanford-Corcoran, CA
060371103	76	Yes	Yes		125	Southern Cal	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, C
060374004	88	Yes	Yes	Yes	123	Southern Cal	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana, C
060431001	67	Yes			135	Northwest	CA	Mariposa	
060452001	72	Yes			113	Northwest	CA	Mendocino	Ukiah, CA
060472510	66	Yes			75	Northwest	CA	Merced	Merced, CA
060510001	72	Yes			118	Northwest	CA	Mono	
060510007	78	Yes	Yes		120	Northwest	CA	Mono	
060650004	72	Yes			84	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060655001	81	Yes	Yes		149	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, CA

Appendix G. Monitoring Locations in Compliance That Shift to Violation

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
060658001	91	Yes	Yes	Yes	117	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060658005	118	Yes	Yes	Yes	142	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, CA
060670284	72	Yes			89	Northwest	CA	Sacramento	Sacramento--Arden-Arcade--Roseville,
060711234	71	Yes			144	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, CA
060714001	69	Yes			99	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, CA
060714003	67	Yes			97	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, CA
060719004	88	Yes	Yes	Yes	136	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, CA
060730077	70	Yes			95	Southern Cal	CA	San Diego	San Diego-Carlsbad-San Marcos, CA
060771002	69	Yes	Yes		104	Northwest	CA	San Joaquin	Stockton, CA
060792004	84	Yes	Yes		130	Southern Cal	CA	San Luis Obi	San Luis Obispo-Paso Robles, CA
060794003	95	Yes	Yes	Yes	146	Southern Cal	CA	San Luis Obi	San Luis Obispo-Paso Robles, CA
060852003	67	Yes			72	Northwest	CA	Santa Clara	San Jose-Sunnyvale-Santa Clara, CA
060870003	69	Yes			106	Northwest	CA	Santa Cruz	Santa Cruz-Watsonville, CA
060990005	76	Yes	Yes		111	Northwest	CA	Stanislaus	Modesto, CA
060990006	71	Yes			96	Northwest	CA	Stanislaus	Modesto, CA
061072002	89	Yes	Yes	Yes	103	Southern Cal	CA	Tulare	Visalia-Porterville, CA
080010006	73	Yes			107	Northwest	CO	Adams	Denver-Aurora, CO
080510004	90	Yes	Yes	Yes	108	Northwest	CO	Gunnison	
080770017	72	Yes			103	Northwest	CO	Mesa	Grand Junction, CO
080770018	75	Yes			130	Northwest	CO	Mesa	Grand Junction, CO
080770019	86	Yes	Yes	Yes	147	Northwest	CO	Mesa	Grand Junction, CO
081010012	76	Yes	Yes		120	Northwest	CO	Pueblo	Pueblo, CO
081070003	78	Yes	Yes		99	Northwest	CO	Routt	
081130004	66	Yes			130	Northwest	CO	San Miguel	
120470015	81	Yes	Yes		106	Southeast	FL	Hamilton	

Appendix G. Monitoring Locations in Compliance That Shift to Violation

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
120570066	67	Yes			91	Southeast	FL	Hillsborough	Tampa-St. Petersburg-Clearwater, FL
160270002	69	Yes			98	Northwest	ID	Canyon	Boise City-Nampa, ID
160770011	68	Yes			110	Northwest	ID	Power	Pocatello, ID
170311016	71	Yes			93	Industrial Mid	IL	Cook	Chicago-Naperville-Joliet, IL-IN-WI
171191007	76	Yes	Yes		110	Industrial Mid	IL	Madison	St. Louis, MO-IL
180630001	77	Yes	Yes		77	Industrial Mid	IN	Hendricks	Indianapolis-Carmel, IN
180890022	69	Yes			115	Industrial Mid	IN	Lake	Chicago-Naperville-Joliet, IL-IN-WI
190330018	82	Yes	Yes		104	Upper Midwe	IA	Cerro Gordo	Mason City, IA
191630017	94	Yes	Yes	Yes	113	Industrial Mid	IA	Scott	Davenport-Moline-Rock Island, IA-IL
201330002	66	Yes			120	Upper Midwe	KS	Neosho	
202090015	75	Yes			110	Upper Midwe	KS	Wyandotte	Kansas City, MO-KS
210190002	77	Yes	Yes		117	Industrial Mid	KY	Boyd	Huntington-Ashland, WV-KY-OH
221210001	76	Yes	Yes		89	Southeast	LA	West Baton R	Baton Rouge, LA
230030013	76	Yes	Yes		111	Northeast	ME	Aroostook	
230050015	69	Yes	Yes		122	Northeast	ME	Cumberland	Portland-South Portland-Biddeford, ME
290210005	72	Yes			86	Upper Midwe	MO	Buchanan	St. Joseph, MO-KS
290970003	68	Yes	Yes		106	Upper Midwe	MO	Jasper	Joplin, MO
295100088	81	Yes	Yes		110	Industrial Mid	MO	St. Louis City	St. Louis, MO-IL
295100093	97	Yes	Yes	Yes	126	Industrial Mid	MO	St. Louis City	St. Louis, MO-IL
300030019	86	Yes	Yes	Yes	120	Northwest	MT	Big Horn	
300030023	83	Yes	Yes		100	Northwest	MT	Big Horn	
300290009	78	Yes	Yes		106	Northwest	MT	Flathead	Kalispell, MT
300350101	80	Yes	Yes		97	Northwest	MT	Glacier	
300430019	75	Yes			90	Northwest	MT	Jefferson	Helena, MT
300830001	74	Yes			105	Northwest	MT	Richland	

