

ENVIRONMENTAL PROTECTION AGENCY

Approval, Disapproval and Promulgation of Air Quality Implementation Plans; Partial Approval and Partial Disapproval of Air Quality Implementation Plans and Federal Implementation Plan; Utah; Revisions to Regional Haze State Implementation Plan; Federal Implementation Plan for Regional Haze; Final Rule

81 Fed. Reg. 43894-01 (July 5, 2016), EPA-R08-OAR-2015-0463; FRL-9947-42-Region 8

**DECLARATION OF BRYCE BIRD, UTAH DIVISION OF AIR QUALITY DIRECTOR,  
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY**

1. I, Bryce Bird, have personal knowledge of the facts stated in this declaration. I am competent to testify due to my experience and involvement in the matters explained in this declaration.
2. I am the Director of the Utah Division of Air Quality at the Utah Department of Environmental Quality (UDEQ). As a Director, I am responsible for the daily operations of the Division of Air Quality, including management of the division's employees, overseeing the regional haze State Implementation Plan (RH SIP) development, ensuring compliance with federal air pollution laws, and enforcing rules through permitting of air pollution sources.
3. I also have the authority to exercise any powers listed in Utah Code, Section 19-2-107.
4. I have held the title of the Division Director of the Utah Division of Air Quality at the UDEQ for five years. Prior to being appointed as the Division Director, I have been the Planning Branch Manager for four years.
5. I am providing this declaration in support of the State of Utah's Application for Partial Administrative Stay of the final rule issued by the U.S. Environmental Protection Agency (EPA) on July 5, 2016, partially approving and partially disapproving Utah's RH SIP

submissions for PM<sub>10</sub> Best Available Retrofit Technology (BART) and nitrogen oxide (NO<sub>x</sub>) BART Alternative.<sup>1</sup>

6. This declaration is based on my professional judgment, knowledge, experience, and expertise. I also supervise and receive regular briefings from members of my staff, who develop and revise state implementation plans, participate in the regional haze interstate programs, comment on EPA's proposed rules, develop and implement Utah's compliance with the Clean Power Plan, and prepare and issue permits to air pollution sources.
7. I have also reviewed EPA's proposed rule regarding Utah's BART submission for PM<sub>10</sub> and Utah's BART Alternative submission for NO<sub>x</sub>, EPA's final rule disapproving Utah's BART Alternative for NO<sub>x</sub> and imposing Federal Implementation Plan (FIP), and Utah's RH SIP submission subject to the rule. I understand the impacts of the regional haze FIP on UDEQ.

#### **Utah RH SIP Process for NO<sub>x</sub>**

8. UDEQ has worked on the development of Utah's RH SIP since 1997. Utah was a participant in the Grand Canyon Visibility Transport Commission (GCVTC) and the Western Regional Air Partnership (WRAP), a follow-on organization to the GCVTC. The GCVTC evaluated haze at Class I Areas on the Colorado Plateau, and determined that

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<sup>1</sup> See Approval, Disapproval and Promulgation of Air Quality Implementation Plans; Partial Approval and Partial Disapproval of Air Quality Implementation Plans and Federal Implementation Plan; Utah; Revisions to Regional Haze State Implementation Plan; Federal Implementation Plan for Regional Haze, 81 Fed. Reg. 43894-01 (July 5, 2016).

sulfur dioxide (SO<sub>2</sub>) had the most significant impact on visibility. Consequently, GCVTC recommended that SO<sub>2</sub> should be the focus of the stationary source reductions on the Colorado Plateau. This recommendation was the basis of Utah's original Regional Haze SIP.

