



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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Ref: 8P-AR

AUG 18 2008

The Honorable Brian Schweitzer
Governor of Montana
225 North Roberts
Helena, MT 59620-0801

Dear Governor Schweitzer:

Thank you for your recommendations on the status of fine particle pollution throughout Montana.

We have reviewed the December 11, 2007 letter from you submitting Montana's recommendations on air quality designations for the 2006 24-Hour PM_{2.5} standards. We have also reviewed the technical information submitted to support Montana's recommendations. We appreciate the effort your State has made to develop this supporting information. Consistent with the Clean Air Act, this letter is to inform you that the Environmental Protection Agency (EPA) intends to make modifications to Montana's recommended designations.

In your letter, Missoula County and Ravalli County were recommended for a PM_{2.5} nonattainment designation based on data from 2004-2006. EPA is making final decisions on the designations based on the most recent three years of data or 2005-2007. In this regard, we have enclosed information on the Montana Department of Environmental Quality exceptional events "flags" for wildfire impacts with EPA's concurrence. As a result, neither Missoula County nor Ravalli County had a violation of the PM_{2.5} standard for 2005-2007. Therefore, we are proposing to designate these areas as attainment.

We also acknowledge your request that we consider a one-year delay of our decision on nonattainment based on insufficient information for the Libby area in Lincoln County. In previous designations, insufficient information was considered as either missing or incomplete monitoring data. In the case of Libby, there is complete monitoring data that indicates the area is violating the PM_{2.5} standard for 2005-2007. Thus we are unable to provide a one-year delay. However, if Montana can provide complete, quality-assured certified data for 2008, showing no violation of the standard, EPA would reconsider the nonattainment designation for Libby. This data must be submitted prior to the effective date of the designations, which is 90 days after the Federal Register publication of the Administrator's decision. In addition, the Libby area can be redesignated to attainment if the 2007-2009 air quality monitoring data shows the area is attaining the 24-hour PM_{2.5} standard.

As you know, EPA has been very supportive and involved in the Libby woodstove changeout program. We recognize that air quality improvements have resulted. EPA remains committed to providing any available assistance so that Libby can attain the PM_{2.5} standard.

We have enclosed a detailed description of the Libby area where EPA intends to modify your state recommendations, and the basis for such modification. The Director of the Montana Department of Environmental Quality, Mr. Richard Opper, also will receive a copy of this letter and the enclosures. Should you have additional information that you wish to be considered by EPA in this process, please provide it to us by October 20, 2008.

Fine-particle pollution represents one of the most significant barriers to clean air facing our nation today. Health studies link these tiny particles – about 1/30th the diameter of a human hair – to serious human health problems including aggravated asthma, increased respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and even premature death in people with heart and lung disease. Fine particle pollution can remain suspended in the air for long periods of time and create public health problems far away from emission sources. Reducing levels of fine-particle (PM_{2.5}) pollution is an important part of our nation's commitment to clean, healthy air.

You should also be aware that EPA is opening a 30-day public comment period on our intended designation decisions. We intend to make final designation decisions for the 2006 24-Hour PM_{2.5} standards by December 18, 2008. If you have any questions, please do not hesitate to contact me, or your staff may call Catherine Roberts, Particulate Matter Program Coordinator at 303-312-6025. We look forward to a continued dialogue with you as we work together to implement the PM_{2.5} standards.

Sincerely,



Carol Rushin
Acting Regional Administrator

cc: Richard Opper, Director, Montana Department of Environmental Quality
Judy Hanson, Administrator, Permitting and Compliance Division
Dave Klemp, Chief, Montana Air Resources Management Bureau

Enclosures (2)



Attachment 1

Montana Area Designations For the 24-Hour Fine Particle National Ambient Air Quality Standard

The table below identifies the counties in Montana that EPA intends to designate as not attaining the 2006 24-hour fine particle (PM_{2.5}) standard.¹ A county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to the violation of the standard.

Area	State-Recommended Nonattainment Counties	EPA's Intended nonattainment County
Libby	Lincoln County- no state recommendation	Lincoln County (partial includes Libby only)
Missoula and Ravalli	Missoula County Ravalli County	Attainment based on 2005-2007 design value

EPA intends to designate the remaining counties in the state as “attainment/unclassifiable.” The two counties of Ravalli and Missoula were recommended by the Governor based on data for 2004-2006. EPA is basing our modifications to designations on 2005-2007 data. Neither Missoula nor Ravalli counties have a violation of the standard for this time period. A county is designated as unclassifiable when it has air quality monitoring data for the 2005-2007 time period that is not complete and cannot be used for determining compliance with the standard.