Appendix G. Monitoring Locations in Compliance That Shift to Violation

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
300930005	75	Yes			124	Northwest	MT	Silver Bow	Butte-Silver Bow, MT
310250008	69	Yes			130	Upper Midwe	NE	Cass	Omaha-Council Bluffs, NE-IA
310250009	80	Yes	Yes		132	Upper Midwe	NE	Cass	Omaha-Council Bluffs, NE-IA
310550045	92	Yes	Yes	Yes	132	Upper Midwe	NE	Douglas	Omaha-Council Bluffs, NE-IA
320030020	68	Yes			131	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030539	68	Yes			110	Southwest	NV	Clark	Las Vegas-Paradise, NV
320030561	69	Yes			106	Southwest	NV	Clark	Las Vegas-Paradise, NV
320230015	69	Yes			69	Southern Cal	NV	Nye	Pahrump, NV
320310016	74	Yes			92	Northwest	NV	Washoe	Reno-Sparks, NV
320310022	97	Yes	Yes	Yes	130	Northwest	NV	Washoe	Reno-Sparks, NV
320310030	81	Yes	Yes		108	Northwest	NV	Washoe	Reno-Sparks, NV
340011006	72	Yes			93	Northeast	NJ	Atlantic	Atlantic City, NJ
340030004	71	Yes			86	Northeast	NJ	Bergen	New York-North NJ-LI, NY-NJ-PA
340070009	67	Yes			94	Northeast	NJ	Camden	Phila.-Camden-Wil,, PA-NJ-DE-MD
350010026	90	Yes	Yes	Yes	131	Southwest	NM	Bernalillo	Albuquerque, NM
350010029	92	Yes	Yes	Yes	143	Southwest	NM	Bernalillo	Albuquerque, NM
350311236	66	Yes			105	Southwest	NM	McKinley	Gallup, NM
350439004	86	Yes	Yes		139	Southwest	NM	Sandoval	Albuquerque, NM
350450006	73	Yes			116	Southwest	NM	San Juan	Farmington, NM
390350065	81	Yes	Yes		118	Industrial Mid	OH	Cuyahoga	Cleveland-Elyria-Mentor, OH
390490024	70	Yes			123	Industrial Mid	OH	Franklin	Columbus, OH
400719010	76	Yes	Yes		91	Southeast	OK	Kay	Ponca City, OK
410350004	74	Yes			88	Northwest	OR	Klamath	Klamath Falls, OR
420030064	71	Yes			87	Industrial Mid	PA	Allegheny	Pittsburgh, PA
420033006	68	Yes	Yes		99	Industrial Mid	PA	Allegheny	Pittsburgh, PA
420037004	86	Yes	Yes	Yes	112	Industrial Mid	PA	Allegheny	Pittsburgh, PA

