APPENDIX D

Evidence of Public Participation; Public Comments and Nevada's Responses

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SECTION D.1

EVIDENCE OF PUBLIC PARTICIPATION

D.1. 1 Notice of Public Hearing

NOTICE OF PUBLIC COMMENT PERIOD BEGINNING SEPTEMBER 15, 2014 AND A PUBLIC HEARING ON OCTOBER 15, 2014, IF REQUESTED

Conducted by the Nevada Division of Environmental Protection
Bureau of Air Quality Planning

Pursuant to the public hearing requirements in Title 40 of the Code of Federal Regulations Part 51 section 102, the Nevada Division of Environmental Protection (NDEP) is issuing the following notice.

In 1977, Congress amended the Clean Air Act (CAA) establishing a national goal to protect visibility in Class I federal areas – primarily national parks and wilderness areas. The amendments called for the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." Nevada has one mandatory Class I area, the Jarbidge Wilderness Area, in the northeast corner of the state managed by the U.S. Forest Service.

In 1999, the U.S. Environmental Protection Agency (USEPA) adopted the Regional Haze Rule (RHR) requiring each affected state to develop and adopt a plan to improve the haziest days and protect the clearest days at each mandatory Class I area in the state with a goal of returning to natural visibility conditions by the year 2064. The NDEP prepared a Regional Haze state implementation plan (SIP) to meet the requirements of the federal rule and submitted it to USEPA on November 18, 2009. The RHR further requires periodic progress reports every five years after the initial SIP is submitted. The NDEP has prepared a draft "Nevada Regional Haze 5-Year Progress Report" (Report) to meet the requirements of the federal rule. The Report will be submitted to the USEPA by November 18, 2014.

The draft Report and related materials are available on the NDEP website at: http://ndep.nv.gov/admin/public.htm#air_qp or http://ndep.nv.gov/baqp/index.htm. Access to the draft report may also be obtained by contacting Adele Malone at NDEP, 901 S. Stewart Street, Suite 4001, Carson City, NV 89701; (775) 687-9356; or e-mail to amalone@ndep.nv.gov.

Persons wishing to comment on the draft 5-year progress report during the comment period or to request a public hearing should submit their comments or request in writing either in person, by postal service, or fax to Adele Malone at the NDEP address above, or by FAX at (775) 687-6396. ***A request for a hearing must be received by October 6, 2014. Written comments will be received by the NDEP until 5:00 PM PST, October 15, 2014 and will be retained and considered.***

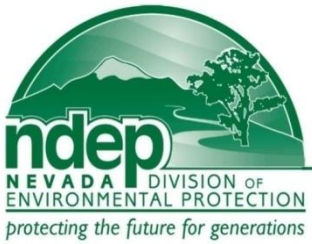
Upon receipt of a valid written request, the NDEP will hold a public hearing in Carson City on:

October 15, 2014
10:00 am to 12:00 pm
Great Basin Conference Room, 4th Floor-South
901 South Stewart Street
Carson City, Nevada

An agenda will be posted on the NDEP web site at least 3 working days prior to the hearing. Oral comments will be received at the Hearing. If no request for a public hearing is received by October 6, 2014, the hearing will be cancelled. Persons may check on the status of the hearing on the NDEP web site at http://ndep.nv.gov/admin/public.htm#air_qp, or you may call the NDEP Bureau of Air Quality Planning at (775) 687-9349.

This notice has been published in the Las Vegas Review-Journal and the Reno Gazette Journal newspapers. It has been posted at the NDEP offices in Carson City and Las Vegas, at the State Library in Carson City and at County libraries throughout Nevada. Members of the public who are disabled and require special accommodations or assistance at the hearing are requested to notify Adele Malone (775-687-9356) no later than 3 full working days before the hearing. 9/10/2014

D.1.2 Notice of Cancellation of Hearing



STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor

Leo M. Drozdoff, P.E., Director

Colleen Cripps, Ph.D., Administrator

NOTICE OF CANCELLATION OF PUBLIC HEARING ON OCTOBER 15, 2014

Nevada Division of Environmental Protection
Bureau of Air Quality Planning

Pursuant to the public hearing provisions in Title 40 of the Code of Federal Regulations Part 51 section 102, the Nevada Division of Environmental Protection (NDEP) is cancelling the following public hearing because no request for a hearing was received:

October 15, 2014
10:00 a.m. to 12:00 p.m.
Great Basin Conference Room, 4th Floor
901 South Stewart Street
Carson City, Nevada

The draft *Nevada Regional Haze 5-Year Progress Report* and related materials are available on the NDEP website at http://ndep.nv.gov/admin/public.htm, click on "Air Quality Planning." Persons may also check on the status of Nevada's regional haze progress report by telephone at (775) 687-9356.

D.1. 3 Newspaper Affidavits

Nevada
Environmental Protection

SEP 19 2014

BAPC/BAQP

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STATE OF NEVADA
COUNTY OF WASHOE

Being first duly sworn, deposes and says: That as the legal clerk of the Reno Gazette-Journal, a daily newspaper of general circulation published in Reno, Washoe County, State of Nevada, that the notice referenced below has published in each regular and entire issue of said newspaper between the dates: **9/15/2014 - 9/15/2014**, for exact publication dates please see last line of Proof of Publication below.

Signed:

Subscribed and sworn to before me

Proof of Publication

NOTICE OF PUBLIC COMMENT PERIOD BEGINNING SEPTEMBER 15, 2014 AND A PUBLIC HEARING ON OCTOBER 15, 2014, IF REQUESTED Conducted by the Nevada Division of Environmental Protection Bureau of Air Quality Planning Pursuant to the public hearing requirements in Title 40 of the Code of Federal Regulations Part 51 section 102, the Nevada Division of Environmental Protection (NDEP) is issuing the following notice. In 1977, Congress amended the Clean Air Act (CAA) establishing a national goal to protect visibility in Class I federal areas - primarily national parks and wilderness areas. The amendments called for the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." Nevada has one mandatory Class I area, the Jarbidge Wilderness Area, in the northeast corner of the state managed by the U.S. Forest Service. In 1999, the U.S. Environmental Protection Agency (USEPA) adopted the Regional Haze Rule (RHR) requiring each affected state to develop and adopt a plan to improve the haziest days and protect the clearest days at each mandatory Class I area in the state with a goal of returning to natural visibility conditions by the year 2064. The NDEP submitted a Regional Haze state implementation plan (SIP) to USEPA on November 18, 2009. The RHR requires periodic progress reports every five years after the initial SIP is

Ad Number: 2000040892

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submitted. The NDEP has prepared a draft "Nevada Regional Haze 5-Year Progress Report" (Report) to meet the requirements of the federal rule. The Report will be submitted to the USEPA by November 18, 2014. The draft Report and related materials are available on the NDEP website at: http://ndep.nv.gov/admin/public.htm#air_qp or http://ndep.nv.gov/baqp/index.htm. Access to the draft report may also be obtained by contacting Adele Malone at NDEP, 901 S. Stewart Street, Suite 4001, Carson City, NV 89701; (775) 687-9356; or e-mail to amalone@ndep.nv.gov. Persons wishing to comment on the draft 5-year progress report during the comment period or to request a public hearing should submit their comments or request in writing either in person, by postal service, or fax to Adele Malone at the NDEP address above, or by FAX at (775) 687-6396. A request for a hearing must be received by October 6, 2014. Written comments will be received by the NDEP until 5:00 PM PST, October 15, 2014 and will be retained and considered. Upon receipt of a valid written request, the NDEP will hold a public hearing in Carson City on: October 15, 2014 10:00 am to 12:00 pm Great Basin Conference Room, 4th Floor-South 901 South Stewart Street Carson City, Nevada An agenda will be posted on the NDEP web site at least 3 working days prior to the hearing. Oral comments will be received at the Hearing. If no request for a public hearing is received by October 6, 2014, the hearing will be cancelled. Persons may check on the status of the hearing on the NDEP web site at http://ndep.nv.gov/admin/public.htm#air_qp, or you may call the NDEP Bureau of Air Quality Planning at (775) 687-9349. This notice has been published in the Las Vegas Review-Journal and the Reno Gazette Journal newspapers. It has been posted at the NDEP offices in Carson City and Las Vegas, at the State Library in Carson City and at County libraries throughout Nevada. Members of the public who are disabled and require special accommodations or assistance at the hearing are requested to notify Adele Malone (775-687-9356) no later than 3 full working days before the hearing. 9/10/2014 No. 40892 September 15, 2014

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No. 40892 September 15, 2014

Ad Number: 2000040892

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Affidavit of Publication

STATE OF NEVADA)
COUNTY OF CLARK) SS:

NV DIVISION ENVIRONM PROT - AIR POLL
STE 4001 AIR POLLUTION CONTROL
901 S STEWART ST
CARSON CITY NV 89701-5267

Account # **22500**
Ad Number **0000307541**

Stacey M. Lewis, being 1st duly sworn, deposes and says: That she is the Legal Clerk for the Las Vegas Review-Journal and the Las Vegas Sun, daily newspapers regularly issued, published and circulated in the City of Las Vegas, County of Clark, State of Nevada, and that the advertisement, a true copy attached for, was continuously published in said Las Vegas Review-Journal and / or Las Vegas Sun in 1 edition(s) of said newspaper issued from 09/15/2014 to 09/15/2014, on the following days:

09 / 15 / 14

NOTICE OF PUBLIC COMMENT PERIOD BEGINNING SEPTEMBER 15, 2014 AND A PUBLIC HEARING ON OCTOBER 15, 2014, IF REQUESTED

CONDUCTED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION BUREAU OF AIR QUALITY PLANNING

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PUB: September 15, 2014
LV Review-Journal

(S) Stacey M. Lewis
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 15th day of September, 2014

Notary Mary A. Lee

MARY A. LEE
Notary Public State of Nevada
No. 09-8941-1
My Appt. Exp. Nov. 13, 2016

D.1. 4 SIP Approval Authority

ALLEN BIAGGI
Director

JIM GIBBONS
Governor

KAY SCHERER
Deputy Director

State of Nevada
Department of Conservation and Natural Resources
Office of the Director
Richard H. Bryan Building
901 S. Stewart Street, Suite 5001
Carson City, Nevada 89701
Telephone (775) 684-2700
Facsimile (775) 684-2715
www.dcnr.nv.gov

Division of Conservation Districts
Division of Environmental Protection
Division of Forestry
Division of State Lands
Division of State Parks
Division of Water Resources
Natural Heritage Program
Wild Horse Program

STATE OF NEVADA

Department of Conservation and Natural Resources

OFFICE OF THE DIRECTOR

May 30, 2007

Wayne Nastri
Regional Administrator
ORA-1, USEPA Region 9
75 Hawthorne Street
San Francisco CA 94105

Dear Mr. Nastri:

Nevada Revised Statutes 445B.205 designates the Department of Conservation and Natural Resources (Department) as the air pollution control agency for the State of Nevada for the purposes of the Clean Air Act insofar as it pertains to State programs. Within the Department, the Division of Environmental Protection has responsibility to manage the air quality planning and air pollution control programs for the State of Nevada. Therefore, pursuant to Nevada Administrative Code 445B.053, I am hereby assigning the Administrator of the Nevada Division of Environmental Protection, or the Deputy Administrator acting on his behalf, to be my official designee for the purposes of the Clean Air Act, including, but not limited to, adoption, revision and submittal of state plans and state implementation plans.

Sincerely,

Allen Biaggi
Director

cc Michael Dayton, Chief of Staff, Office of the Governor
Jodi Stephens, Deputy Chief of Staff, Office of the Governor
Leo Drozdoff, Administrator, NDEP
Colleen Cripps, Deputy Administrator, NDEP
Tom Porta, Deputy Administrator, NDEP
Deborah Jordan, Director, EPA Air Division, Region IX
Jefferson Wehling, ORC, EPA Region IX

SECTION D.2

PUBLIC COMMENTS AND NEVADA'S RESPONSES

On September 15, 2015, the Nevada Division of Environmental Protection (NDEP) opened a 30-day public comment period on the draft *Nevada Regional Haze 5-Year Progress Report* (Progress Report) with the opportunity for a public hearing in Carson City to be held upon public request. Pursuant to the public hearing provisions in Title 40 of the Code of Federal Regulations (CFR) Part 51 section 102, the NDEP cancelled the public hearing as no request for a hearing was received.