EPA Technical Analysis for Libby, Lincoln County

Discussion

Pursuant to section 107(d) of the Clean Air Act, EPA must designate as nonattainment those areas that violate the NAAQS and those areas that contribute to violations. This technical analysis for Lincoln County identifies the area with monitors that violate the 24-hour PM_{2.5} standard and evaluates the counties that potentially contribute to fine particle concentrations in the area. EPA has evaluated these counties based on the weight of evidence of the following nine factors recommended in EPA guidance and any other relevant information:

- pollutant emissions
- air quality data
- population density and degree of urbanization

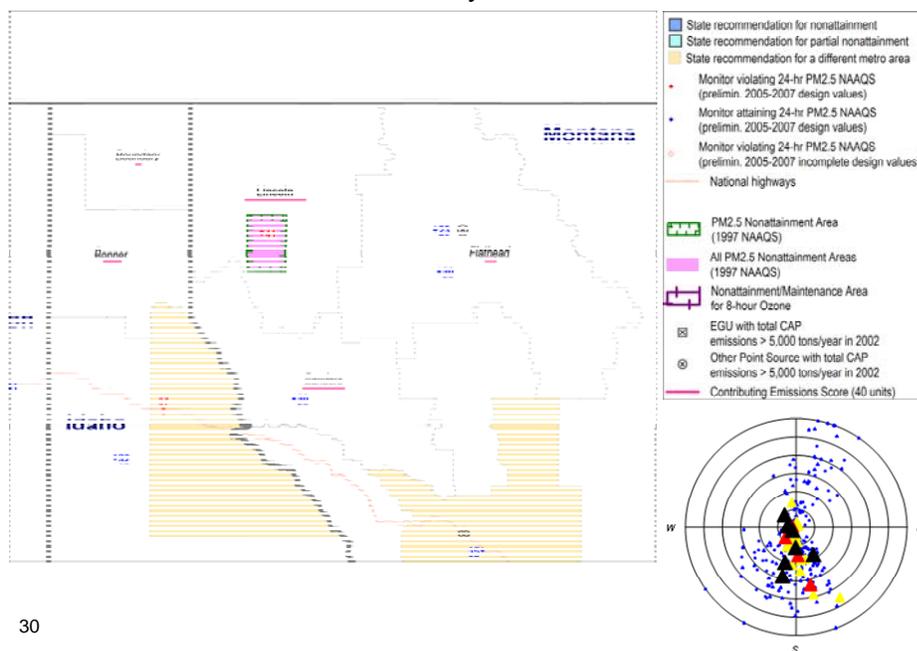
¹ EPA designated nonattainment areas for the 1997 fine particle standards in 2005. In 2006, the 24-hour PM_{2.5} standard was revised from 65 micrograms per cubic meter (average of 98th percentile values for 3 consecutive years) to 35 micrograms per cubic meter; the level of the annual standard for PM_{2.5} remained unchanged at 15 micrograms per cubic meter (average of annual averages for 3 consecutive years).

- traffic and commuting patterns
- growth
- meteorology
- geography and topography
- jurisdictional boundaries
- level of control of emissions sources

Figure 1 below is a map of the counties in the area and other relevant information such as the locations and design values of air quality monitors, and the metropolitan area boundary. No counties were recommended as nonattainment by the State.

Figure 1

Libby, MT



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For this area, EPA previously established PM_{2.5} nonattainment boundaries for the 1997 PM_{2.5} National Ambient Air Quality Standard (NAAQS) that included the partial county of Lincoln located in Montana.

On December 18, 2007 Montana recommended that all counties except Missoula and Ravalli be designated as “attainment” for the 2006 24-hour PM_{2.5} standard based on air quality data from 2004-2006. These data are from Federal reference method (FRM) monitors located in the state.

Air quality monitoring data on the composition of fine particle mass are available from the EPA Chemical Speciation Network and the IMPROVE monitoring network. Analysis of these data indicates that the days with the highest fine particle concentrations occur predominantly in the winter. On high days, carbonaceous PM_{2.5} makes up 92% of the total PM_{2.5} mass, indicating that wood burning emissions are a key source.

Based on EPA's 9-factor analysis described below, EPA has concluded that same area in a part of Lincoln County, Montana that was previously designated nonattainment for the 1997 PM_{2.5} standard should be designated as nonattainment for the 2006 24-hour PM_{2.5} air-quality standard. Our conclusion is based upon currently available information. EPA's recommendation is listed in the table below.

Libby/Lincoln County	State-Recommended Nonattainment Counties	EPA-Recommended Nonattainment Counties
Montana	None	Lincoln (partial)

For the Libby area, located in Lincoln County, EPA established nonattainment area boundaries for the 1997 PM_{2.5} NAAQS that was a partial county. This boundary is described in 40 CFR 81.327 under "Montana – PM2.5" and reads as follows:

"Libby MT: Lincoln County (part) The area bounded by lines from Universal Transverse Mercator Zone 11(North American Datum 1983) coordinates beginning at 600,000mE, 5,370,000mN east to 620,000mE, 5,370,000mN south to 620,000mE, 5,340,000mN west to 600,000mE, 5,340,000mN north to 600,000mE, 5,370,000mN"

Adjacent counties that were also considered include Boundary and Bonner County, Idaho to the west, Sanders County, Montana to the South and Flathead County, Montana to the east. Federal reference method (FRM) air-quality monitors, located in Libby, that had recorded violations of the 1997 PM_{2.5} annual air-quality standard was based on 2001-2003 data. There were no monitors in the adjacent counties that recorded violations of the annual PM_{2.5} standard. However, we note that the absence of a violating monitor does not automatically disqualify a county from a PM_{2.5} nonattainment designation.

Libby has monitors that, based on both 2004-2006 and 2005-2007 FRM data in the EPA Air Quality System (AQS), violate the 2006 24-hour PM_{2.5} NAAQS. Therefore, this area must be designated nonattainment and EPA is recommending that the same boundaries that were established for implementing the 1997 PM_{2.5} NAAQS are also appropriate for implementing the 2006 24-hour PM_{2.5} NAAQS.