Appendix G. Monitoring Locations in Compliance That Shift to Violation

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
460290002	67	Yes			86	Upper Midwe	SD	Codington	Watertown, SD
461030013	72	Yes			88	Upper Midwe	SD	Pennington	Rapid City, SD
461030020	95	Yes	Yes	Yes	123	Upper Midwe	SD	Pennington	Rapid City, SD
471730107	73	Yes			104	Southeast	TN	Union	Knoxville, TN
481410002	74	Yes			107	Southwest	TX	El Paso	El Paso, TX
481410044	88	Yes	Yes	Yes	136	Southwest	TX	El Paso	El Paso, TX
490110004	71	Yes			103	Northwest	UT	Davis	Ogden-Clearfield, UT
490350003	75	Yes			110	Northwest	UT	Salt Lake	Salt Lake City, UT
490353006	88	Yes	Yes	Yes	138	Northwest	UT	Salt Lake	Salt Lake City, UT
490490002	79	Yes	Yes		146	Northwest	UT	Utah	Provo-Orem, UT
490570002	76	Yes	Yes		118	Northwest	UT	Weber	Ogden-Clearfield, UT
510690012	72	Yes			88	Northeast	VA	Frederick	Winchester, VA-WV
560050808	82	Yes	Yes		139	Northwest	WY	Campbell	Gillette, WY
560050869	91	Yes	Yes	Yes	131	Northwest	WY	Campbell	Gillette, WY
560050870	114	Yes	Yes	Yes	144	Northwest	WY	Campbell	Gillette, WY
560050874	99	Yes	Yes	Yes	142	Northwest	WY	Campbell	Gillette, WY
560050875	72	Yes			117	Northwest	WY	Campbell	Gillette, WY
560050881	68	Yes	Yes		93	Northwest	WY	Campbell	Gillette, WY
560050885	69	Yes	Yes		116	Northwest	WY	Campbell	Gillette, WY
560050891	79	Yes	Yes		119	Northwest	WY	Campbell	Gillette, WY
560050899	69	Yes	Yes		107	Northwest	WY	Campbell	Gillette, WY
560050901	79	Yes	Yes		143	Northwest	WY	Campbell	Gillette, WY
560050907	73	Yes			116	Northwest	WY	Campbell	Gillette, WY
560050910	89	Yes	Yes	Yes	100	Northwest	WY	Campbell	Gillette, WY
560050916	91	Yes	Yes	Yes	123	Northwest	WY	Campbell	Gillette, WY

Appendix G. Monitoring Locations in Compliance That Shift to Violation

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
560050917	99	Yes	Yes	Yes	143	Northwest	WY	Campbell	Gillette, WY
560051899	71	Yes			91	Northwest	WY	Campbell	Gillette, WY
560051915	66	Yes			96	Northwest	WY	Campbell	Gillette, WY
560051917	77	Yes	Yes		93	Northwest	WY	Campbell	Gillette, WY
560090850	81	Yes	Yes		110	Northwest	WY	Converse	
560230800	73	Yes			139	Northwest	WY	Lincoln	
560350098	69	Yes			95	Northwest	WY	Sublette	
560370848	97	Yes	Yes	Yes	116	Northwest	WY	Sweetwater	Rock Springs, WY
560370860	67	Yes			150	Northwest	WY	Sweetwater	Rock Springs, WY
560370868	70	Yes			148	Northwest	WY	Sweetwater	Rock Springs, WY
720330004	70	Yes			107	Not in PMRE	PR	Catano	San Juan-Caguas-Guaynabo, PR
720570008	68	Yes			96	Not in PMRE	PR	Guayama	Guayama, PR
720610005	74	Yes			106	Not in PMRE	PR	Guaynabo	San Juan-Caguas-Guaynabo, PR
721130004	70	Yes			80	Not in PMRE	PR	Ponce	Ponce, PR
721270003	75	Yes			103	Not in PMRE	PR	San Juan	San Juan-Caguas-Guaynabo, PR
721270010	75	Yes			86	Not in PMRE	PR	San Juan	San Juan-Caguas-Guaynabo, PR
780100008	73	Yes			124	Not in PMRE	VI	St Croix	
780100012	105	Yes	Yes	Yes	148	Not in PMRE	VI	St Croix	
780300007	89	Yes	Yes	Yes	119	Not in PMRE	VI	St Thomas	
780300010	88	Yes	Yes	Yes	137	Not in PMRE	VI	St Thomas	

APPENDIX H

Monitoring Locations Shifting from Violation to Compliance with the Potentially Revised NAAQS

