

General comment: The FS The Wyoming 309(g) RH SIP is a detailed document which addresses all of the requested elements outlined in our letter dated 8/2006. Nevertheless, we have concerns regarding some technical approaches and policy considerations as outlined below.

## **Chapters 4 and 5**

Tables 4.2-1 and 4.3-1 show projected decreases in overall state SO<sub>x</sub> and NO<sub>x</sub> emissions. However the same tables show increases in SO<sub>x</sub> emissions from Area sources and NO<sub>x</sub> emissions from Area sources and Oil & Gas sources by 2018. The subsequent PSAT model results (Figures 5.2.1-1, etc.) show increases in SO<sub>x</sub> impacts from WY on the best and worst 20% days at all three WY Class I areas, and increases in NO<sub>x</sub> impacts on the worst 20% days at YELL and BRID, and best 20% days at BRID. This is problematic because WY is required to demonstrate that it is obtaining “its share of the emission reductions needed to meet the progress goal for the area.” The FS believes that increasing WY’s impacts at its Class I areas cannot be understood to be WY’s “share”.

*51.308 (d) 3 ...In establishing its long-term strategy for regional haze, the State must meet the following requirements:*

...

*(ii) Where other States cause or contribute to impairment in a mandatory Class I Federal area, the State must demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emission reductions needed to meet the progress goal for the area.*

Figure 5.2.8-3. Where do all the EC emissions come from that cause 20% best days at BRID to have most EC from natural fire? In other words, the WEP analysis shows the overwhelming majority of EC on the cleanest 20% days at Bridger are from “natural fire”. The cleanest days at Bridger principally occur in the winter when “natural fire” is rare compared to residential wood burning for example. How can “natural fire” be such a dominant fraction on these clean days?

## **Chapter 6**

The FS acknowledges WY’s involvement in the SO<sub>2</sub> backstop trading program, and the corresponding regional SO<sub>2</sub> emissions reductions. This program may well be contributing to noted decreases in sulfate concentrations in the mountain west.

FS is resubmitting its comments on WY’s non-EGU BART facility since our original submittal was beyond the deadline for the original comment period.

FS comments on EGU BART determinations were submitted to WY DEQ within the required time limit, and are not repeated here.

## Chapter 7

The FS concurs with EPA Region 8 in its letter dated 12 August, 2009, in that WY's 309 status does not absolve WY of its requirement to perform reasonable progress analyses for SO<sub>2</sub> at Class I areas that are not part of the 16 Colorado Plateau Class I areas.

Has WY demonstrated that its plan represents greater visibility improvement than is expected to result from implementation of other requirements of the CAA?

*51.308 (d) 1 ...*

*(vi) The State may not adopt a reasonable progress goal that represents less visibility improvement than is expected to result from implementation of other requirements of the CAA during the applicable planning period.*

For example, Table 4.3-1 lists roughly 24,000 TPY of increase in NO<sub>x</sub> emissions from Area and Oil & Gas sources, and roughly 7,000 TPY of NO<sub>x</sub> reductions from BART (Point) sources. The additional reductions of roughly 50,000 TPY come from mobile source rules which would be counted as "other requirements of the CAA". Not counting the mobile NO<sub>x</sub> reductions, WY has chosen a reasonable progress goal that net adds NO<sub>x</sub>, which is "less visibility improvement..."

The use of a Q/d screening tool for evaluating reasonable progress controls seems reasonable for large stationary sources. Is Q/d based on unit emissions or facility/project emissions? Is it WY's intent to decrease the Q/d threshold for future planning periods, hence allowing more facilities to be considered? Does WY DEQ have a list of all considered sources (not just those over 10) and the corresponding Q/d's? If so, that list would be worth including in the SIP. How many more sources would be included if WY used a Q/d of 9 for example?

A Q/d analysis does not practically address area sources. How will area sources be addressed under RP?

From the 309 (g) TSD on the DEQ website, this table lists sources with Q/d >10. Can you please add to this table which sources were controlled, by what technologies, and whether under BART or RP?