The State of Montana did not recommend that the Libby area in Lincoln County be designated as nonattainment for the 2006 24-hour PM_{2.5} standard based on the most recent three years of air quality data that was available in December 2007. The Governor's letter of December 18, 2007 requested that EPA delay the designation until December of 2009 based on insufficient information. However, in previous designations insufficient information was considered to be missing or incomplete monitoring data. For the Libby area, EPA has concluded there is sufficient information based on data from the Federal reference method (FRM) monitors within the State to determine that the area is violating the standard. Thus, EPA is recommending nonattainment for the Libby area and is unable to grant the Governors request for a one year delay. Since the State did not provide a 9-factor analysis for the Libby area, EPA does not have any specific technical information to evaluate from the State. EPA's 9-factor analysis follows below.

Factor 1: Emissions data

For this factor, EPA evaluated County level emission data of the following PM_{2.5} components and precursor pollutants: “PM_{2.5} emissions total,” “PM_{2.5} emissions carbon,” “PM_{2.5} emissions other,” “SO₂,” “NO_x,” “VOCs,” and “NH₃.” “PM_{2.5} emissions total” represents direct emissions of PM_{2.5} and includes: “PM_{2.5} emissions carbon,” “PM_{2.5} emissions other,” primary sulfate (SO₄), and primary nitrate. (Although primary sulfate and primary nitrate, which are emitted directly from stacks rather than forming in atmospheric reactions with SO₂ and NO_x, are part of “PM_{2.5} emissions total,” they are not shown in Table 1 as separate items). “PM_{2.5} emissions carbon” represents the sum of organic carbon (OC) and elemental carbon (EC) emissions, and “PM_{2.5} emissions other” represents other inorganic particles (crustal). Emissions of SO₂ and NO_x, which are precursors of the secondary PM_{2.5} components sulfate and nitrate, are also considered. VOCs (volatile organic compounds) and NH₃ (ammonia) are also potential PM_{2.5} precursors and are included for consideration.

Emissions data were derived from the 2005 National Emissions Inventory (NEI), version 1. See http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html.

EPA also considered the Contributing Emissions Score (CES) for each county. The CES is a metric that takes into consideration emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of counties in and near an area. Note that this metric is not the exclusive way for consideration of data for these factors. A summary of the CES is included in attachment 2, and a more detailed description can be found at http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html#C.

Table 1 below shows emissions of PM_{2.5} and precursor pollutants components (given in tons per year) and the CES for violating and potentially contributing counties in the Lincoln County area. Counties that are part of the nonattainment area for the 1997 PM_{2.5} NAAQS are shown in boldface. Counties are listed in descending order by CES.

Table 1. PM_{2.5} Related Emissions and Contributing Emission Scores

County	State Recommended Non-attainment?	CES	PM _{2.5} emissions total (tpy)	PM _{2.5} emissions carbon (tpy)	PM _{2.5} emissions other (tpy)	SO ₂ (tpy)	NO _x (tpy)	VOCs (tpy)	NH ₃ (tpy)
Lincoln, MT	No	100	2738	1708	1029	535	3395	7681	506
Sanders, MT	No	68	3620	2278	1341	391	968	9852	874
Bonner, ID	No	28	1234	608	626	357	4478	6831	328
Flathead, MT	No	16	2789	1527	1262	1291	5880	9083	877
Boundary, ID	No	7	996	507	488	113	1117	3179	376

CES score as provided by EPA Office of Air Quality Planning and Standards (hereafter, OAQPS).

Note: Emission data are from EPA’s 2005 National Emission Inventory (NEI) and are provided by EPA-OAQPS.

Based on emissions levels and CES values, Lincoln County is a candidate for a 24-hour PM_{2.5} nonattainment designation in addition to Sanders County and Flathead County and, therefore, requires further analysis. Since the counties of Bonner, Idaho and Boundary, Idaho have low CES values and are both topographically and meteorologically isolated from the remote area of Libby in Lincoln County (see Factors 6 and 7 for further information), they are no longer considered to be candidates for a nonattainment designation and, therefore, require no further analysis.

Factor 2: Air quality data

This factor considers the 24-hour PM_{2.5} design values (in µg/m³) for air-quality monitors in Lincoln, Sanders and Flathead counties based on data for the 2004-2006 and 2005-2007 period. A monitor’s design value indicates whether that monitor attains a specified air-quality standard. The 24-hour PM_{2.5} standard is met when the 3-year average of a monitor’s 98th percentile values are 35µg/m³ or less. A design value is only valid if minimum data completeness criteria are met.

The 24-hour PM_{2.5} design values for the following counties are shown in Table 2.

Table 2. Air Quality Data

County	State Recommended Nonattainment?	24-hour PM _{2.5} Design Values, 2004-2006 (µg/m ³)	24-hour PM _{2.5} Design Values, 2005-2007 (µg/m ³)
Lincoln, MT	No	43	41
Sanders, MT	No	20	20
Flathead, MT	No	24	23

Eligible monitors for providing design value data generally include State and Local Air Monitoring Stations (SLAMS) at population-oriented locations with a FRM or FEM monitor. All data from Special Purpose Monitors (SPM) using an FRM, FEM, or Alternative Reference Method (ARM) which has operated for more than 24 months is eligible for comparison to the relevant NAAQS, subject to the requirements given in the October 17, 2006 Revision to Ambient Air Monitoring Regulations (71 FR 61236). All monitors used to provide data must meet the monitor siting and eligibility requirements given in 71 FR 61236 to 61328 in order to be acceptable for comparison to the 24-hr PM_{2.5} NAAQS for designation purposes.