Appendix H. Monitoring Locations in Violation with Existing Standard and Shifting to Compliance										
Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Complete?	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
010736004	111	Yes	Yes	Yes	yes	167	Southeast	AL	Jefferson	Birmingham-Hoover, AL
040071001	98	Yes	Yes	Yes	yes	194	Southwest	AZ	Gila	Payson, AZ
040134003	112	Yes	Yes	Yes	yes	171	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134004	93	Yes	Yes	Yes	yes	220	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134006	106	Yes	Yes	Yes	yes	195	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134009	148	Yes	Yes	Yes	yes	247	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134010	71	Yes			yes	227	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134011	110	Yes	Yes	Yes	yes	203	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040134014	80	Yes	Yes			272	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137020	98	Yes	Yes	Yes	yes	238	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137022	129	Yes	Yes	Yes	yes	210	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040137024	120	Yes	Yes	Yes	yes	176	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040138006	120	Yes	Yes	Yes	yes	213	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040139812	115	Yes	Yes	Yes	yes	161	Southwest	AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ
040151011	108	Yes	Yes	Yes		195	Southwest	AZ	Mohave	Lake Havasu City-Kingman, AZ
040190020	100	Yes	Yes	Yes	yes	208	Southwest	AZ	Pima	Tucson, AZ
040210001	114	Yes	Yes	Yes	yes	274	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213004	76	Yes	Yes		yes	189	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213008	215	Yes	Yes	Yes	yes	482	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213009	190	Yes	Yes	Yes	yes	521	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213010	191	Yes	Yes	Yes	yes	520	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213011	187	Yes	Yes	Yes	yes	887	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213013	406	Yes	Yes	Yes	yes	653	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040213014	106	Yes	Yes	Yes		153	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ
040217004	148	Yes	Yes	Yes	yes	345	Southwest	AZ	Pinal	Phoenix-Mesa-Scottsdale, AZ

Appendix H. Monitoring Locations in Violation with Existing Standard and Shifting to Compliance

Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Complete?	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
040230004	156	Yes	Yes	Yes	yes	217	Southwest	AZ	Santa Cruz	Nogales, AZ
040270004	133	Yes	Yes	Yes	yes	306	Southwest	AZ	Yuma	Yuma, AZ
040278011	291	Yes	Yes	Yes		291	Southwest	AZ	Yuma	Yuma, AZ
060250005	144	Yes	Yes	Yes	yes	282	Southwest	CA	Imperial	El Centro, CA
060250007	186	Yes	Yes	Yes	yes	291	Southern Cal	CA	Imperial	El Centro, CA
060251003	114	Yes	Yes	Yes	yes	243	Southern Cal	CA	Imperial	El Centro, CA
060254003	128	Yes	Yes	Yes	yes	226	Southern Cal	CA	Imperial	El Centro, CA
060254004	108	Yes	Yes	Yes	yes	202	Southern Cal	CA	Imperial	El Centro, CA
060270021	75	Yes			yes	309	Southern Cal	CA	Inyo	Bishop, CA
060270022	150	Yes	Yes	Yes	yes	449	Southern Cal	CA	Inyo	Bishop, CA
060270024	96	Yes	Yes	Yes	yes	389	Southern Cal	CA	Inyo	Bishop, CA
060270025	87	Yes	Yes	Yes	yes	198	Southern Cal	CA	Inyo	Bishop, CA
060270028	95	Yes	Yes	Yes		395	Southern Cal	CA	Inyo	Bishop, CA
060270029	116	Yes	Yes	Yes		416	Southern Cal	CA	Inyo	Bishop, CA
060271003	171	Yes	Yes	Yes	yes	320	Southern Cal	CA	Inyo	Bishop, CA
060290010	111	Yes	Yes	Yes	yes	267	Southern Cal	CA	Kern	Bakersfield, CA
060290011	75	Yes			yes	154	Southern Cal	CA	Kern	Bakersfield, CA
060290014	106	Yes	Yes	Yes	yes	256	Southern Cal	CA	Kern	Bakersfield, CA
060290232	103	Yes	Yes	Yes	yes	224	Southern Cal	CA	Kern	Bakersfield, CA
060310004	100	Yes	Yes	Yes	yes	207	Southern Cal	CA	Kings	Hanford-Corcoran, CA
060310500	103	Yes	Yes	Yes	yes	286	Southern Cal	CA	Kings	Hanford-Corcoran, CA
060311004	141	Yes	Yes	Yes	yes	229	Southern Cal	CA	Kings	Hanford-Corcoran, CA
060370002	82	Yes	Yes			165	Southern Cal	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana
060376012	77	Yes	Yes		yes	167	Southern Cal	CA	Los Angeles	Los Angeles-Long Beach-Santa Ana
060510011	1085	Yes	Yes	Yes		2736	Northwest	CA	Mono	