9. On December 12, 2003, Utah prepared and submitted a Regional Haze State Implementation Plan (2003 RH SIP) to achieve natural visibility in national parks and other similarly-protected areas within its borders as required by the Clean Air Act (CAA) and EPA regulations.
10. As sulfates were one of the primary pollutants of concern emitted by stationary sources in the Colorado Plateau, the 2003 RH SIP was heavily weighted to achieve SO<sub>2</sub> reductions.
11. While Utah's RH SIP was focused on achieving SO<sub>2</sub> reductions from stationary sources, substantial reductions in NO<sub>x</sub> were also projected to occur from stationary sources as well as mobile and non-road sources. Statewide NO<sub>x</sub> emissions were expected to decline by 36% from 270,000 tons per year (tpy) to 172,000 tpy during the period of 1996 to 2018.
12. In June of 2008, the Utah Air Quality Board (Board)—Utah's air pollution rulemaking body—proposed a revision to the 2003 RH SIP. The revision was necessary to address BART requirements for two other pollutants—NO<sub>x</sub> and PM—and update the projection of visibility improvement based on the new requirements for NO<sub>x</sub> and PM.
13. By that time, substantial SO<sub>2</sub> reductions had been achieved in the Colorado Plateau as a result of the measures implemented through Utah's 2003 RH SIP, notwithstanding EPA's failure to take the required final action.

14. In June of 2008, Utah informally submitted its proposed revised RH SIP (2008 RH SIP) to EPA, which included BART determinations and limits for NO<sub>x</sub> and PM, for EPA's comment and approval.
15. In July of 2008, EPA commented on the 2008 RH SIP during the state rulemaking process, criticizing Utah's BART analysis and enforceability of the proposed limits.
16. On September 3, 2008, the Board finalized the 2008 RH SIP and responded in detail to EPA's comments regarding the BART analysis. As required by Section 7410 of the CAA, once approved by the Board, the 2008 RH SIP became legally binding on PacifiCorp as a matter of state law.
17. On September 9, 2008, Utah formally submitted its 2008 RH SIP to EPA. Among other things, 2008 RH SIP required installation of NO<sub>x</sub> and PM BART emissions controls on four electrical generating units at the Huntington and Hunter power plants that are owned or operated by PacifiCorp. PacifiCorp installed these controls in compliance with the RH SIP.
18. EPA did not reach a final determination on Utah's 2008 RH SIP by March 9, 2010 (statutory deadline).
19. On December 20, 2010, Utah submitted a supplement to the 2008 RH SIP to further clarify Utah's BART determinations.
20. On January 5, 2011, the Board proposed another revision to the 2008 RH SIP (2011 RH SIP Revision). The substantive changes in that Revision affected only the SO<sub>2</sub> milestones

section of the plan and therefore did not constitute a new RH SIP submission with respect to the BART requirements for NO<sub>x</sub> and PM.

21. On February 24, 2011, EPA submitted comments in the state rulemaking process on the proposed 2011 RH SIP Revisions and the 2008 RH SIP.
22. On May 16, 2012, EPA published a notice of proposed rulemaking in the Federal Register, proposing to partially approve and partially disapprove Utah's 2011 RH SIP Revision and the 2008 RH SIP.
23. This action was delayed almost three years. EPA acted only after WildEarth Guardians sued the agency for failure to perform a non-discretionary duty and obtained a consent decree that imposed deadlines on EPA to act on Utah's SIP submissions.<sup>2</sup>
24. On July 16, 2012, Utah submitted comments to EPA on the proposed disapproval, taking issue with a number of EPA's assertions regarding Utah's PM and NO<sub>x</sub> BART analyses.
25. On December 14, 2012, nearly three years after the statutory deadline of March 9, 2010, EPA issued its final rule partially approving and partially disapproving Utah's 2011 RH SIP Revision and 2008 RH SIP. EPA amended this rule on January 22, 2013 to add some non-substantive language. In the final rule, EPA disapproved the NO<sub>x</sub> and PM BART provisions of the 2008 RH SIP.

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<sup>2</sup> See *WildEarth Guardians v. Jackson*, No. 10-cv-01218-REB-BNB (D. Colo. Oct. 28, 2010).