The NDEP received one set of written comments during the 30-day public comment period ending October 15, 2014. The single set of comments had signatories from the Sierra Club and National Parks Conservation Association and will be referred to as the non-governmental organization (NGO) comments in the remainder of this document. The NGO letter in its entirety follows the NDEP's response below.

D.2.1 Nevada's Response

SUMMARY OF COMMENTS

The NGO comments focus on the basis of Nevada's negative declaration that emissions management measures in the 2009 RH SIP are being implemented on schedule and visibility improvement appears to be consistent with reasonable progress goals. Specifically, the NGO comments focus on the following:

- The perceived need for a modeling demonstration that the significant emissions reductions that have and will occur at numerous EGUs in the State have significant visibility impacts on the Jarbidge Wilderness Area (Jarbidge WA);
- The assertion that Nevada's progress evaluation is based on a reasonable progress goal that purportedly used a flawed modeling analysis and an outdated emission inventory;
- The NGO's contention that visibility monitoring data do not show that the Jarbidge WA is on a path consistent with the reasonable progress goals; and
- The NGO's conclusion that Nevada should revise its haze plan to include new strategies to improve the progress towards remedying visibility impairment at the Jarbidge WA

NEVADA'S RESPONSE

The NDEP responds first to the general NGO comments as presented on the first two and half pages of the comment letter and summarized above, and then to the four specific comments detailed in the remainder of the letter.

General Comments

The NDEP appreciates the NGO's thorough review of Nevada's Progress Report and their comments. However, the NGO comments overlook some of the basic facts and science supporting Nevada's Progress Report. The NDEP maintains that the Progress Report fulfills every requirement set forth in the Regional Haze Rule (RHR) using the best data available at the time the report was

written. The report documents the first five years of progress for a 60-year planning horizon. 40 CFR 51.308(d)(1)(i)(B). Nevada will submit a full SIP revision in 2018 with an evaluation of progress likely informed by Regional Planning Organization (RPO) photochemical grid modeling for visibility assessment and source apportionment.

The NDEP emphasizes that three-quarters of visibility impairing emissions in Nevada are emitted by natural (non-anthropogenic) sources. 2009 RH SIP, Table 3-2. The Progress Report focuses on the major sources of anthropogenic emissions in Nevada, SO_2 and NO_x. Emissions of SO_2 and NO_x from Nevada point sources have decreased by 78 percent and 50 percent between 2002 and 2008, respectively, with additional reductions through 2011. Progress Report, Sections 3.1 and 5.5.

Nevada has one mandatory Class I area, the Jarbidge WA. The Progress Report demonstrates that Nevada's contribution to visibility impairment at Jarbidge WA is minimal. Five-year rolling averages of annual worst days visibility conditions from 2010 to 2012 (2006-2010, 2007-2011 and 2008-2012) show nitrate contributes between 3.5 and 4.2 percent, and sulfate contributes between 15.1 and 16.6 percent of total light extinction on the worst days at JARB1. Progress Report, Table 4-4. Source apportionment modeling (Table 2 and Table 3 below) shows that in the worst case scenario, Nevada NO_x and SO_2 emissions contribute at most only 0.6 and 0.9 percent, respectively, to total light extinction at the Jarbidge WA.[1] When emissions from only point sources are considered, the contributions drop to 0.3 and 0.6 percent, respectively.

The RHR requires each state to adopt a plan to improve the haziest days and protect the clearest days at each mandatory Class I area in the state. The Progress Report shows that from the baseline to the progress period, there is no degradation of the best days sulfate or nitrate light extinction at the Jarbidge WA. Figure 5, below. Furthermore, nitrate is not impeding worst days visibility progress at the Jarbidge WA. Five-year averages of annual worst days visibility conditions for nitrate show a persistent downward trend for the last six 5-year periods and are below the glidepath for nitrate for the last four 5-year periods. Progress Report, Figures 4-14 and 4-15; and Figure 3, below. Five-year averages of annual worst days visibility conditions for sulfate show a persistent downward trend consistent with the sulfate glidepath for the last seven 5-year periods, although the averages are above the glidepath. Significantly, three of the last six annual averages are on or below the glidepath for sulfate. Progress Report, Figures 4-12 and 4-13; and Figure 3, below. Trend analysis of the 2000 to 2012 nitrate and sulfate annual extinction values demonstrates that the slopes of the trend lines are comparable to (sulfate) or better than (nitrate) the speciated glide slopes for Jarbidge WA from baseline to natural conditions. Progress Report, Section 4.6.

The NGO comments suggest in several places that the significant emissions reductions achieved by Nevada do not equate to visibility improvement at both the Jarbidge WA as well as out-of-state Class I areas, but fail to present any hard data to substantiate these suggestions. The NDEP presents evidence to the contrary in our responses below. The 2018 regional haze SIP revisions are expected

[1] The NDEP calculated Nevada's contributions to visibility impairment at the Jarbidge WA using: 1) the monitoring data for sulfate and nitrate from JARB1; and 2) the WRAP's nitrate and sulfate source appointment modeling results for JARB1. The speciated contribution to the monitored light extinction was multiplied by Nevada's percent contribution according to the source apportionment modeling to calculate Nevada's contribution to sulfate and nitrate light extinction at JARB1. Essentially, Nevada's point sources contribute a percentage of a percentage.

to be supported by RPO modeling that will demonstrate how emissions reductions impact visibility impairment and will be the basis to further evaluate reasonable progress goals for the Jarbidge WA and impacts on out-of-state Class I areas.

In addition, the USEPA is proceeding with guidance and potential rule changes for the regional haze SIPs due in 2018. There are indications[2] the guidance and rule changes may include revisions to the four-factor analysis requirement and setting reasonable progress goals based on controllable emissions. There may also be consideration of a revised regional haze metric to replace the current metric of the deciview glidepath, as well as reconsideration of what natural conditions represent.

Specific Comments

NGO Comment 1: *NDEP Must Revise Its Reasonable Progress Goal for Jarbidge Wilderness to Be Based on the WRAP's Revised Modeling with its 2018 PRPB Emissions Projections.*

The NGOs support this comment with observations that Nevada's reasonable progress goal is based on modeling subsequently found to be in error and based on outdated 2018 emission projections. They further contend that emissions reductions in Nevada have not been demonstrated to impact or improve visibility at the Jarbidge WA, and the 2018 projected emission inventory does not include emissions for oil and gas development.

NDEP Response:

Page 1-6 of the Progress Report discusses Nevada's rationale for retaining its 2018 reasonable progress goal in light of the corrected modeling results noted by the NGO comments. The NDEP evaluated the status of control measures included in the 2009 RH SIP and changes in source activity that have occurred since then that would affect emissions included in corrected modeling. The NDEP presents evidence not only of emissions reductions from the control measures included in the 2009 RH SIP, but also further reductions from the full implementation of best available control technology (BART) and new state legislation. The NDEP notes the 2018 emissions projections included a large power plant that has since been decommissioned and three proposed power projects that are no longer viable. The Progress Report presents evidence that 2008 emissions from anthropogenic sources in Nevada are less than the 2018 emissions projections used by the WRAP in the 2018 visibility modeling. Based on these lines of evidence, the NDEP concluded that it was appropriate to retain the reasonable progress goal of 11.05 deciviews. The NDEP responds to the four components of this NGO comment below.

Modeling Error Assessment

Nevada's reasonable progress goal is based on the visibility modeling results as captured by the Plan02d and PRP18a emission inventories, which provided the best available information at the time the 2009 RH SIP was prepared and will be referred to as the original visibility modeling results in the discussion below. Note to Readers, 2009 RH SIP preface (noting cutoff date of January 5,

[2] National Association of Clean Air Agencies, Criteria Pollutants Committee September 24, 2014 conference call, agenda item 6 briefing by Rhea Jones, Group Leader, Geographic Strategies Group, Air Quality Policy Division. See also *Inside EPA's Clean Air Report*, November 6, 2014, page 16.

2009). Modeling results from the PRP18b emission inventory were not available until after this cutoff date. As noted in the NGO comments, the WRAP memorandum describing the modeling error was released in April 2011, a year and a half after Nevada submitted its initial regional haze SIP. Therefore, results based on PRP18b and the corrected modeling results were not evaluated for Nevada's original regional haze SIP.

In response to this comment, the NDEP evaluated how the visibility modeling results for the Jarbidge WA changed based on use of: 1) the corrected modeling, which is identified as modeling scenario Plan02d_rev, and 2) a second revision to the 2018 emissions inventory projections for point and area sources (or updated modeling) in the WRAP region identified as modeling scenario PRP18b. Table 1 presents the modeling results for the original visibility modeling, the corrected modeling, and the updated modeling.

Table 1. Comparison of Visibility Modeling Results for the Jarbidge WA

Modeling Scenarios by Emission Inventory	Deciview (dv)	Sulfate Extinction (Mm-1)	Nitrate Extinction (Mm-1)	POM Extinction (Mm-1)	EC Extinction (Mm-1)	Soil Extinction (Mm-1)	CM Extinction (Mm-1)	Sea Salt Extinction (Mm-1)
Plan02d/PRP18a (Original)	11.05	3.34	0.70	8.24	1.12	2.29	5.47	0.06
Plan02d_rev/PRP18a (Corrected)	11.82	3.57	0.77	9.88	1.48	2.67	5.47	0.06
Difference: Plan02d_rev/PRP18a - Plan02d/PRP18a	0.77	0.22	0.07	1.64	0.36	0.38	0	0
Percent change from correction	6.9%	6.7%	10.7%	19.9%	32.1%	16.6%	0%	0%
Plan02d_rev/PRP18b (Updated)	11.82	3.64	0.76	9.85	1.47	2.64	5.47	0.06
Difference: Plan02d_rev/PRP18b - Plan02d_rev/PRP18a	0.00	0.07	-0.01	-0.04	-0.01	-0.03	0	0
Percent change from update	0.0%	1.9%	-1.8%	-0.4%	-0.5%	-1.0%	0%	0%

Table 1 shows that visibility impairment, as measured in deciviews, increased by only seven percent due to correction of the modeling error (i.e., the difference between Plan02d_rev/PRP18a and Plan02d/PRP18a), with the greatest extinction increases occurring for elemental carbon (EC) at 32 percent, nearly 20 percent for particulate organic matter (POM,) and 17 percent for soil. These increases are primarily the result of non-anthropogenic emissions. Further, visibility impairment is only slightly impacted by the emissions inventory update from PRP18a to PRB18b (i.e., the difference between Plan02d_rev/PRP18b and Plan02d_rev/PRP18a) with no change to the haze index and the minor changes to speciated extinction noted in Table 1.

Based on this evaluation of the modeling results, the NDEP concludes: 1) the corrected modeling results suggest an increase in visibility impairment at the Jarbidge WA resulting mostly from large increases in non-anthropogenic sources; and 2) modeling based on the updated 2018 emissions projections did not change the visibility impairment as measured in deciviews, and most speciated extinction values declined slightly with a slight increase in sulfate extinction. Nevada stands by its evaluation of the status of control measures included in the 2009 RH SIP and the changes that have occurred that would affect emissions included in the 2018 visibility projections, as well as its decision to retain the reasonable progress goal of 11.05 deciviews.

Emissions Projections

As noted in the NGO comments, Nevada used modeling results based on projected 2018 emissions as captured by the PRP18a inventory to identify Nevada's reasonable progress goal. Since Nevada's reasonable progress goal was based on the PRP18a inventory, it makes sense to use this inventory as a basis of comparison (Progress Report, Table 5-1) to determine the emissions reductions achieved through the implementation of the measures included in Nevada's 2009 RH SIP. The NDEP also notes that the more refined PRP18b inventory, while reducing emissions from some source categories and increasing others, does not change the modeled visibility impacts (as measured in deciviews) at the Jarbidge WA, and all speciated light extinction improves with the exception of sulfate extinction (see Table 1, above).