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Sie	3-year average 98th per centile, 2007-2009	Exceeds 65 ug/M3, 98th Percentile	Exceeds 75 ug/M3, 98th Percentile	Exceeds 85 ug/M3, 98th Percentile	Complete?	Concentration-based expected exceedance design value, 2007-2009	PM Region	State	County	CBSA
060650003	82	Yes	Yes		yes	332	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, C
060651999	208	Yes	Yes	Yes	yes	290	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, C
060652002	109	Yes	Yes	Yes	yes	179	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, C
060656001	454	Yes	Yes	Yes		1212	Southern Cal	CA	Riverside	Riverside-San Bernardino-Ontario, C
060710001	75	Yes			yes	202	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, C
060710025	85	Yes	Yes		yes	275	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, C
060710306	83	Yes	Yes		yes	285	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, C
060712002	101	Yes	Yes	Yes	yes	276	Southern Cal	CA	San Bernardi	Riverside-San Bernardino-Ontario, C
060731014	98	Yes	Yes	Yes	yes	170	Southern Cal	CA	San Diego	San Diego-Carlsbad-San Marcos, C
060732007	134	Yes	Yes	Yes	yes	394	Southern Cal	CA	San Diego	San Diego-Carlsbad-San Marcos, C
061050002	127	Yes	Yes	Yes	yes	301	Northwest	CA	Trinity	
061113001	69	Yes			yes	245	Southern Cal	CA	Ventura	Oxnard-Thousand Oaks-Ventura, C
061131003	74	Yes			yes	181	Northwest	CA	Yolo	Sacramento--Arden-Arcade--Rosevil
080030003	71	Yes			yes	157	Northwest	CO	Alamosa	
080450005	85	Yes	Yes		yes	210	Northwest	CO	Garfield	
080990001	80	Yes	Yes		yes	174	Upper Midwe	CO	Prowers	
181830001	98	Yes	Yes	Yes		151	Industrial Mic	IN	Whitley	Fort Wayne, IN
181830002	102	Yes	Yes	Yes		238	Industrial Mic	IN	Whitley	Fort Wayne, IN
300030011	129	Yes	Yes	Yes		155	Northwest	MT	Big Horn	
300430022	102	Yes	Yes	Yes		161	Northwest	MT	Jefferson	Helena, MT
320230012	73	Yes				173	Southern Cal	NV	Nye	Pahrump, NV
320230014	125	Yes	Yes	Yes	yes	283	Southern Cal	NV	Nye	Pahrump, NV
350130016	146	Yes	Yes	Yes	yes	276	Southwest	NM	Dona Ana	Las Cruces, NM
350130017	144	Yes	Yes	Yes	yes	283	Southwest	NM	Dona Ana	Las Cruces, NM
350130019	122	Yes	Yes	Yes	yes	230	Southwest	NM	Dona Ana	Las Cruces, NM

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350130020	173	Yes	Yes	Yes	yes	358	Southwest	NM	Dona Ana	Las Cruces, NM
350130021	136	Yes	Yes	Yes		271	Southwest	NM	Dona Ana	Las Cruces, NM
350130024	69	Yes			yes	168	Southwest	NM	Dona Ana	Las Cruces, NM
350290003	157	Yes	Yes	Yes	yes	407	Southwest	NM	Luna	Deming, NM
391750008	167	Yes	Yes	Yes		167	Industrial Mid	OH	Wyandot	
401430110	79	Yes	Yes		yes	225	Southeast	OK	Tulsa	Tulsa, OK
481410037	81	Yes	Yes		yes	154	Southwest	TX	El Paso	El Paso, TX
481410057	90	Yes	Yes	Yes	yes	168	Southwest	TX	El Paso	El Paso, TX
481419018	115	Yes	Yes	Yes		218	Southwest	TX	El Paso	El Paso, TX
482011035	126	Yes	Yes	Yes	yes	190	Southeast	TX	Harris	Houston-Sugar Land-Baytown, TX
490350012	102	Yes	Yes	Yes	yes	174	Northwest	UT	Salt Lake	Salt Lake City, UT
490494001	91	Yes	Yes	Yes	yes	177	Northwest	UT	Utah	Provo-Orem, UT
530650004	103	Yes	Yes	Yes	yes	200	Northwest	WA	Stevens	
560010800	103	Yes	Yes	Yes	yes	190	Northwest	WY	Albany	Laramie, WY
560090851	93	Yes	Yes	Yes	yes	154	Northwest	WY	Converse	
560310805	106	Yes	Yes	Yes		174	Northwest	WY	Platte	
560371868	87	Yes	Yes	Yes		176	Northwest	WY	Sweetwater	Rock Springs, WY