Plant Name	County	NOx (tpy)	Distance to Nearest Class I Area (kilometers)	Q/D	Class I Area Reference
MOUNTAIN CEMENT CO	Albany	1896.63	69	27.48738478	Rawah Wilderness (CO)
PACIFICORP_WYODAK (Subject to BART)	Campbell	5213.72	169	30.85041539	Northern Cheyenne (MT)*
PACIFICORP_DAVE JOHNSTON	Converse	2265.69345	198	11.44290	Wind Cave (SD)
PACIFICORP_DAVE JOHNSTON	Converse	2174.17597	198	10.98069	Wind Cave (SD)
PACIFICORP_DAVE JOHNSTON (Subject to BART)	Converse	5002.41749	198	25.26473	Wind Cave (SD)
PACIFICORP_DAVE JOHNSTON (Subject to BART)	Converse	5337.88049	198	26.95899	Wind Cave (SD)
PACIFICORP_NAUGHTON POWER PLANT (Subject to BART)	Lincoln	5819.14354	75	77.58858	Bridger Wilderness (WY)
PACIFICORP_NAUGHTON POWER PLANT (Subject to BART)	Lincoln	4731.28053	75	63.08374	Bridger Wilderness (WY)
PACIFICORP_NAUGHTON POWER PLANT (Subject to BART)	Lincoln	3798.40423	75	50.64539	Bridger Wilderness (WY)
BASIN ELECTRIC_LARAMIE RIVER STATION (Subject to BART)	Platte	6245.13706	202	30.91652	Rawah Wilderness (CO)
BASIN ELECTRIC_LARAMIE RIVER STATION (Subject to BART)	Platte	5999.89431	202	29.70245	Rawah Wilderness (CO)
BASIN ELECTRIC_LARAMIE RIVER STATION (Subject to BART)	Platte	6309.22827	202	31.23380	Rawah Wilderness (CO)
FMC CORP_GREEN RIVER PLANT_SODIUM PROD (Subject to BART)	Sweetwater	1738.89054	138	12.60066	Bridger Wilderness (WY)
FMC CORP_GREEN RIVER PLANT_SODIUM PROD (Subject to BART)	Sweetwater	1625.16452	138	11.77655	Bridger Wilderness (WY)
PACIFICORP_JIM BRIDGER (Subject to BART)	Sweetwater	10779.70520	113	95.39562	Bridger Wilderness (WY)
PACIFICORP_JIM BRIDGER (Subject to BART)	Sweetwater	9853.98238	113	87.20338	Bridger Wilderness (WY)
PACIFICORP_JIM BRIDGER (Subject to BART)	Sweetwater	10077.32077	113	89.17983	Bridger Wilderness (WY)
PACIFICORP_JIM BRIDGER (Subject to BART)	Sweetwater	9889.16059	113	87.51470	Bridger Wilderness (WY)

\*Not Federal Mandatory Class I Area

Section 7.3.5 When will phase II report be available?

Table 7.3.5-1 lists 16-36 \$/ton for SNCR with 90-99% efficiency for compressor engines. Why not require this on all units?

Section 7.6

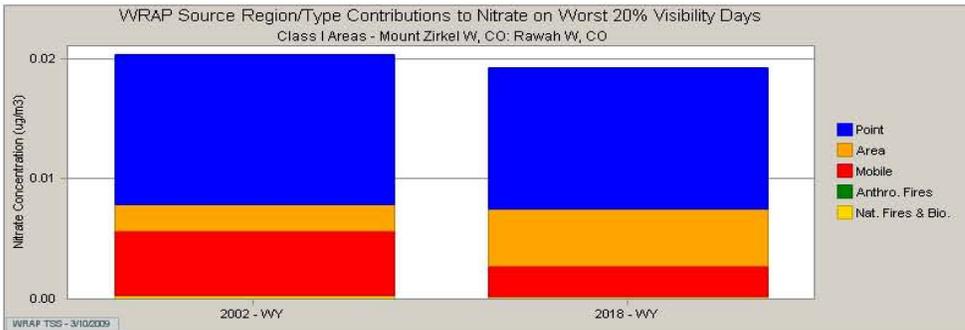
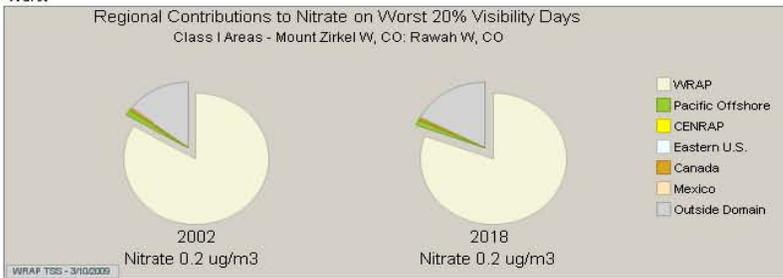
1. Neff, et al. 2008, suggest that roughly 75% of windblown dust is attributable to human activity. As such, it is not appropriate to suggest that windblown is a reason for failure to achieve the URP.
6. While it is true that Western Class I areas are cleaner than their Eastern counterparts, that can make it *less difficult* to show improvement. That is, cleaner air is *more* sensitive to changes in pollution. This is why it is important to consider visibility impacts (e.g. \$/dv) when determining control strategies.

## Chapter 8

While tables 8.1.2.1-1 & 8.1.2.1-2 do an adequate job of demonstrating impacts from WY emissions on surrounding States' Class I areas, documentation of the projected impacts from WY emissions on surrounding States' Class I areas in the future is left in the 309 (g) Technical Support Document. It all belongs in the SIP as part of the RP demonstration. The comment that impacts from WY emissions are "a small portion of out-of-state visibility degradation" is subjective and perhaps misleading. For example, even if 18% of 14% is a "small portion", that is *on average* over many days. The maximum daily contributions could be MUCH higher. In other words, impacts from WY could be very large on an episodic basis. Further, projections of future increases in WY NOx impacts, (as shown below for best days at Mount Zirkel) could significantly increase WY's share of impacts even as surrounding States try to meet their reasonable progress goals.