The NDEP notes that all emission inventories are outdated immediately upon completion due to the changing nature of sources and their emissions. The PRP18b projections are no exception and do not reflect the changes noted in the Progress Report.

Impact of Emissions Reductions on Visibility at Jarbidge WA

The NGO comments acknowledge the significant reductions of anthropogenic emissions from Nevada sources documented in the Progress Report, but suggest these reductions do not improve visibility at the Jarbidge WA (i.e., emissions reductions have "not been shown to equate to an improvement in visibility impairment at the Jarbidge Wilderness Area") (NGO comment letter, page 4). The NGO comments also suggest that projected emissions from facilities that were included in the WRAP modeling inventory (PRP18a), but ultimately were not constructed, also have not been shown to impact visibility at the Jarbidge WA because of a lack of single source visibility modeling. The NGOs do not provide any evidence to support these suggestions. The NGOs further fault the NDEP for using PRP18a emissions projections in evaluating the adequacy of its reasonable progress goal.

The NDEP disagrees with this assessment. The RHR was established to address "widespread haze from a multitude of sources which impairs visibility in every direction over a large area." 40 CFR 51.300 (a). The NDEP purports that although Nevada's point source contribution to haze at Jarbidge WA is small, the significant reductions in SO_2 and NO_x emissions during the progress period are reflected in visibility improvement at Jarbidge WA.

First, Table 1 above shows no change in visibility impairment at Jarbidge WA, as measured in deciviews, resulting from the update to the 2018 emissions projections. It shows only small decreases in the speciated light extinction, except for a slight increase in light extinction due to sulfate. The SO_2 emissions increases and NO_x decreases noted in the April 29, 2009 (revised October 16, 2009) technical memorandum from Eastern Research Group (ERG),[3] *WRAP PRP18b Emissions Inventory – Revised Point and Area Source Projections*, may account for the increase in modeled sulfate concentrations and the decrease in modeled nitrate concentrations at the Jarbidge

[3] *WRAP PRP18b Emissions Inventory – Revised Point and Area Source Projections.* April 29, 2009 (Revised October 16, 2009). Technical Memorandum from Marty Wolf and Paula Fields, Eastern Research Group, to the WRAP staff. http://www.wrapair.org/forums/ssjf/documents/Pivot_Tables/PRP18b/Final_PRP18b_point_area_source_memo_erg_101609_revised.pdf (last viewed 11/5/2014)

WA. Table 8e of the ERG memorandum shows an increase in Nevada SO_2 point source emissions of 13,532 tons per year from the PRP18a to PRP18b inventories, as well as a decrease of 8,876 tons per year of NO_x point source emissions. Table 9e shows no changes to the area source inventory for NO_x or SO_2, indicating that all of the changes in model results are due to changes in the point source inventory.

The NDEP notes that the emissions changes between PRP18a and PRP18b may not reflect actual changes in facility emissions. The changes were made to address certain changes in projections and corrections that were identified since the January 2007 revision to the 2018 projection inventory.[4] Note that many of the facilities or units at the facilities listed below were not built, have been or are scheduled to be shut down, or will be converted from coal-fired to natural gas before 2018. For example, the Ely Energy Center, Toquop and the White Pine Energy Center all modeled with increases in NO_x and SO_2 in the PRP18b update, however, none of those facilities were permitted; therefore, the projected increases in emissions are unreal. Progress Report, pages 2-7, 2-8 and 3-3, 3-4. In addition, the NO_x and SO_2 decreases for Mohave are underestimates, because they are based on BART limits, whereas the facility was actually shut down at the end of 2005.

Nevertheless, the data demonstrate that changes in Nevada's point source inventory do impact Jarbidge WA. The data in Tables 5 and 6 of the ERG memorandum show increases in SO_2 emissions and significant decreases in NO_x from Reid Gardner, Fort Churchill, and Tracy, as well as large reductions in NO_x and SO_2 from Mohave, as a result of updates to BART. Additional documentation of the inventory changes between the PRP18a and PRP18b inventories is presented in the Nevada – Point Sources table, which incorporates the changes noted in tables 5 and 6, in Attachment 1 of the ERG memorandum. The Nevada – Point Sources table shows:

- NO_x and SO_2 increases for Ely Energy Center, Toquop, TS Power (Newmont Nevada Energy Investment), North Valmy, and White Pine Energy Center;
- NO_x increases for Graymont Western and Nevada Cement;
- SO_2 increases at Reid Gardner;
- NO_x and SO_2 decreases for Mohave; and
- NO_x decreases for Reid Gardner, Fort Churchill, and Tracy.

These data and the data in Table 1 of this response suggest that emissions reductions from facilities across the state, including those in southern Nevada, do contribute to visibility improvement at the Jarbidge WA, since approximately half of the listed facilities are not located in northern Nevada.

The WRAP conducted source apportionment modeling that included regional contributions to modeled sulfate and nitrate concentrations at the Jarbidge WA, including emissions from all Nevada point sources. The percent contribution to modeled sulfate on the worst 20 percent visibility days by region and source category is presented in Table 2, while the contribution to modeled nitrate for the worst 20 percent visibility days is presented in Table 3. Tables 2 and 3 show Nevada's point source emissions contribute 2.7 percent and 3.5 percent to the total modeled sulfate concentration in 2002 and 2018, respectively, and 3.9 percent and 6.3 percent to the total modeled nitrate

[4] See supra n.3.

concentration in 2002 and 2018, respectively.[5] Recalling that light extinction due to sulfate accounts for approximately 15 percent and nitrate for 3.5 percent of total light extinction on worst days at Jarbidge WA (Progress Report, Table 4-4, 2008-2012 5-year average), overall contributions by Nevada point sources to worst days visibility impairment is about 0.5 percent and 0.2 percent for sulfate and nitrate, respectively.[6] The NDEP contends that the large reductions in point source emissions of SO_2 and NO_x during the progress period do contribute to visibility improvement at the Jarbidge WA; however, Nevada's overall point source contribution to light extinction at Jarbidge WA is small, while other source category contributions have a larger impact. Clearly, emissions from the North Valmy Generating Station are not a significant source of visibility impairment at the Jarbidge WA.

Table 2. Percentage Contribution to Modeled Worst Days Sulfate Concentration at the Jarbidge WA by Source Region and Category for 2002 (plan02c) and 2018 (base18b)

	Point	Anthro Fire	Mobile	Natural Fires and Biogenics	Area	Total
2002						
Canada	2.3%	0%	0.2%	0%	1.9%	4.3%
Central US	1.5%	0%	0.2%	0%	0.2%	1.9%
Eastern US	2.6%	0%	0%	0%	0.2%	2.8%
Mexico	2.1%	0%	0%	0%	0.4%	2.6%
Outside Domain*	n/a	n/a	n/a	n/a	n/a	41.8%
Pacific Offshore	0.8%	0%	0.4%	0%	5.3%	6.6%
WRAP	18.8%	0.5%	6.4%	10.1%	4.3%	39.9%
WRAP States						
AZ	0.6%	0%	0.1%	0%	0%	0.7%
CA	2.1%	0%	0.6%	1.3%	0.6%	4.6%
CO	0.4%	0%	0%	0%	0.0%	0.4%
ID	2.3%	0.1%	1.1%	5.1%	0.9%	9.5%
MT	0.1%	0%	0.1%	0%	0.1%	0.3%
NV	**2.7%**	**0%**	**0.3%**	**0.9%**	**0.6%**	**4.5%**
NM	0.3%	0%	0%	0%	0%	0.4%
ND	0.1%	0%	0%	0%	0%	0.1%
OR	2.9%	0.2%	1.5%	2.1%	1.0%	7.7%
SD	0%	0%	0%	0%	0%	0%
UT	1.0%	0%	0.4%	0.1%	0.1%	1.6%
WA	5.4%	0.1%	2.1%	0.1%	0.8%	8.6%

[5] To replicate the data in Tables 2 and 3, enter the TSS website at http://vista.cira.colostate.edu/TSS/. Under the "Resources" tab on the left select: Haze Planning. On the map select the Jarbidge WA, then click on "Emissions and Source Apportionment". Under the "Source Apportionment Results" select "Sulfate/SOx Tracer – All Source Regions". Here you can switch between Nitrate/NOx and Sulfate/SOx "parameter choices. Narrow the selection to Nevada. The data can then be expanded below the figure under "Show Data."

[6] See supra n.1.

	Point	Anthro Fire	Mobile	Natural Fires and Biogenics	Area	Total
WY	1.0%	0%	0%	0.3%	0.1%	1.5%
2018						
Canada	2.4%	0%	0.2%	0%	2.0%	4.3%
Central US	1.2%	0%	0%	0%	0.2%	1.4%
Eastern US	1.2%	0%	0%	0%	0.2%	1.4%
Mexico	2.2%	0%	0%	0%	0.6%	2.8%
Outside Domain*	n/a	n/a	n/a	n/a	n/a	43.8%
Pacific Offshore	1.0%	0%	0.2%	0%	5.5%	6.9%
WRAP	22.3%	0.3%	1.4%	10.5%	4.9%	39.4%
WRAP States						
AZ	0.7%	0%	0%	0%	0%	0.7%
CA	2.5%	0%	0.4%	1.4%	0.7%	5.0%
CO	0.3%	0%	0%	0%	0%	0.3%
ID	3.6%	0.1%	0.3%	5.3%	1.0%	10.3%
MT	0.2%	0%	0%	0%	0.1%	0.3%
NV	**3.5%**	**0%**	**0.1%**	**1.0%**	**0.8%**	**5.4%**
NM	0.3%	0%	0%	0%	0.1%	0.4%
ND	0.1%	0%	0%	0%	0%	0.1%
OR	3.7%	0.1%	0.2%	2.2%	0.9%	7.2%
SD	0%	0%	0%	0%	0%	0%
UT	1.5%	0%	0.1%	0.1%	0.1%	1.8%
WA	4.5%	0%	0.2%	0.1%	1.0%	5.9%
WY	1.5%	0%	0%	0.3%	0.1%	2.0%

* n/a means not available
Source: http://vista.cira.colostate.edu/tss/, last viewed 11/07/2014

Table 3. Percentage Contribution to Modeled Worst Days Nitrate Concentration at the Jarbidge WA by Source Region and Category for 2002 (plan02c) and 2018 (base18b)

	Point	Anthro Fire	Mobile	Natural Fires and Biogenics	Area	Total
2002						
Canada	0.3%	0%	1.0%	0%	0.3%	1.9%
Central US	0%	0%	0%	0%	0%	0%
Eastern US	0%	0%	0%	0%	0%	0%
Mexico	0%	0%	0%	0%	0%	0%
Outside Domain*	n/a	n/a	n/a	n/a	n/a	20.8%
Pacific Offshore	0%	0%	0.3%	0%	0.6%	1.0%
WRAP	13.1%	1.5%	43.2%	8.2%	10.2%	76.3%