26. However, by the time EPA disapproved Utah's RH SIP in December 2012, the plan had already become legally binding state law requiring PacifiCorp to install the PM and NO<sub>x</sub> BART controls on its units subject to the 2008 RH SIP.
27. Through proactive planning during 2006 to 2014, PacifiCorp has installed new pollution controls on Hunter Units 1 and 2 in 2014 and 2011 respectively, and on Huntington Units 1 and 2 in 2010 and 2006 respectively.
28. Although EPA partially disapproved the Utah 2011 RH SIP Revision and 2008 RH SIP, EPA did not promulgate a regional haze *federal* implementation plan (RH FIP). Instead, EPA allowed Utah to re-evaluate and resubmit its PM and NO<sub>x</sub> BART determinations.
29. Utah has worked diligently since 2012 to submit a revised RH SIP to EPA, leveraging its more than ten-year-long effort to develop a RH SIP that would meet EPA's view of the BART requirements.
30. Utah proposed an initial RH SIP revision on October 1, 2014. Utah took public comment on this proposal and held a public hearing. After receiving public comment, Utah decided to modify and re-propose its RH SIP revision.
31. EPA's Regional Haze Rule provides two pathways to address BART: (1) a case-by-case determination under the provisions of 40 C.F.R. §51.308(e)(1) or (2) an alternative to BART under the provisions of 40 C.F.R. §51.308(e)(2).
32. The October 2014 proposal contained a detailed 5-factor analysis for a BART determination under the case-by-case provisions established in 40 C.F.R. §51.308(e)(1). EPA's disapproval of the BART provisions for NO<sub>x</sub> and PM in 2012 was primarily due

to the alleged lack of a 5-factor analysis that met EPA's criteria. The 5-factor analysis in the October 2014 proposal relied on visibility modeling completed by PacifiCorp in 2012. The proposal reaffirmed the 2008 BART determinations for NO<sub>x</sub> and PM. Post-combustion controls for NO<sub>x</sub> were evaluated and determined to be cost-prohibitive. One factor considered as part of Utah's BART analysis was the no-cost co-benefit of visibility improvement expected to occur due to the planned closure of PacifiCorp's Carbon Plant in 2015. To ensure the ongoing visibility benefit, the proposed October 2014 RH SIP revision made the closure enforceable. The proposal also determined that the PM controls required in the 2008 BART determinations were the most stringent technology available and therefore met the criteria for BART.

33. In November 2014, Utah completed additional modeling that included emission reductions from three electric generating units that were not subject-to-BART: PacifiCorp Carbon Unit 1, PacifiCorp Carbon Unit 2, and PacifiCorp Hunter Unit 3. These modeling results were made available for public review, and the public comment period was extended to allow adequate review.
34. After reviewing the modeling results as well as public comments received on the October 2014 RH SIP revision proposal, Utah prepared a new proposal under 40 C.F.R. § 51.308(e)(2) that provided for an alternative to BART for NO<sub>x</sub>. Utah chose to demonstrate that the alternative measure achieves greater reasonable progress than would be achieved through BART by using a "weight of evidence" analysis under Section 308.

35. To support a “weight of evidence” analysis under Section 308, Utah collected and evaluated information from nine different metrics: (1) annual emissions of visibility-impairing pollutants; (2) improvement in the number of days with significant visibility impairment; (3) 98th percentile modeling impact in deciviews (dv); (4) annual average impact (dv); (5) 90th percentile impact modeling impact (dv); (6) timing of emissions reductions; (7) results from IMPROVE monitoring data; (8) energy and non-air quality benefits; and (9) costs.
36. Utah evaluated a number of different metrics to compare the BART benchmark (the most stringent control technology—low-NO<sub>x</sub> burners with overfire air (LNB/SOFA) in conjunction with selective catalytic reduction (SCR)) to the BART Alternative. The emission reductions under the Alternative included reductions of SO<sub>2</sub> and PM in addition to NO<sub>x</sub> and the visibility improvement could occur during different episodes and during different times of the year under the two scenarios.
37. The only metric that did not support the BART Alternative was the 98th percentile modeling impact—the metric demonstrating visibility impacts on one of the most impaired days. Utah explained that the most stringent NO<sub>x</sub> scenario (BART benchmark) barely achieved greater modeled visibility improvement than the Alternative on these high nitrate days because high nitrate values occur primarily in the winter months.
38. Utah also took into consideration that there is greater uncertainty regarding the effect of NO<sub>x</sub> reductions on wintertime nitrate values because past NO<sub>x</sub> emission reductions have not resulted in corresponding reductions in monitored nitrate values during the winter



months. Utah has greater confidence in the visibility improvement due to reductions of SO<sub>2</sub> because past SO<sub>2</sub> reductions have resulted in corresponding reductions in monitored sulfate values throughout the year.