In EPA Region 8, Lincoln County in Montana shows a violation of the 24-hour PM_{2.5} standard. Therefore, Lincoln County (or a portion thereof) should be included in the nonattainment area. Since the counties of Sanders, MT and Flathead, MT have very low PM_{2.5} design values and are both topographically and meteorologically isolated from the remote area of Libby in Lincoln County (see Factors 6 and 7 for further information), they are no longer considered to be candidates for a nonattainment designation and, therefore, require no further analysis.

Factor 3: Population density and degree of urbanization (including commercial development)

Table 3 shows the 2005 population for Lincoln County as well as the population density. Population data give an indication of whether it is likely that population-based emissions might contribute to violations of the 24-hour PM_{2.5} standards.

Table 3. Population

County	State Recommended Nonattainment?	2005 Population	2005 Population Density (pop/sq mi)
Lincoln	No	19,182	5

As shown in Table 3 above, Lincoln County is a sparsely populated rural area. Based on the 2000 U.S. Census the population for Libby is 2,626 persons.

Factor 4: Traffic and commuting patterns

This factor considers the number of commuters in Lincoln County who drive within the County and the percent of total commuters as well as the total Vehicle Miles Traveled (VMT) in millions of miles.

Table 4. Traffic and Commuting Patterns

County	State Recommended Non-attainment?	2005 VMT (millions annually)	Number Commuting to any violating counties	Percent Commuting to any violating counties	Number Commuting into statistical area	Percent Commuting into statistical area
Lincoln	No	216	6,180	94	NA	NA

The listing of Counties in Table 4 reflects the number of people commuting *within* Lincoln County only. NA is abbreviation for “not applicable”.

The 2005 VMT data used for Table 4 above and Table 6 below of this 9-factor analysis have been derived using methodology similar to that described in “Documentation for the final 2002 Mobile National Emissions Inventory, Version 3, September 2007, prepared for the Emission Inventory Group, U.S. EPA. This document may be found at: [atftp://ftp.epa.gov/EmisInventory/2002finalnei/documentation/mobile/2002_mobile_nei_version_3_report_092807.pdf](http://ftp.epa.gov/EmisInventory/2002finalnei/documentation/mobile/2002_mobile_nei_version_3_report_092807.pdf)

The 2005 VMT data were taken from documentation which is still draft, but which should be released in 2008.

Factor 5: Growth rates and patterns

This factor looks at expected population and VMT for Lincoln County from 2000 to 2005, as well as patterns of population and VMT growth. A County with rapid population or VMT growth is generally an integral part of an urban area. However, Lincoln County is a remote and isolated rural area and has minimal changes in growth rates and patterns. The specific area in Lincoln County being considered for nonattainment is Libby only. The area is topographically isolated in a remote area of Montana. The nearest town is Troy with a population of 1,957 which is 20 miles northwest of Libby. Troy is located in a narrow mountain valley separate and at a lower elevation than Libby.

Table 5 below shows population, population growth, VMT for Lincoln County.

Table 5. Population and VMT Growth and Percent Change

Location	Population (2005)	Population % change (2000 - 2005)	2005 VMT (millions mi)	VMT Growth (1000s mi from 2000 to 2005)	VMT % change (2000 to 2005)
Lincoln	19,182	2	216	4	NA

Factor 6: Meteorology (weather/transport patterns)

Libby, Montana is located in the northwestern part of the state in a narrow, north-south oriented valley. The ridgetops surrounding Libby are approximately 4,000 feet higher than the town. There are no other towns or large emissions sources nearby thus transport of high background

concentrations into Libby is unlikely. The highest PM_{2.5} concentrations in Libby generally occur during the months of November through February. During the summer months concentrations typically average less than the 24-hour PM_{2.5} standard while winter concentrations are well above the standard. The much higher concentrations in winter are typically caused by stagnant weather conditions, strong temperature inversions, light winds and high emissions of direct PM_{2.5} from woodstoves used for residential heating. The meteorological data for Libby is based on information from the Kalispell Airport

For this factor, EPA considered data from National Weather Service instruments in the area. Wind direction and wind speed data for 2004-2006 were analyzed, with an emphasis on “high PM_{2.5} days” for each of two seasons (an October-April “cold” season and a May-September “warm” season). These high days are defined as days where any FRM air-quality monitors had 24-hour PM_{2.5} concentrations above 95% on a frequency distribution curve of PM_{2.5} 24-hour values.

For each air quality monitoring site, EPA developed a “pollution rose” to understand the prevailing wind direction and wind speed on the days with highest fine particle concentrations. Figure 2 below identifies 24-hour PM_{2.5} values by color with days exceeding 35 ug/m³ being denoted with a red or black icon. A dot indicates the day occurred in the warm season; a triangle indicates the day occurred in the cool season. The center of the figure indicates the location of the air quality monitoring site, and the location of the icon in relation to the center indicates the direction from which the wind was blowing on that day. An icon that is close to the center indicates a low average wind speed on that day. Higher wind speeds are indicated when the icon is further away from the center.