	Point	Anthro Fire	Mobile	Natural Fires and Biogenics	Area	Total
WRAP States						
AZ	0%	0%	0.1%	0%	0%	0.2%
CA	0.6%	0.1%	5.3%	0.5%	0.9%	7.3%
CO	0%	0%	0%	0%	0%	0%
ID	3.2%	0.3%	16.1%	3.9%	8.2%	31.7%
MT	0.1%	0%	0.3%	0.1%	0%	0.5%
NV	**3.9%**	**0%**	**6.0%**	**1.6%**	**0.2%**	**11.6%**
NM	0%	0%	0%	0%	0%	0.1%
ND	0%	0%	0%	0%	0%	0%
OR	0.8%	0.4%	3.0%	0.7%	0.2%	5.1%
SD	0%	0%	0%	0%	0%	0%
UT	4.0%	0%	7.8%	0.6%	0.3%	12.8%
WA	0.4%	0.6%	4.6%	0.8%	0.3%	6.7%
WY	0.1%	0%	0.1%	0%	0%	0.2%
2018						
Canada	0.4%	0%	1.3%	0%	0.4%	2.1%
Central US	0%	0%	0%	0%	0%	0%
Eastern US	0%	0%	0%	0%	0%	0%
Mexico	0%	0%	0%	0%	0%	0%
Outside Domain*	n/a	n/a	n/a	n/a	n/a	27.5%
Pacific Offshore	0%	0%	0%	0%	0.8%	1.3%
WRAP	18.9%	0.9%	23.2%	9.5%	16.5%	69.2%
WRAP States						
AZ	0.1%	0%	0.1%	0%	0%	0.2%
CA	0.8%	0.1%	2.6%	0.6%	1.0%	5.1%
CO	0%	0%	0%	0%	0%	0%
ID	4.6%	0.2%	7.4%	4.5%	13.6%	30.3%
MT	0.1%	0%	0.2%	0.1%	0%	0.4%
NV	**6.3%**	**0%**	**4.5%**	**1.9%**	**0.3%**	**13.1%**
NM	0%	0%	0%	0%	0%	0.1%
ND	0%	0%	0%	0%	0%	0%
OR	1.2%	0.4%	1.9%	0.8%	0.3%	4.6%
SD	0%	0%	0%	0%	0%	0%
UT	5.0%	0%	4.3%	0.8%	0.6%	10.6%
WA	0.6%	0.3%	2.2%	0.9%	0.4%	4.4%
WY	0.1%	0%	0%	0%	0.1%	0.3%

* n/a means not available
Source: http://vista.cira.colostate.edu/tss/, last viewed 11/07/2014

Failure to Include Emissions from Oil and Gas Development

The NGO comments contend that emissions resulting from oil and gas development were included in the 2002 inventory for Nevada, but Nevada did not report oil and gas emissions for 2008 and the assumption of zero emissions for 2008 is at odds with publicly reported information. In fact, Nevada did not report oil and gas emissions in either 2002 or 2008. Sections 5.3 and 5.4 of the Progress Report have been revised to make this clear. Like many other states, Nevada does not report oil and gas emissions directly to the NEI, relying on USEPA for this portion of the area source inventory in the NEI.

The fact that Nevada did not report oil and gas emissions does not necessarily mean that there were no estimates. The NDEP notes that emissions resulting from oil and gas development were projected for Nevada's PRP18a inventory (2009 RH SIP, Tables 3-7, 3-8, and 3-9) and, therefore, incorporated in Nevada's reasonable progress goal. For the 2002 baseline inventory, the WRAP built on the 2002 NEI and developed a robust inventory that included oil and gas emissions estimates for Nevada. For the WestJump2008 inventory, the WRAP built on the 2008 NEI. Although the WRAP developed robust oil and gas inventories for other areas within the WRAP region, it did not conduct the same for Nevada. Progress Report, Sections 5.3 and 5.4. Nonetheless, such emissions must be put into perspective: in 2002 only 63 tons per year (tpy) of NO_x and 129 tpy of VOC emissions were reported compared to a state-wide 2002 inventory of 162,397 tpy of NO_x and 897,102 tpy VOC and the state-wide 2008 inventory of 118,766 tpy NO_x and 351,142 tpy VOC. Progress Report, Table 5-7 and Table 5-10.

The NDEP is aware of the limited oil and gas exploration efforts in northeastern Nevada to assess potential targets suitable for enhanced oil recovery methods such as fracking (see BLM Environmental Assessment for Huntington Valley Oil and Gas Exploration Project DOI-BLM-NV-E020-2014-0003-EA). In Nevada, oil and gas development and production, as reflected by rig counts, is either declining or steady. Table 4 shows annual average rig counts by state from 2000 to 2013 and demonstrates that Nevada is not experiencing any sort of oil and gas development boom as are some western states such as North Dakota or Utah. Figure 1 shows a steady decline in Nevada's oil and gas production from 1990 to 2013. These data suggest that oil and gas development and production is not a significant activity in Nevada. The NDEP notes that oil and gas development and production in Nevada is currently subject to permitting requirements.

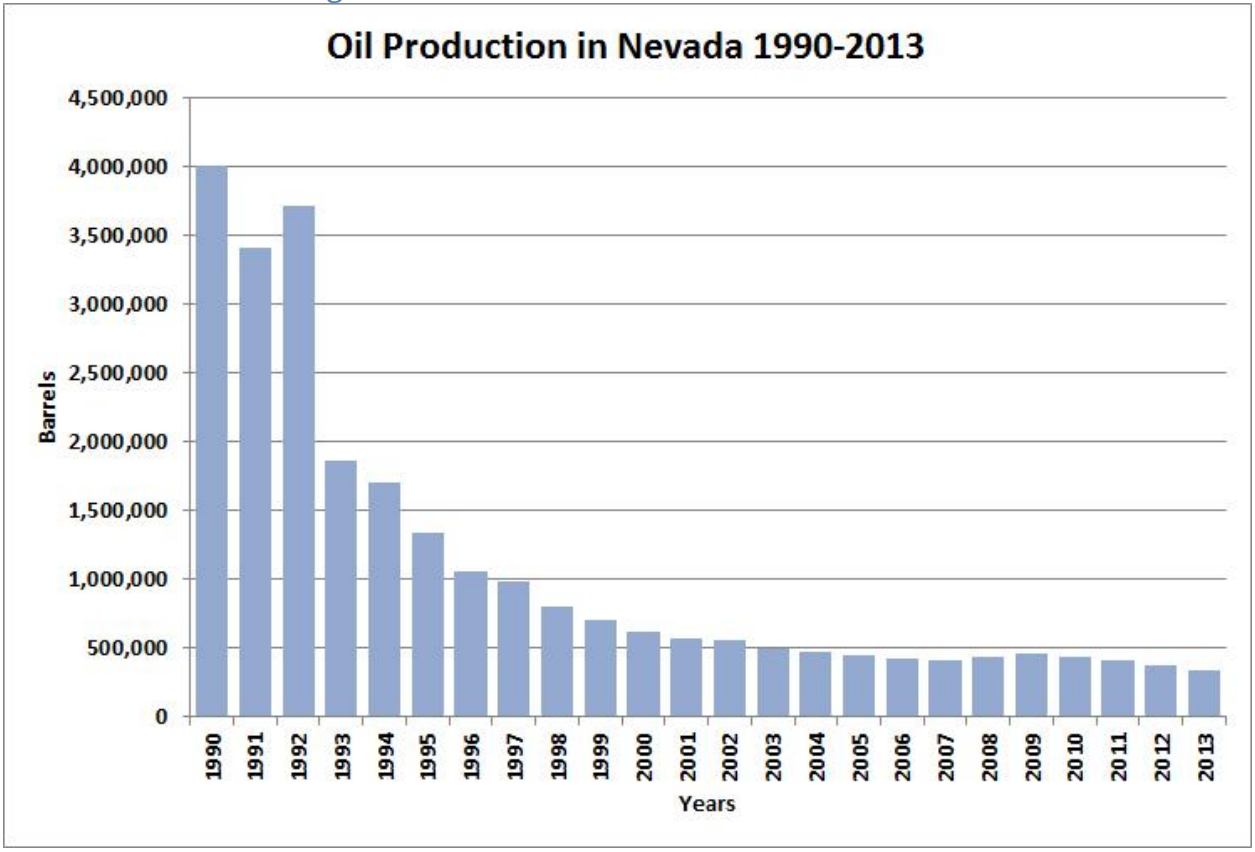
Table 4. Baker Hughes Rotary Rig Count Annual Averages by State[9]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Colorado	18	32	28	39	54	74	89	107	114	50	58	72	65	63
Montana	7	10	8	14	20	24	22	17	11	3	7	9	20	12
Nevada	0	0	0	1	2	2	1	2	3	3	6	3	1	3
New Mexico	68	68	42	65	67	83	94	78	78	44	62	79	84	77
N Dakota	13	14	10	14	15	21	32	39	68	50	114	168	188	173

[9] Modified from information downloaded from http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother on October 23, 2014.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Utah	16	21	13	14	22	28	40	42	42	18	27	28	37	29
Wyoming	41	55	40	54	74	78	99	74	74	40	40	48	47	48

Figure 1. Oil Production in Nevada 1990 to 2013.[10]



The NDEP considered the applicable RHR requirements and available data in reaching the conclusion to retain the reasonable progress goal of 11.05 deciviews for the Jarbidge WA. The NDEP acknowledges the modeling error, but notes the update to the emission inventory demonstrates that state-wide reductions in Nevada point source emissions have reduced visibility impairment at the Jarbidge WA. Emissions from Nevada's oil and gas development are not a significant emissions source and are not likely to have significant influence on visibility at the Jarbidge WA. Nevada stands by its conclusion to retain the reasonable progress goal of 11.05 deciviews.

The only change made to the Progress Report based on this NGO comment was to clarify the discussion of oil and gas emissions reporting, as noted above.

[10] Figure downloaded from http://minerals.nv.gov/uploadedImages/mineralsnvgov/content/Programs/Oil_and_Gas/OilProdInNV1990-2013.jpg October 23, 2014

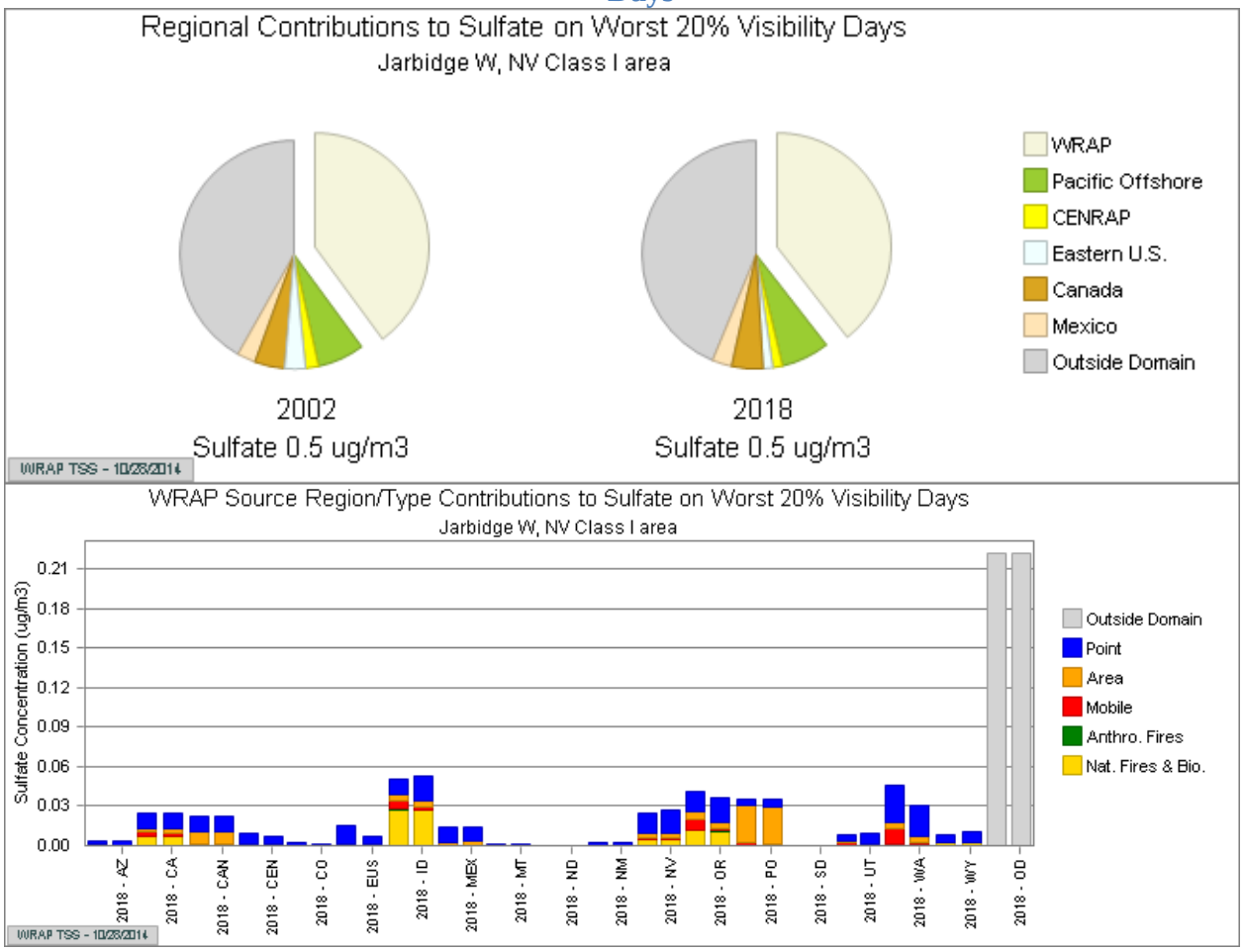
NGO Comment 2: *NDEP Must Consider and Evaluate Reasonable Progress Measures for the Jarbidge Wilderness and Other Class I Areas Impacted by Nevada Sources.*

This NGO comment hinges on the opening statement that the NDEP must find its implementation plan "is or may not be adequate to ensure reasonable progress due to emissions from sources within the State." NGO comment letter, page 6. The NGOs suggest that NO_x and SO_2 emissions from Nevada point sources have significant contributions to visibility impairment at the Jarbidge WA and that Nevada should consider emission control requirements for the North Valmy Generating Station as well as potential visibility impacts from oil and gas development in Nevada.