Wyoming Nitrate Contribution to Mount Zirkel

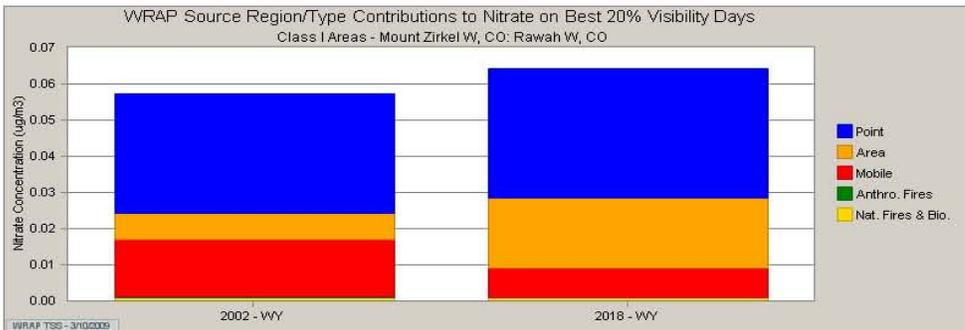
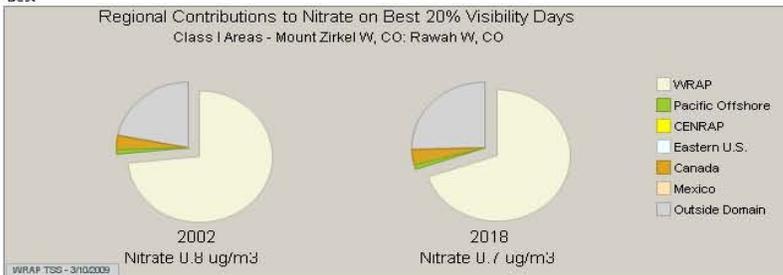
Worst



site	Year	modelrun	param	N	SReg	PT	AF	MV	Nat	Area	Total
MOZ11	2002	plan02c36k	PN 3	21	WY	0.0125381	0	0.0054429	0.0002333	0.0021762	0.0203905

Wyoming's 2002 Contribution (20% Worst) to Nitrate at Mount Zirkel = 0.02 divided by 0.2, or 10%

Best



site	Year	modelrun	param	N	SReg	PT	AF	MV	Nat	Area	Total
MOZ11	2002	plan02c36k	PN 3	20	WY	0.03308	9.00E-05	0.0159	0.00101	0.007315	0.057395

Wyoming's 2002 Contribution (20% Best) to Nitrate at Mount Zirkel = 0.06 divided by 0.8, or 8%

P130 “By 2018, NOx emissions from Wyoming are projected by the WRAP to decrease by 39,861 tons, which will help reduce Wyoming’s impact to out of state Class I areas.” While these emissions should decrease impacts on average, localized emissions increases could clearly cause some Class I area impacts to increase.

What is the final proposal for RP controls at Laramie Cement? What are the actual NOx emissions at Laramie Cement 524 tpy (Table 4.1 EC/R WY report) or 2080 tpy (Table 7-1 EC/R general report)?

The SIP proposes SCR for NOx control at Laramie River and Jim Bridger power plants. The FS supports these decisions.

Section 8.3.4 WY states that RP rulemaking will be complete by 2013. It was noted above that the FS believes that WY has not demonstrated that it is meeting its share of emissions reductions for Class I areas in and out of WY, and possibly outside of WY. The WRAP commissioned reports<sup>1,2</sup> with supplementary information for “four factor analyses” for a variety of source categories. Many of these analyses suggest low cost controls for source categories with significant emissions. The reports were delivered in May of 2009. Why is this information not mentioned or incorporated in the current SIP draft (other than as addendums in the TSD)?

## **Chapter 9**

We note that WY operates IMPROVE protocol samplers at Thunder Basin National Grasslands and Cloud Peak Wilderness. FS finds this information useful and wishes to acknowledge WY’s efforts. The FS also acknowledges the support we receive from WY in providing a site operator at the North Absaroka IMPROVE site. WY’s cooperation in visibility monitoring is greatly appreciated.

Typos:

Section 5.2.9. Should “Fine PM” be “fine soil”?

Table 7.3.4-2 Column 3 - Potential Emission Reductions (1000 tons/ yr). Should be TPY.

P167 . “In spite of the large number of growing uncontrollable sources in the WRAP region, however, Wyoming does see a net visibility improvement at the Wyoming Class I areas through 2018.” Should read “uncontrollable sources impacting the WRAP region...”?

References:

1. **Supplementary Information for Four Factor Analyses by WRAP States** May 4, 2009, EC/R Incorporated.
2. **Supplementary Information for Four-Factor Analyses for Selected Individual Facilities in Wyoming** May 6, 2009, EC/R Incorporated.

**Reattach our non-EGU BART comments.**