These data show that 24-hour PM_{2.5} concentrations are influenced by emissions in any direction at various times, but these data also suggest that emissions in some directions relative to the violation are more likely to contribute than emissions in other directions. The meteorology factor is also considered in each county’s Contributing Emissions Score (CES) because the method for deriving this metric included an analysis of trajectories of air masses for high PM_{2.5} days.

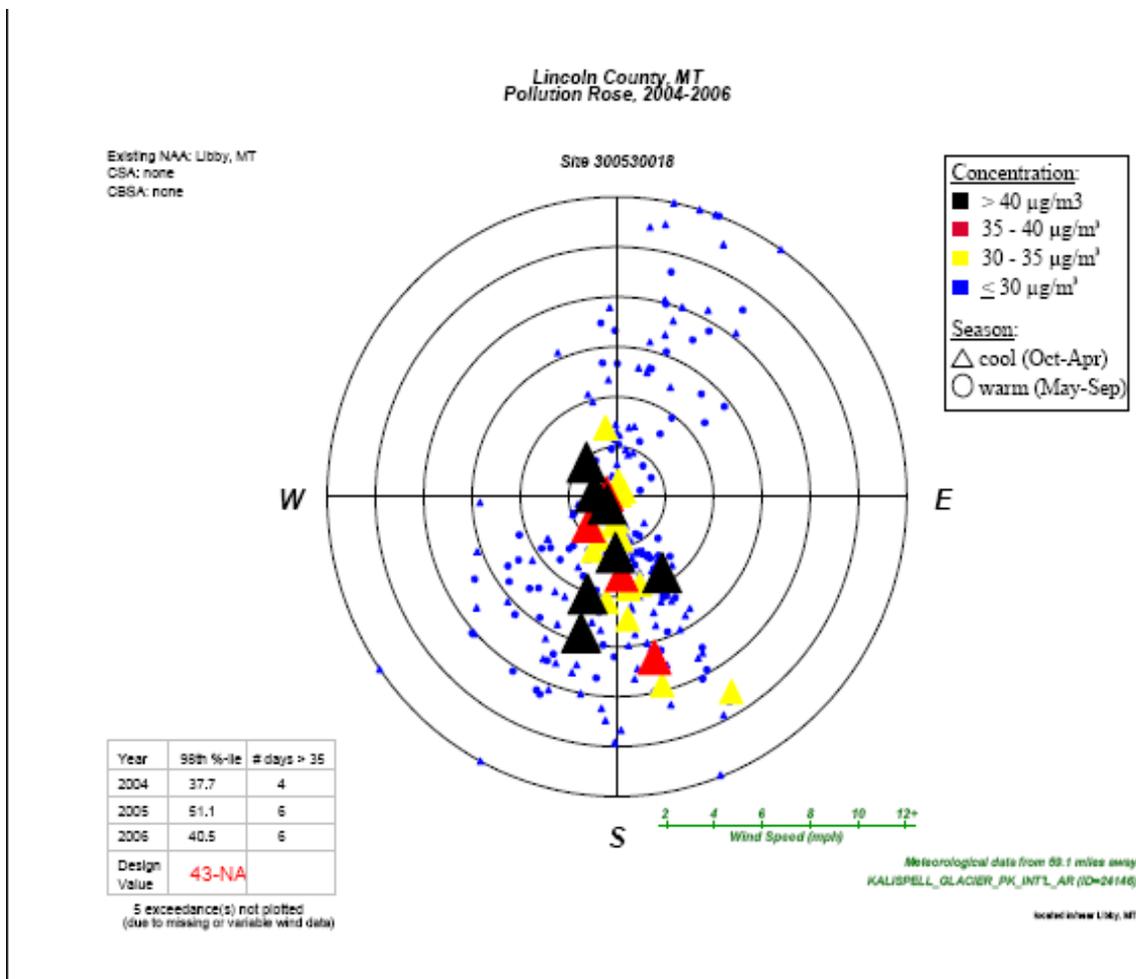


Figure 2

Factor 7: Geography/topography (mountain ranges or other air basin boundaries)

The geography and topography factor analyzes physical features of the land that might have an effect on the air shed and, therefore, on the distribution of $\text{PM}_{2.5}$ over the Libby area. Lincoln County has a land area of 3,675 square miles. The area of concern showing high $\text{PM}_{2.5}$ concentrations is located within and around the Libby vicinity. Figures 3 and 4 below show that Lincoln County has numerous geographical and topographical boundaries that limit the air shed containing the Libby area to a very narrow valley surrounded by high mountain ranges. The town of Libby has a total land area of 1.3 square miles. The elevation of the Libby area is 2,601 feet (MSL) and the surrounding ridgetops are 4,000 feet higher. The town sits in a narrow valley that runs in a north-south direction (located at $48^{\circ}23'17''$ North, $115^{\circ}33'13''$ West.) The Kootenai River runs adjacent to the town in an east-west direction. The Kootenai Basin is dominated by three major mountain ranges. The Rocky Mountain Range and the Flathead Range are the eastern boundary and the Purcell Range roughly bisects it from north to south. The Selkirk and Cabinet Ranges mark the western boundary. Elevations reach a maximum of about 12,000 feet

with most summit elevations between 6,000 and 7,000 feet. Except for a few very small towns, most notably Troy, the entire watershed is heavily forested and the majority of Lincoln County is National Forest land with no other large metropolitan areas. The nearest large cities are Kalispell which is 90 miles due east and Missoula which is 192 miles south.