NDEP Response: The NDEP maintains Nevada's implementation plan is adequate to ensure reasonable progress due to emissions from sources within the State. Nevada's initial regional haze progress report focuses on controllable anthropogenic emission sources. The Progress Report documents progress for the first five years of a 60-year planning horizon and not all controls identified in the State's 2009 RH SIP have been implemented because they are not required to do so until 2015 (Progress Report, Section 2.5.2). Furthermore, the majority of visibility impairing emission sources at the Jarbidge WA are out of Nevada's jurisdiction (Progress Report, Section 4.4 and 2009 RH SIP, Section 4.3). Long-term monitored light extinction trends are either better than or comparable to the speciated glide slopes for nitrate and sulfate (Progress Report, Section 4.6). Finally, the 5-year annual average nitrate extinction on the worst days is below the nitrate glide slope, and there is no degradation of visibility resulting from nitrate or sulfate on the best days.

<u>Nevada Point Source Contributions to Visibility Impairment</u>
Emissions from outside of Nevada contribute more to visibility impairment at Jarbidge WA than Nevada point sources. The sulfate modeling results for Nevada's point sources are presented graphically in Figure 2. Coupled with the information presented in Table 2, the data show that for 2002, Canada, Eastern US, Pacific Offshore, and Outside Domain each contribute more to modeled worst days sulfate concentrations at the Jarbidge WA than do emissions from Nevada point sources. Similarly, point sources in Oregon and Washington contribute more than Nevada point sources, while point sources in Idaho contribute nearly as much. When total state-wide emissions are considered, California, Idaho, Oregon and Washington all contribute more to modeled sulfate concentrations at Jarbidge than do Nevada's state-wide emissions.

Figure 2. Contributions to Modeled Sulfate Concentrations at the Jarbidge WA on the Worst Days



For 2018, a similar situation exists. Emissions from Canada, Pacific Offshore and Outside Domain each contribute more to the modeled worst days sulfate concentration than emissions from Nevada point sources, as do point sources in Idaho, Oregon, and Washington. When state-wide emissions are considered, Idaho, Oregon, and Washington each contribute more than Nevada's state-wide emissions with California contributing nearly as much as Nevada. The source apportionment modeling supports Nevada's conclusion that the IMPROVE monitor for the Jarbidge WA is "likely more strongly impacted by emissions originated from with the Snake River Basin than those emitted from within the Great Basin" (Progress Report, page 9-3) and emissions from sources within the State are not impeding reasonable progress at the Jarbidge WA. As noted in the NDEP's response to the NGO comment 1, emissions from the North Valmy Generating Station are clearly not a significant source of visibility impairment at the Jarbidge WA.

Emissions from Outside Domain and Pacific Offshore contribute approximately 50 percent of modeled sulfate at Jarbidge with all sources outside of the WRAP contributing approximately 60 percent of modeled concentration. WRAP states, excluding Nevada, contribute approximately 35 percent. The source apportionment modeling demonstrates the majority of emission sources

contributing to sulfate visibility impairment at Jarbidge are outside the jurisdiction of Nevada or its WRAP co-regulators. As noted in Section 4.6 of the Progress Report, monitored sulfate extinction for the worst days at the Jarbidge WA is trending downward, both on an annual and five-year average basis.

The NDEP is unsure why the NGOs commented on nitrate extinction at Jarbidge WA and the need for further emission controls when, as shown by Figure 3, five-year rolling averages of worst days nitrate extinction for the last 4 years (2006-2010, 2007-2011, 2008-2012, and 2009-2013) are below the nitrate glideslope. Figure 4 graphically shows the contributions to modeled worst days nitrate concentrations at Jarbidge WA. Regarding the NGO comments about Nevada's contributions to the best days, there is no degradation in visibility resulting from sulfate or nitrate for the least impaired (best) days at the Jarbidge WA over the current planning period (Figure 5).

Figure 3. Baseline and Five-Year Rolling Averages of Worst Days Sulfate and Nitrate Light Extinction at the Jarbidge WA.

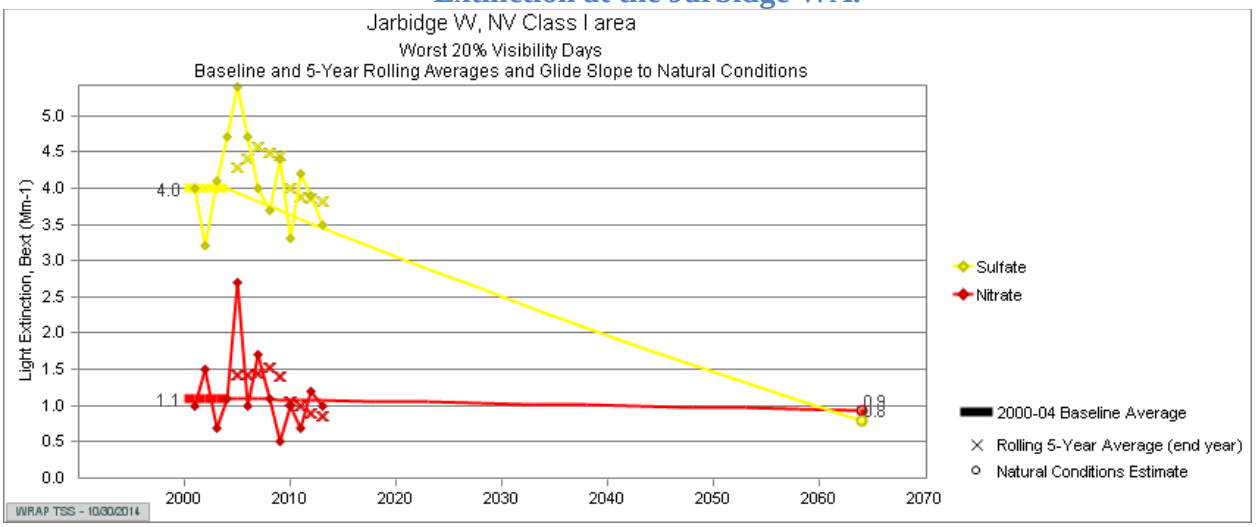


Figure 4. Contributions to Modeled Nitrate Concentrations at the Jarbidge WA on the Worst Days

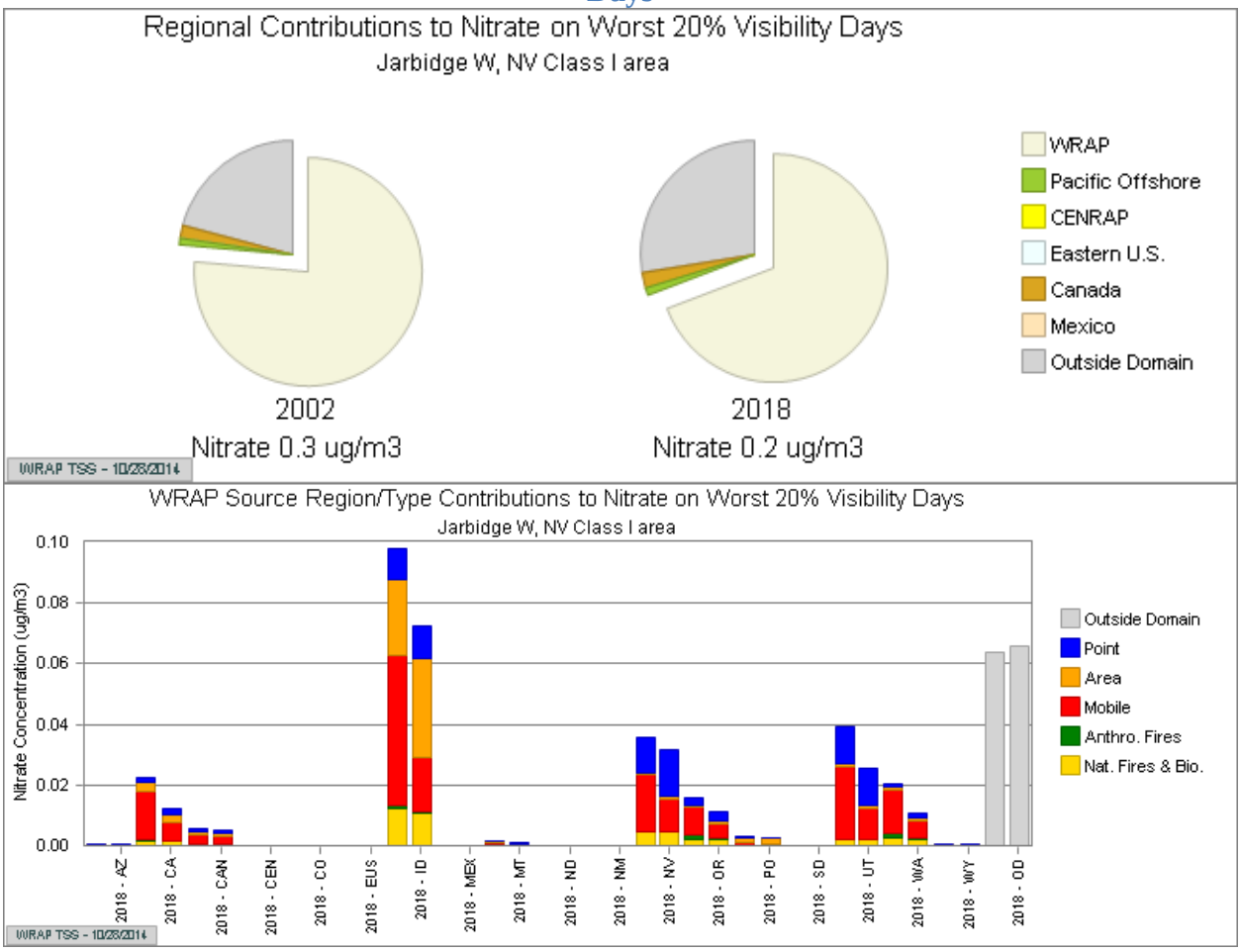
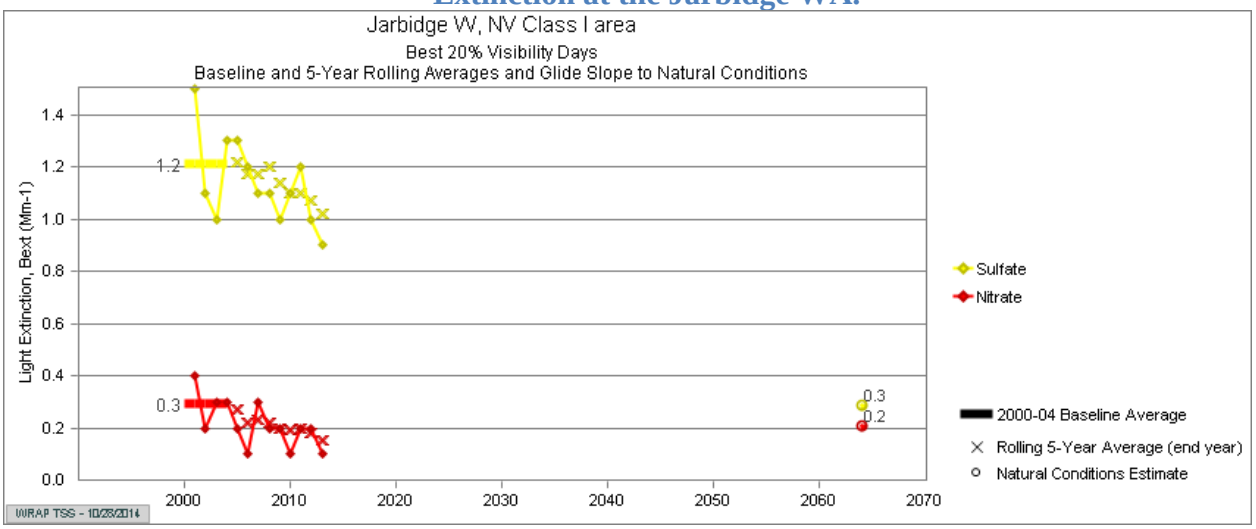