39. Utah's BART Alternative compared the NO<sub>x</sub>, SO<sub>2</sub>, and PM emission reductions achieved across all three PacifiCorp Plants (Hunter, Huntington, and Carbon) with the emission reductions that would be achieved through the installation of the most stringent control technology for NO<sub>x</sub>—LNB/SOFA with SCR. The analysis showed that combined emissions of NO<sub>x</sub>, SO<sub>2</sub>, and PM would be 2,856 tons per year lower under the alternative scenario.
40. The Alternative also showed that it would improve visibility on more days throughout the year, would achieve a greater average visibility improvement, and would achieve greater reductions in SO<sub>2</sub>—the most significant anthropogenic pollutant during the high visitation months of March through November.
41. The visibility improvement that would occur under the most stringent control technology for NO<sub>x</sub> during the winter months was more uncertain. The fact that ammonium nitrate levels were decreasing during most of the year, but were increasing during the winter, was the best indication that the increase in ammonium nitrate was not due to changes in emissions because the emission changes are not seasonal.
42. Besides, the significant NO<sub>x</sub> reductions that have already occurred due to controls installed pursuant to Utah's 2008 RH SIP and the related BART determinations have not reduced ammonium nitrate values during the winter months when ammonium nitrate

values are the highest, possibly due to low levels of ammonia that limit the formation of ammonium nitrate.

43. The timing of the reductions also supported the BART Alternative, demonstrating that the early emissions reductions commenced in 2006 and would provide “a corresponding early and on-going visibility improvement.”<sup>3</sup>
44. Utah considered cost as one of the factors also weighing in favor of the BART Alternative. Utah found that the Alternative achieves better visibility improvements than the BART benchmark at a significantly lower cost, which presents a classic “win/win” scenario for all the affected parties.
45. The BART Alternative also avoided a \$2 million energy penalty and created environmental benefits from the closure of the Carbon plant. Specifically, the closure reduced water usage, eliminated wastewater discharge, eliminated production of solid wastes in the form of fly ash, reduced fugitive dust, eliminated all emissions, fuel use, and other maintenance, testing, and operational processes for emergency generators, fire pumps, and ancillary equipment at the Carbon plant.
46. Utah has reviewed and prepared a detailed Technical Support Document consisting of six chapters and over 2,000 pages to support its PM<sub>10</sub> BART and NO<sub>x</sub> BART Alternative determinations. Besides the 36-page staff review summarizing these determinations, the Technical Support Document includes PacifiCorp’s BART analysis for all units, Utah’s

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<sup>3</sup> Staff Review 2008 PM BART Determination and Recommended Alternative to BART for NO<sub>x</sub>, Utah Division of Air Quality at 1-13 (May 13, 2015).

- five-factor BART analysis update, DAQ's engineering review, emissions inventory, IMPROVE monitoring data, and visibility modeling.
47. Utah developed the BART Alternative for NO<sub>x</sub> through close collaboration and consultation with EPA. Utah and EPA worked together as regulatory partners to ensure that Utah's BART Alternative was approvable.
  48. EPA submitted comments on Utah's BART Alternative during the state rulemaking public comment period that did not point to any substantive flaws in Utah's submission and did not direct Utah to weigh the evidence differently under the "weight of evidence" analysis. The only modifications EPA requested were minor clarifications and revisions.
  49. EPA only raised one substantive issue during the collaboration process—proper accounting for the SO<sub>2</sub> emissions reductions due to closure of the Carbon plant and clarification of emission inventory requirements for tracking compliance with the SO<sub>2</sub> milestone.
  50. Utah submitted its revised RH SIP for NO<sub>x</sub> and PM to EPA on June 4, 2015.
  51. On October 20, 2015, Utah submitted a SO<sub>2</sub> commitment SIP to EPA pledging to revise SIP Section XX.D.3.c and State rule in Utah Administrative Code R307-150 by March 2018 to address these concerns. EPA did not take action on this SIP in its final rule, essentially causing Utah's efforts to draft and submit the SO<sub>2</sub> commitment SIP to become a wasted effort.