The geographical and topographical barriers in Libby significantly limit air pollution from being transported into the Libby air shed from elsewhere. Therefore, this factor combined with factor 6 Meteorology demonstrate how the PM_{2.5} in the area remains confined to the Libby area. The combination of a low lying valley, surrounded by high elevation mountains and the single river valley restrict, trap, and concentrate air pollution in the Libby area thus providing the conditions for violations of the PM_{2.5} standard to occur.

Figure 3: Libby, MT area from Google Earth™

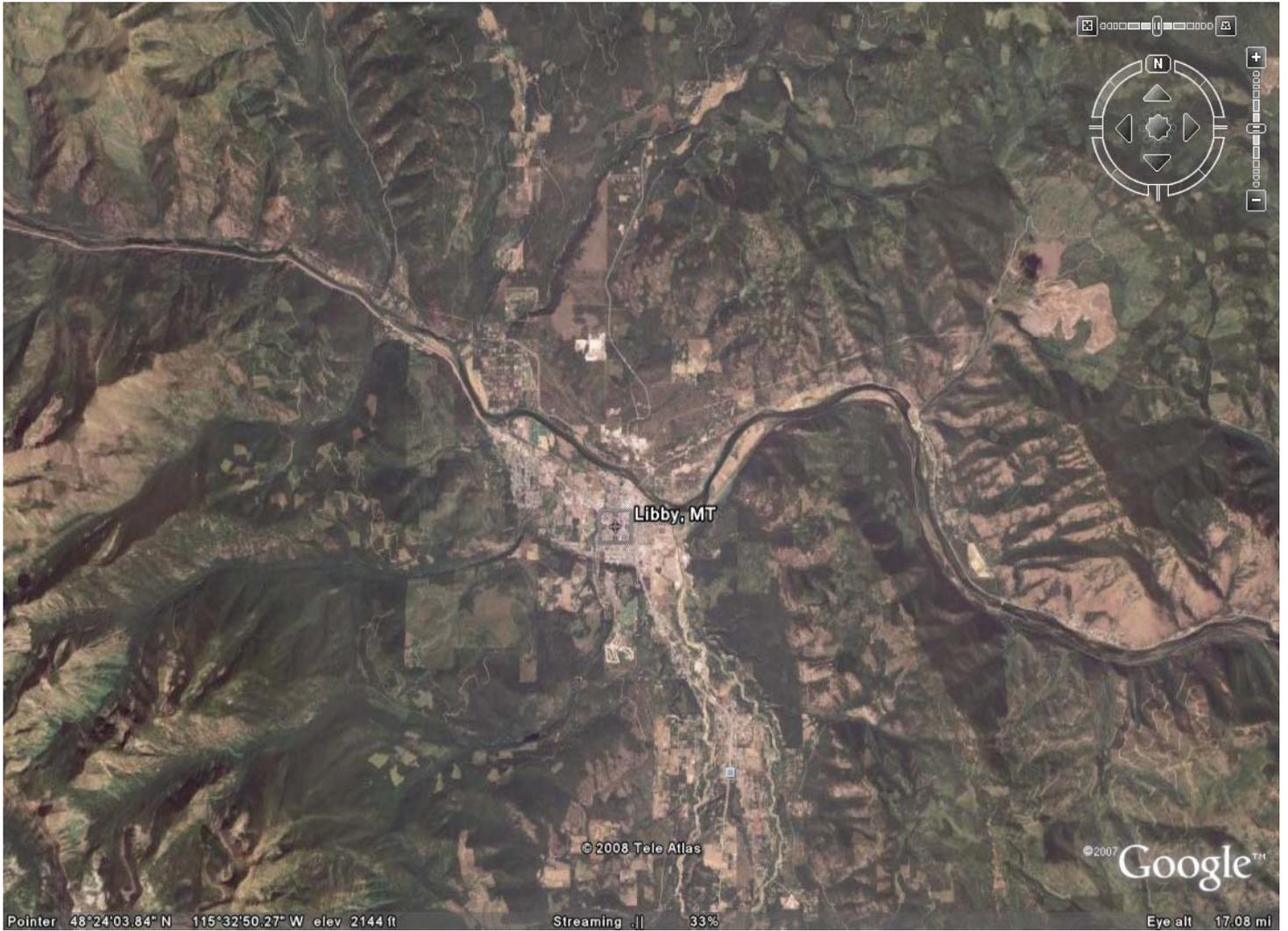


Figure 4: Libby, MT area with topography from National Atlas.Gov



Factor 8: Jurisdictional boundaries (e.g., existing PM and ozone areas)

The analysis of jurisdictional boundaries considered the planning and organizational structure of Lincoln County to determine if the implementation of controls in a potential nonattainment area can be carried out in a cohesive manner. Air quality planning for the area of Libby is under the Lincoln County Health Department who adopts rules and regulations that are reviewed and approved by the Montana Department of Environmental Quality. There are no other jurisdictions to consider. The State of Montana's program for air quality protection can be carried out in a cohesive manner for addressing the nonattainment issues in Lincoln County.