Figure 5. Baseline and Five-Year Rolling Averages of Best Days Sulfate and Nitrate Light Extinction at the Jarbidge WA.



Consideration of Emissions from Oil and Gas Development

The NGO comments state Nevada must consider emissions from oil and gas development and the potential visibility impact, using information from a couple of newspaper articles to suggest oil development could be increasing, as it has in recent years in Utah. However, as discussed under the first NGO comment, the data in Table 4 shows that oil and gas development in Nevada has a considerably slower pace than other oil and gas areas in the western US, and the data in Figure 1 show that Nevada's oil production has been in a state of steady decline since the 1990s. The NDEP continues to monitor the pace of oil and gas development in Nevada and will evaluate emissions sources resulting from increased activity as warranted. However, given the very limited oil and gas activity to date, implementation of additional emission controls on this sector at this time would be premature.

Nevada's 2009 RH SIP focused on impairment resulting from Nevada's anthropogenic emissions of SO_2 and NO_x, the precursors of sulfate and nitrate, respectively. Source apportionment modeling demonstrates Nevada emissions do not make a large contribution to overall visibility impairment at Jarbidge WA. The bulk of impairment results from emissions beyond Nevada's jurisdiction. Monitoring data show that the Jarbidge WA is achieving levels of improvement in visibility impairment necessary to achieve natural background conditions by 2064 for impairment resulting from nitrate and sulfate extinction in this first 5-year planning period. To the extent that SO_2 and NO_x emissions from point sources in Nevada contribute to visibility impairment at Jarbidge WA, Nevada's progress report documents significant SO_2 and NO_x emissions reductions from sources within the State (see Table 5-1 of the Progress Report).

In summary, the NDEP has fully justified Nevada's negative declaration (i.e., emissions from sources within the State are not preventing Nevada from achieving its reasonable progress goal) and deems its 2009 RH SIP adequate to ensure reasonable progress towards the national visibility goal for sulfate and nitrate resulting from anthropogenic emissions.

No changes were made to the Progress Report as a result of this NGO comment.

NGO Comment 3: *NDEP Must Revise Its Assessment of Contribution to Visibility Impairment at Class I Areas Impacted by its Sources to Be Based on the WRAP's Revised Modeling with its 2018 PRPb Emissions Projections.*

This NGO comment contends that Nevada's assessment of its sources' impacts on Class I areas outside Nevada is based on erroneous source appointment modeling, which in turn is based on an outdated PRP18a emissions projection. The NGO comments go on to suggest that Nevada's conclusions regarding emissions reductions should be informed not by the 2008 inventory data, but by the 2011 NEI and more recent CAMD data. Further, the NGO comments suggest that emissions reductions in Nevada may not account for Nevada's portion of impairment in some Class I areas, and Nevada must revise its analysis of Nevada's impacts on out-of-state Class I areas.

NDEP Response: A comprehensive review of the Nevada regional haze SIP and Progress Report and the WRAP's modeling efforts that supported Nevada's regional haze submissions belie this comment.

Modeling Assessment

Table 4-3 and Table 4-4 of the 2009 RH SIP present Nevada's contributions to light extinction at Class I areas in the five states adjacent to Nevada based on the WRAP's source apportionment modeling. Sections 1.3.2.2, 1.3.3.2 and 4.3 of the 2009 RH SIP describe the modeling framework and emissions scenarios utilized for this modeling effort by the WRAP, which relied on the Plan02c and Base18b emission inventories. To the NDEP's knowledge, there has been no indication by any party that this source apportionment modeling is erroneous or not fully acceptable. This is the most comprehensive and current regional haze source apportionment data available for the WRAP region.

Table 7-6 of the 2009 RH SIP provides a summary of visibility impairment at nearby Class I areas and Nevada's emissions reductions, which the NGO comments suggest is based on erroneous modeling. However, as noted in Section 7.9.3.2 of the 2009 RH SIP, the information in the table is based on monitored baseline light extinction (2000-2004), the uniform rate of progress for 2018 (i.e., the glideslope value for 2018), and Nevada's contributions to sulfate and nitrate based on the WRAP's source apportionment modeling. Nevada's emission reduction share is calculated by multiplying the extinction reduction needed at any given Class I area by the 2018 pollutant contribution by Nevada. Nevada's share is independent of the WRAP's corrected visibility modeling.

Emissions Assessment

The NGOs suggest that the analysis should be informed by 2011 NEI data and recent CAMD data, but later acknowledge that the NDEP did present and evaluate both 2011 NEI and CAMD data through 2013. Tables 5-5 and 5-7 of the Progress Report compare 2002 baseline emissions as represented by the Plan02d inventory and 2008 progress period emissions as represented by WestJump2008. However, Tables 5-6 and 5-8 present 2011 NEI data from the major anthropogenic source categories (point, on-road mobile and off-road mobile) and show further reductions in SO_2 and NO_x emissions from 2008 to 2011. In addition, Table 3-2 and Figure 3-1 of the report present CAMD data through 2013 for annual EGU emissions. Figures 3-2 through 3-7 present SO_2 and NO_x CAMD data for specific EGUs through 2013. The 2011 NEI and recent CAMD emissions data have been evaluated by the NDEP and further support Nevada's emission reduction conclusions, contrary to statements in the NGO comments.

Out of State Impact Assessment

The NGO comments suggest that the significant emissions reductions in Nevada may not account for Nevada's portion of impairment at out-of-state Class I areas and use the Sawtooth Wilderness Area as an example. Baseline nitrate extinction at the Sawtooth Wilderness Area is better than the natural conditions estimate (0.63 Mm^{-1} for baseline and 0.65 Mm^{-1} for natural conditions), so the extinction reduction needed and Nevada's emissions reduction share are both negative in Table 7-6 of the 2009 RH SIP. The NDEP notes that Table 7-6 shows that Nevada's emission reduction share is 0.5 percent for sulfate while the difference between the Base02d and PRP18a inventories is 33.0

percent for SO_2 and 16.6 percent for NO_x. Table 5-5 of the Progress Report shows state-wide SO_2 emission reductions of 75 percent between 2002 and 2008 with additional reductions shown in Table 5-6 between 2008 and 2011. Table 5-7 shows state-wide NO_x emissions reductions of 26 percent between 2002 and 2008, which are slightly offset by the emissions growth shown in Table 5-8 between 2008 and 2011. The percentage reductions in Nevada's NO_x and SO_2 emissions are much greater than Nevada's emissions reduction share presented in Table 7-6 of the 2009 RH SIP.

Figure 6 below shows the annual worst days monitoring data for the Sawtooth Wilderness Area with 5-year rolling averages, natural conditions, and the glideslopes for each species. This figure demonstrates that visibility impairment due to sulfate and nitrate are not preventing reasonable progress at the Sawtooth Wilderness Area, even though this site is not achieving the uniform rate of progress for sulfate and nitrate as shown by Figure 7. Figure 6 shows particulate organic matter (resulting from fire emissions) is the principle driver of visibility impairment at this Class I area.

Figure 6. Baseline and Five-Year Rolling Averages of Worst Days Visibility Conditions at the Sawtooth Wilderness Area.

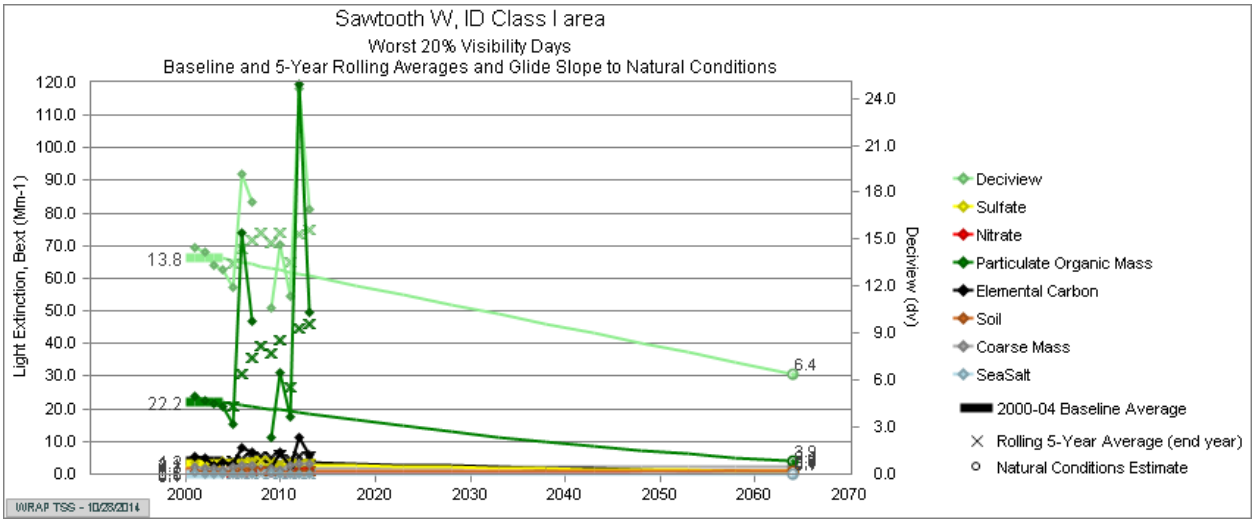


Figure 7. Baseline and Five-Year Rolling Averages of Worst Days Sulfate and Nitrate Visibility Impacts at the Sawtooth Wilderness Area.