### **Requirements of the Clean Power Plan and the EPA's RH FIP**

52. Absent a stay on the final rule disapproving BART Alternative and imposing the FIP, Utah will experience significant regulatory complications in preparing Utah's plan to comply with the Clean Power Plan (CPP) rule.
53. Even though the U.S. Supreme Court has currently stayed the CPP rule, the D.C. Circuit Court of Appeals is handling the CPP legal challenge on an expedited basis. The full court (en banc) will hear arguments on the merits on September 27, 2016 with the decision expected in early 2017. A petition for writ of certiorari to the U.S. Supreme Court is highly likely and, if granted, the final decision on CPP may issue as early as the beginning of 2018.
54. In the event the courts uphold CPP, Utah would need to immediately begin preparing its state plan even if EPA or the courts extend compliance deadlines. CPP imposes significant obligations on the states beyond what the states have experienced under the CAA or any other federal rule.
55. Preparing a state plan for CPP compliance will be a complicated task, which will take Utah some time to complete. Among other things, CPP compliance will involve interstate collaboration, interagency analyses, working with the regulated community, and consultation with various stakeholders to determine what is technically feasible.
56. As part of its CPP compliance plan, Utah may opt to develop a tradable emissions allowance system, where the facilities would need to begin retiring an allowance for each ton of CO<sub>2</sub> they emit.

57. If CPP withstands legal challenge, Hunter and Huntington plants will be subject to the rule. Installing SCR controls required by the regional haze FIP at this time would make it more likely that these plants would have to continue to operate to recoup the costs of controls and, at the same time, continuing operation would become increasingly costly as CPP allowances become more scarce over time.
58. This is where the measures required by the CPP and the regional haze FIP imposed by EPA may be at odds. The CPP will be putting pressure on the coal-fired power plants, including Hunter and Huntington, to either close, curtail operations, or continue operating at higher costs due to the allowance retirement requirement. Whereas, the installation of SCR under FIP will necessitate continued operation of these plants at the current capacity in order to recover significant capital investment costs.
59. Taking into account a finite useful life of these units, addition of SCR could complicate Utah's regulatory scheme for these units in order to ensure compliance with CPP statewide as well as other long-term planning and regulatory goals.

**SCR Permitting for Hunter and Huntington**

60. The installation and operation of SCR at Hunter and Huntington will involve a lengthy permitting process.
61. Due to the five-year compliance deadline under FIP and the time necessary to obtain permits, PacifiCorp will need to apply for the permits immediately.

62. The permitting process will involve staff review and development of draft permits, public notice and possible public hearings, and likely extensive public input requiring a detailed response to expected comments on the proposed permit changes.
63. Groups that usually oppose coal-fired power plants are likely to comment and object to the proposed permits.
64. John Jenks, the engineer who will be preparing these permits, is currently working on Utah's Serious Area PM<sub>2.5</sub> SIP because he has substantial experience with the refinery operations.
65. Mr. Jenks also has substantial expertise with the power plant permits. He was the project engineer on the most recent permitting actions for Hunter and Huntington; and, therefore, would be assigned to lead the permitting effort for installation of SCR required by the FIP.
66. Due to the FIP timeframes, Mr. Jenks's priorities would shift from working on Serious Area PM<sub>2.5</sub> SIP (a health-based standard) to permitting SCR for Hunter and Huntington (the task of improving visibility in the national parks).
67. I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 31 day of August 2016.



Bryce Bird  
Director, Utah Division of Air Quality  
Utah Department of Environmental Quality