In addition, the area is nonattainment for the PM_{10} standard and the $PM_{2.5}$ annual standard. The State of Montana has recently submitted an attainment plan for the annual standard. The jurisdictional boundary proposed for the 24-hour $PM_{2.5}$ standard is the same boundary described for the annual $PM_{2.5}$ standard.

Factor 9: Level of control of emission sources

This factor considers emission controls currently implemented in the Lincoln County area. The emission estimates in Table 1 (under Factor 1 above) include any control strategies implemented by the States before 2005 that may influence emissions of any component of PM_{2.5} emissions (i.e., total carbon, SO₂, NO_x, and crustal PM_{2.5}). The Montana Department of Environmental Quality has recently submitted a plan for attaining the annual PM_{2.5} standard that includes specific rules adopted by Lincoln County for regulating woodstoves and other wood burning ordinances. For the 2005-2007 time period, Libby is showing attainment of the annual standard. In addition, the Libby area has completed a changeout of more than 1,000 existing non-EPA certified woodstoves for low-emitting EPA certified stoves. When fully implemented, this program should reduce direct PM_{2.5} emissions in the cold weather months and help lower fine particle concentrations.

Attachment 2

Description of the Contributing Emissions Score

The CES is a metric that takes into consideration emissions data, meteorological data, and air quality monitoring information to provide a relative ranking of counties in and near an area. Using this methodology, scores were developed for each county in and around the relevant metro area. The county with the highest contribution potential was assigned a score of 100, and other county scores were adjusted in relation to the highest county. The CES represents the relative maximum influence that emissions in that county have on a violating county. The CES, which reflects consideration of multiple factors, should be considered in evaluating the weight of evidence supporting designation decisions for each area.

The CES for each county was derived by incorporating the following significant information and variables that impact PM_{2.5} transport:

- Major PM_{2.5} components: total carbon (organic carbon (OC) and elemental carbon (EC)), SO₂, NO_x, and inorganic particles (crustal).
- PM_{2.5} emissions for the highest (generally top 5%) PM_{2.5} emission days (herein called “high days”) for each of two seasons, cold (Oct-Apr) and warm (May-Sept)
- Meteorology on high days using the NOAA HYSPLIT model for determining trajectories of air masses for specified days
- The “urban increment” of a violating monitor, which is the urban PM_{2.5} concentration that is in addition to a regional background PM_{2.5} concentration, determined for each PM_{2.5} component
- Distance from each potentially contributing county to a violating county or counties

[A more detailed description of the CES can be found at http://www.epa.gov/ttn/naaqs/pm/pm25_2006_techinfo.html#C.]

Technical Support Documentation
MT DEQ flagging demonstration
2007 wildfire season

MT DEQ submitted a request for exclusion of 2007 Wildfire PM data under the Exceptional Events Rule on December 7, 2007. The submission met the CFR required deadline for submittal, in this case, December 18, 2007, as detailed in 40 CFR 50.14(c)(3)(i) “12 months prior to the date that a regulatory decision must be made.” The package was reviewed against the Exceptional Events Rule as well as the Region 8 developed internal Exceptional Events Checklist. For 2007, Montana DEQ flagged nearly 14,000 PM₁₀ and PM_{2.5} data points from 12 counties in MT. Many of these were information only flags on hourly PM₁₀ and PM_{2.5} data which did not contribute to NAAQS exceedances or violations. EPA Region 8 was able to concur on a total of 107 flags (both hourly and 24-hour data) on PM₁₀ and PM_{2.5} data showing exceedances or violations in AQS which were subject to the Exceptional Events Rule. These flags affected 10 monitoring sites in 8 counties on 12 calendar days of 2007.

1. Public Notification: EPA review concluded that the CFR requirements for public notification were met through the following:
 - a. The demonstration was made available for 30 days of public comment. MT DEQ notified EPA that no comments were received.
 - b. Demonstration package included copies of MT DEQ Daily Forest Fire Smoke Advisories detailing the current situation.
 - c. Demonstration package included copies of MT DEQ Notice of Public Hearing
 - d. Individual notice was made to each person on the MT DEQ’s interested party list.
 - e. Real time particulate information is available on MT DEQ website (MT DEQ monitors, NWS ASOS visibility monitors and USFS remote access nephelometers and BAMS).
 - f. The demonstration included forest fire smoke reports detailing locations and severity.

2. Flagging of Data:
 - a. MT DEQ met the schedule for submission of data with an exceptional event flag as detailed in 40 CFR 58.16. Forest fire flags were placed on all data affected by the wildfires with the understanding that EPA would only concur on exceeding or violating data, the remaining flags would be informational only.

EPA reviewed the demonstration and placed concurrence flags on data based on the MT DEQ package which met the following rule requirements:

Basic Table Information: The values listed in the following table caused an exceedance or violation and were concurred upon based on the technical analysis of the demonstration package. EPA’s technical analysis focused on only the values that caused an exceedance or violation.