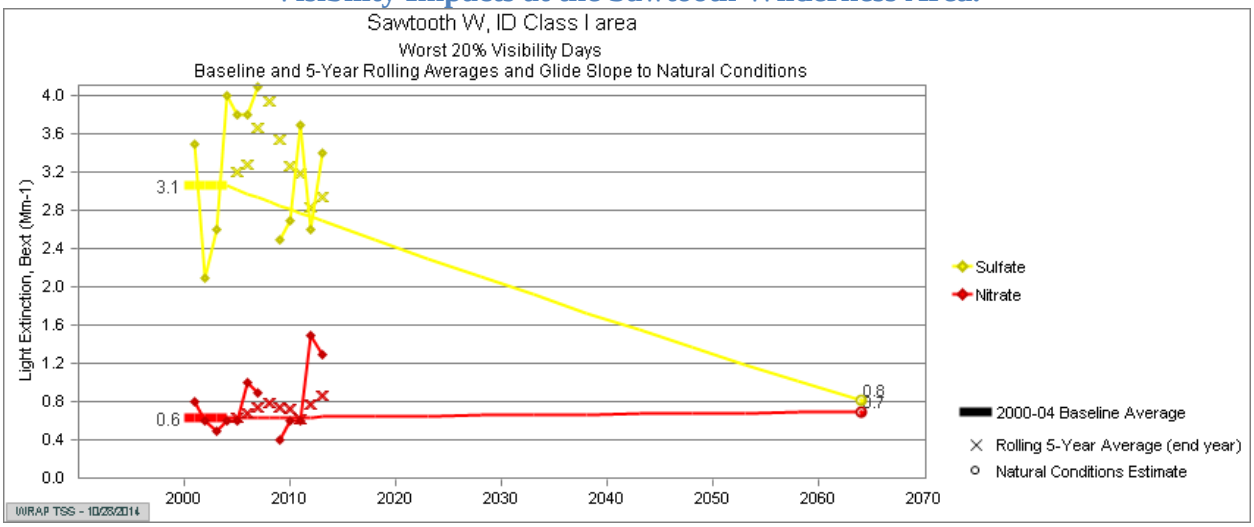


Figure 8 and Figure 9 show the regional as well as the WRAP source region and source type contributions to modeled sulfate and nitrate respectively at the Sawtooth Wilderness Area. These Figures show how little Nevada emissions sources contribute to visibility impairment at the Sawtooth Wilderness Area.

Figure 8. Contributions to Modeled Sulfate Concentrations at the Sawtooth Wilderness Area on the Worst Days

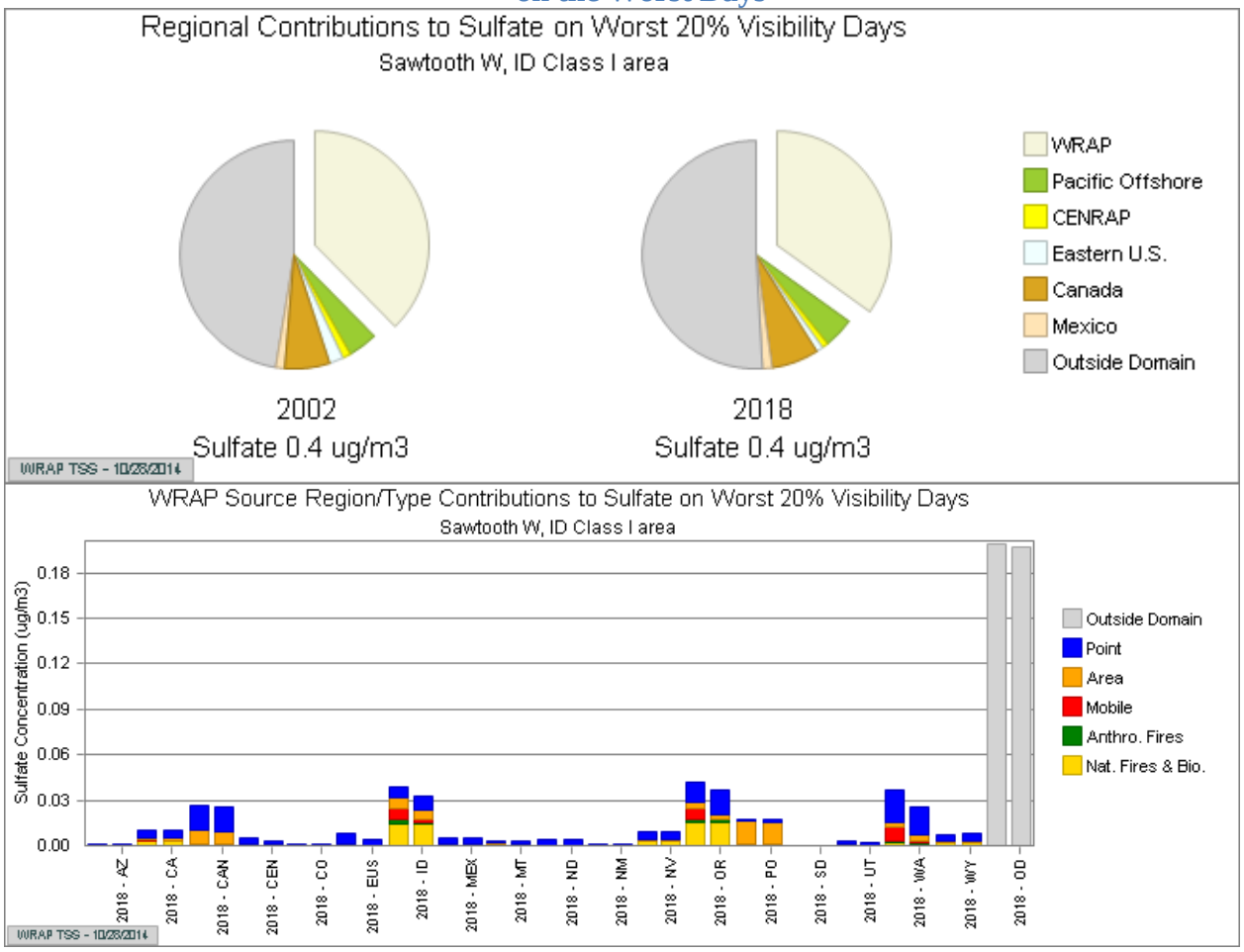
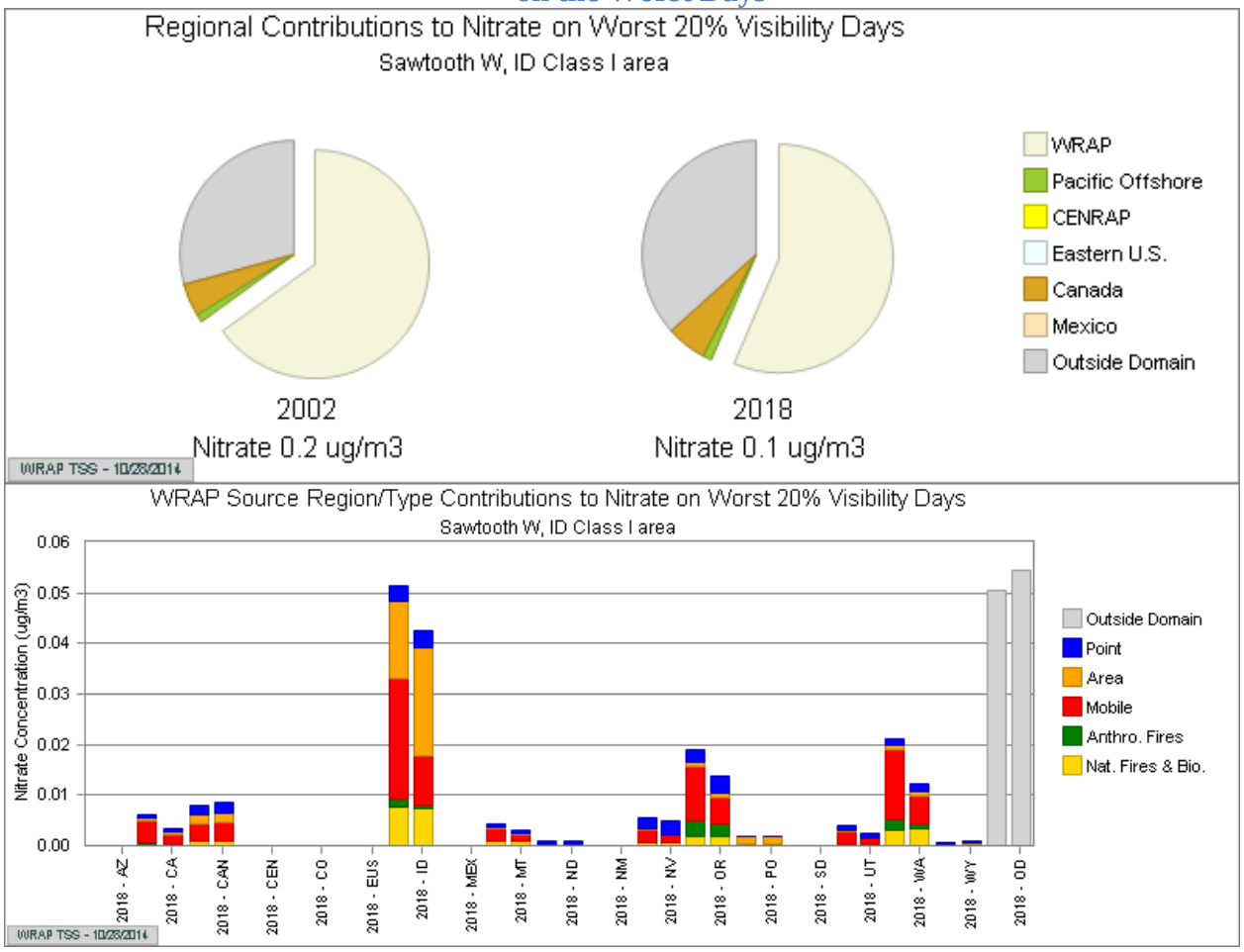


Figure 9. Contributions to Modeled Nitrate Concentrations at the Sawtooth Wilderness Area on the Worst Days



In summary, WRAP visibility modeling based on the PRP18b emission inventory has no bearing on the NDEP's assessment of Nevada's contribution to visibility impairment at Class I areas impacted by Nevada emission sources. The NDEP's emissions reductions conclusions are based on the most recent commonly available emissions data as represented by the WestJump2008, 2011 NEI, and CAMD data through 2013, as requested by the NGO comments. Nevada's emission reductions far exceed Nevada's contributions to visibility impairment at Class I areas impacted by Nevada sources. Emissions from Nevada are not impeding reasonable progress at the Sawtooth Wilderness Area or other out-of-state Class I areas.

The NDEP has not revised its determination regarding the adequacy of its plan with respect to Nevada's impacts on out-of-state Class I areas based on this comment, and no changes were made to the Progress Report.

NGO Comment 4: *NDEP Must Revise Its Proposed Progress Report to Meet §51.308(g)(2) and §51.308(g)(4).*

The NGOs comment that the Progress Report fails to detail the specific reductions achieved through the implementation of the enforceable measures required by the SIP and request that Nevada include such estimates and revise its assessment of the adequacy of its SIP on this basis. They question whether the significant decrease in SO_2 and NO_x emissions from EGUs is due to enforceable measures and point to the increase in 2013 SO_2 and NO_x emissions at Reid Gardner and NO_x emissions at Fort Churchill (Progress Report Figures 3-2, 3-3 and 3-7) as support. They further comment that the use of 2011 NEI data in Chapter Five is not a sufficient basis for evaluating the most recent emissions trends in Nevada. They request the NDEP discuss the EGU emissions from USEPA's CAMD database in Chapter Five as well as Chapter Three of the report and also use in-state inventories and Title V reporting from 2008 to at least 2012 to discuss emission trends. Finally, the NGOs suggest that to the extent the NDEP is relying on measures not included in the 2009 RH SIP to meet its reasonable progress goal, using SB 123 as an example, it should adopt those requirements as enforceable measures in its regional haze SIP.

NDEP Response: The 2009 RH SIP requires the implementation of BART as a major enforceable control measure for the first planning period, 2008 - 2018. All applicable BART requirements have been adopted and incorporated into the Nevada Administrative Code, approved by USEPA into Nevada's applicable SIP and are enforceable by the State and USEPA. Chapters Two and Three of the Progress Report discuss BART implementation. Table 2-3 of the report details the status of BART implementation in Nevada, showing that all BART control measures will be installed and operating by January 1, 2015 with the exception of NO_x controls at Reid Gardner, which has a compliance date of June 30, 2016. Thus, since the controls have not been fully implemented at this time, specific reductions are not yet fully realized. Chapter Five of the 2009 RH SIP, specifically Tables 5-4, 5-5, 5-6 and associated text, provide expected emissions reductions following full implementation of BART controls. Section 3.4.2 of the Progress Report notes that NV Energy plans to shut down Units 1 through 4 at Reid Gardner and specifies associated emissions reductions.