1. MT DEQ submitted PM₁₀ and PM_{2.5} data that were affected.

- a. A spreadsheet was submitted with all values flagged, date, parameter code, POC number, AQS site ID and site name and city.
- b. A spreadsheet comparison of flagged values to historical mean and max data indicating the flagged value was higher than a typical day at that monitor. EPA reviewed and concurs that the flagged values were outside of the typical air quality concentrations.

Site Name	Site ID	Date	Value	Parameter	POC
Butte Greeley School	30-093-0005	8/1/2007	35.4	88101	1
Butte Greeley School	30-093-0005	8/7/2007	38.4	88101	1
Butte Greeley School	30-093-0005	8/13/2007	86.6	88101	1
Butte Greeley School	30-093-0005	8/16/2007	43.3	88101	1
Butte Greeley School	30-093-0005	8/19/2007	50.3	88101	1
Butte Greeley School	30-093-0005	8/31/2007	47.5	88101	1
Butte Greeley School	30-093-0005	9/12/2007	35.4	88101	1
Butte Greeley School	30-093-0005	8/13/2007	195.3	81102	4
Butte Greeley School	30-093-0005	8/14/2007	160.8	81102	4
Butte Greeley School	30-093-0005	8/15/2007	158.7	81102	4
Great Falls High School	30-013-1026	7/29/2007	37.0	88101	1
Great Falls High School	30-013-1026	8/4/2007	51.2	88101	1
Great Falls High School	30-013-1026	8/13/2007	35.3	88101	1
Great Falls High School	30-013-1026	8/19/2007	35.3	88101	1
Great Falls High School	30-013-1026	8/31/2007	48.0	88101	1
White Fish Dead End	30-029-0009	8/4/2007	40.5	88101	1
White Fish Dead End	30-029-0009	8/13/2007	65.9	88101	1
White Fish Dead End	30-029-0009	8/16/2007	49.4	88101	1
Kalispell Flathead Electric	30-029-0047	8/4/2007	35.7	88101	1
Kalispell Flathead Electric	30-029-0047	8/13/2007	50.2	88101	1
Kalispell Flathead Electric	30-029-0047	8/16/2007	67.1	88101	1
Bozeman WWTP	30-031-0006	8/13/2007	85.3	88101	1
Bozeman WWTP	30-031-0006	8/19/2007	35.8	88101	1
Belgrade Conagra	30-031-0008	8/13/2007	71.5	88101	1
Belgrade Conagra	30-031-0008	8/19/2007	37.6	88101	1
Helena Lincoln School	30-049-0018	8/7/2007	45.6	88101	1
Helena Lincoln School	30-049-0018	8/19/2007	57.8	88101	1
Helena Lincoln School	30-049-0018	8/31/2007	56.9	88101	1
Missoula Health Department	30-063-0031	8/16/2007	70.8	88101	1
Missoula Health Department	30-063-0031	8/16/2007	70.1	88101	2
Missoula Health Department	30-063-0031	8/19/2007	49.5	88101	1
Missoula Health Department	30-063-0031	8/31/2007	45.4	88101	1
Missoula Health Department	30-063-0031	9/12/2007	35.4	88101	1
Hamilton PS #46	30-081-0007	8/4/2007	49.7	88101	1
Hamilton PS #46	30-081-0007	8/7/2007	42.2	88101	1
Hamilton PS #46	30-081-0007	8/16/2007	131.9	88101	1
Hamilton PS #46	30-081-0007	9/15/2007	51.4	88101	1
Thompson Falls High School	30-089-0007	8/16/2007	75.1	88101	1

Detailed Description of the Event:

1. Event Description
 - a. The events, wildfires, meet the CFR definition in 40 CFR 50.1 to qualify under the rule because they affected air quality, are not reasonable controllable or preventable, are natural events and were determined by EPA to be Exceptional Events. From July through September 2007, wildfires burned several thousand acres in Montana and Idaho.

2. Clear Causal Relationship:

The demonstration package included:

 - a. Satellite imagery, which EPA reviewed and concurs that on the days in question, a plume was present in the monitored area.
 - b. Photos of fire plumes depicting the magnitude of the smoke from the fires, which EPA concurs was significant.
 - c. Forest fire smoke reports detailing locations and severity of the smoke on the days in question, which EPA reviewed and concurs that the information corresponds with the exceedance or violation data.
 - d. Smoke impact forecasts from the state meteorologist predicting impacts on specific local areas. EPA reviewed these forecasts and determined that they were fairly reliable in predicting the areas of impact.

3. Concentration higher than typical air quality, including background and no exceedance or violation “but for” the event:

The demonstration package included:

 - a. MT DEQ statement of no evidence implicating any other agent or event, other than wildfires, contributing PM on the noted dates.
 - b. Spreadsheet comparison of flagged value to historical mean and max data indicating recorded value was higher than a typical day at that monitor. For all PM_{2.5} monitors upon which EPA provided concurrence, the summertime monthly historical means for 2004-2006 were less than 9 µg/m³, and the highest value not historically impacted by wildfire smoke was 22 µg/m³, both well below the exceedance level data on which EPA provided concurrence. Therefore, “but for” the fires, there would have been no exceedances.
 - c. MT DEQ knowledge of local air quality indicates that exceedances never occur in the summer unless there are wildfires present. EPA concurs based on previously stated analysis as well as working with the state and their data over the years gaining an understanding of the air quality issues and trends in the state.