Chapter Three of the Progress Report discusses the most recent CAMD EGU emissions data through 2013. The fact that there is a small increase in EGU emissions from 2012 to 2013 is diminished by the overall steady decline in EGU emissions, with the exception of increased emissions at Tracy and Fort Churchill during the Energy Crisis of 2000-2001. Indeed, electrical generation demand varies across fleet facilities and could account for the increased emissions in 2013. The NDEP finds the NGOs' speculation that the miniscule increase in 2013 may indicate that the control measures included in the 2009 RH SIP may be inadequate is unsubstantiated.

Chapter Five of the Progress Report includes 2011 NEI Nevada point and mobile source emissions in Tables 5-6, 5-8, and 5-11 for SO_2, NO_x, and VOC, respectively. 2012 NEI data was not used because it only includes the larger point source data and does not include mobile source data. Thus, it would not provide a complete picture of emissions in Nevada. In addition, 2012 in-state emissions data was neither quality checked nor available at the time of preparation of the Progress Report. Thus, the WestJump2008 and 2011 NEI inventories provide the most recent data available to the NDEP at the time of the Progress Report. The next SIP submission is expected to include new modeling results using the most current available emissions data for use in assessing the adequacy of Nevada's SIP.

Lastly, the NGOs suggest Nevada adopt SB123 as an enforceable measure of its regional haze SIP. The NDEP as part of its reasonable progress update reviewed all available sources of emission reductions and planned control measures. The NDEP maintains that it is appropriate to include an assessment of the impact of all emissions reduction measures occurring since the 2009 RH SIP was adopted. The NDEP did not, however, rely on the emission reductions in SB123 in making its determination that Nevada is making adequate progress overall in improving visibility. It is unnecessary to incorporate SB123 in to the Nevada SIP.

No revisions have been made to the Progress Report as a result of this comment.

D.2.2 Sierra Club-National Parks Conservation Association Comment Letter

Nevada Environmental Protection
OCT 16 2014
BAPC/BAQP

SIERRA CLUB TOIYABE CHAPTER
P.O. Box 8096 Reno, NV 89507

NATIONAL PARKS CONSERVATION ASSOCIATION
10161 Park Run Drive, Ste. 150, Las Vegas, NV 89145

October 8, 2014

RECEIVED
ENVIRONMENTAL PROTECTION
OCT 16 2014

Adele Malone
Bureau of Air Quality Planning
Nevada Division of Environmental Protection
901 S Stewart Street, Suite 4001
Carson City, Nevada 89701

RE: Comments on the Nevada Regional Haze 5-Year Progress Report

Dear Ms. Malone,

Sierra Club and National Parks Conservation Association submit the following comments on the Nevada Regional Haze 5-Year Progress Report.

The purpose of the regional haze 5-year progress reviews is to provide an analysis of the progress made in implementing the regional haze SIP and also, if necessary, make mid-course corrections to the regional haze SIP. According to the preamble to the EPA's 1999 regional haze regulations, states may submit a negative declaration "if the state finds that the emission management measures in the SIP are being implemented on schedule, and visibility improvement appears to be consistent with reasonable progress goals." 64 Fed.Reg. 35747 (July 1, 1999). *See also* 40 C.F.R. §51.308(h)(1). The Nevada Department of Environmental Protection (NDEP) proposes such a negative declaration in its 5-Year Progress Report. *See* Section 9.1 of the proposed Nevada Regional Haze 5-Year Progress Report. However, visibility improvement at the state's only Class I area, the Jarbidge Wilderness, is not projected to improve in a manner consistent with achieving reasonable progress toward the national visibility goal of reaching natural background visibility conditions by 2064.

In making its negative declaration, NDEP relies heavily on the emission reductions that have occurred due to the shutdown of the Mohave Generating Station in 2005 and the emission reductions that will occur due to the shutdown of Reid Gardner Units 1-3 in 2014 and of Reid Gardner Unit 4 in 2017, the shutdown of Tracy Generating Station Units 1 and 2, and the BART requirements that Tracy Unit 3 and Fort Churchill Units 1 and 2 no longer burn oil by December of 2014. Sierra Club supports and applauds Nevada in its efforts to significantly reduce emissions of air pollutants with the shutdown of the large fossil-fuel fired power plants and/or the conversion to natural gas. These source shutdowns and reductions in emissions will undoubtedly provide significant visibility benefits for the Class I areas that these sources impact,

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including Grand Canyon National Parkand other Colorado Plateau national parks and wilderness areas, as well as national parks and wilderness areas like Joshua Tree National Park in eastern California. Moreover, these reductions will also benefit public health and non-Class I areas like Great Basin National Park. However, there is no modeling demonstrating whether and to what extent any of these sources have significant impacts on the Jarbidge Wilderness Area.

Further, the entire premise for NDEP's current 5-year progress evaluation for the Jarbidge Wilderness is based on a reasonable progress goal and a Nevada emissions inventory in a WRAP modeling effort that was subsequently revised and found to be in error. As noted in EPA's June 2011 proposed partial approval of the Nevada Regional Haze SIP, the WRAP issued a report in April 2011 regarding errors in its visibility projections for about 15 Class I areas in the West including the Jarbidge Wilderness in Nevada and also including Class I areas impacted by Nevada emissions including the Hells Canyon Wilderness (in Oregon and Idaho), Crater Lake National Park (in Oregon), and Domelands Wilderness (in California).[1] In approving the reasonable progress goals of the Nevada Regional Haze SIP, EPA acknowledged this error, but did not require new modeling be done by NDEP at that time. Instead, EPA stated that the 5-year progress report and adequacy determination required by 40 C.F.R. §51.308(g) and (h) would provide the opportunity to determine whether Nevada's SIP is adequately ensuring reasonable progress toward the national visibility goal. 76 Fed.Reg. 36464 (June 22, 2011) at fn 18.

As part of its 5-Year Progress Report, NDEP has proposed to find that it is not necessary to revise its reasonable progress goals. *See* Chapter 1 of the proposed Nevada Regional Haze 5-Year Progress Report at 1-6. This was based primarily on a review of the emission reductions from the control measures in Nevada's 2009 regional haze SIP, the shutdown of the Mohave Generating Station, and also from the new state legislation that will result in the shutdown of the Reid Gardner units. *Id.* However, as NDEP has acknowledged, the reduction in emissions from the southern Nevada sources (i.e., Reid Gardner and Mohave power plants) may not be reflected in visibility improvements at Jarbidge Wilderness that is in northeastern Nevada. *See* Chapter 9 of the proposed Nevada Regional Haze 5-Year Progress Report at 9-3. NDEP's basis for its finding that it does not need to revise its reasonable progress goals does not justify its proposed decision.

Although there has been some improvement in visibility in the Jarbidge Wilderness area, the IMPROVE visibility monitoring data do not show that the Jarbidge Wilderness is on the path consistent with the reasonable progress goals. *See* Chapter 4 of the Nevada Regional Haze 5-Year Progress Report. Further, EPA's guidance for the 5-year progress reviews is that negative declarations can be submitted when both visibility trends and emissions data indicate "a **significant** overall downward trend."[2] Rather than showing a significant downward trend in both emissions and visibility impairment to justify its negative declaration, NDEP focuses mainly on the planned emission reductions for sources in Nevada. *See* Chapter 9 of the

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[1] *See* April 27, 2011 Correction of WRAP region Plan02d CMAQ visibility modeling results on TSS for Regional Haze Planning, in docket for EPA rulemaking on Nevada Regional Haze SIP at EPA-R09-OAR-2011-0130-0011 (Ex. 1).

[2] *See* U.S. EPA, General Principles for the 5-Year Regional Haze Progress Reports for the Initial Regional Haze State Implementation Plans (Intended to Assist States and EPA Regional Offices in Development and Review of the Progress Reports) at 15 [emphasis added].

proposed Nevada Regional Haze 5-Year Progress Report at 9-3. This is not adequate justification for a negative declaration. Given that the revised WRAP modeling shows that the Jarbidge Wilderness is not on the glide path to achieve natural background conditions by 2064 and given that the emission reductions in southern Nevada sources will not likely improve visibility conditions at the Jarbidge Wilderness, NDEP should amend its proposal and determine that additional actions are necessary to achieve the level of progress committed to by the state for Jarbridge Wilderness and revise its haze plan accordingly. Such a revision should include the evaluation of new strategies for its regional haze plan to significantly improve the progress towards remedying visibility impairment at the Jarbidge Wilderness Area.

Such strategies should include an assessment of pollution controls at the North Valmy Generating Station. The North Valmy plant is the largest emitter of sulfur dioxide (SO2) and the second largest emitter of nitrogen oxides (NOx) in the state[3]. Unlike the Reid Gardner and Mohave power plants, this coal-fired power plant is not subject to emission reductions under Nevada's SB 123, and Nevada's 5-Year Progress Report does not mention any planned pollution controls for this plant. Further, it appears likely that the North Valmy Generating Station does contribute to visibility impairment at the Jarbidge Wilderness area, given its emissions and the fact that it is within 160 kilometers from the Jarbidge Wilderness. Thus, the North Valmy Generating Station is an obvious candidate for reasonable progress measures under the Nevada Regional Haze plan.

The following discussion provides more detailed comments on these deficiencies in the Nevada Regional Haze 5-Year Progress Review.

1. NDEP Must Revise Its Reasonable Progress Goal for Jarbidge Wilderness to Be Based on the WRAP's Revised Modeling with its 2018 PRPB Emissions Projections.

As stated above, NDEP's reasonable progress goal for the Jarbidge Wilderness was based on modeling done by the WRAP that was subsequently found to be in error. 76 Fed.Reg. 36464 (June 22, 2011) at fn 18. The error in the WRAP's modeling was not at all minor. Specifically, as discussed in an April 27, 2011 WRAP memo, the WRAP determined that the CMAQ model extracted gridded emissions that were off by one grid cell for 9 IMPROVE site locations in the WRAP region, which affected a total of 15 different Class I areas in 8 states including the Jarbidge Wilderness area and other Class I areas impacted by Nevada sources[4].

Not only was NDEP's reasonable progress goal for the Jarbidge Wilderness based on a flawed modeling analysis, but it was also based on the WRAP's preliminary reasonable progress emissions projections for 2018 (i.e., the WRAP's PRP18a emission projections). *See* the Nevada Regional Haze State Implementation Plan at 6-2. In 2009, the WRAP updated the 2018 emission projections to reflect changes to future emissions projections since January 2007 including BART determinations, 2018 federal electrical generation demand forecasts, new rulemaking,

[3] According to stationary source emissions data for Nevada in EPA's 2011 National Emissions Inventory, available at http://www.epa.gov/ttn/chief/net/2011inventory.html.

[4] *See* Tom Moore, Correction of WRAP region Plan02d CMAQ visibility modeling results on TSS for Regional Haze Planning, April 27, 2011 at 2 (in in docket for EPA rulemaking on Nevada Regional Haze SIP at EPA-R09-OAR-2011-0130-0011) (Ex. 1).

permit limits, consent decrees, and other issues[5]. The revised emission inventory took into account expected emission reductions due to BART that were known at that time at the Reid Gardner and Mohave units.[6]

The April 27, 2011 memo regarding the revised CMAQ modeling shows the differences in the flawed modeling relied upon for the Nevada Regional Haze plan and the revised/corrected modeling. For the Jarbidge Wilderness area, the flawed modeling predicted visibility conditions in 2018 of 11.1 dv, and the corrected modeling predicted visibility conditions in 2018 of 11.8 dv.[7] Both of these modeling results were based on the WRAP's PRP2018b revised emission inventory.[8] The Nevada Regional Haze SIP adopted an even lower reasonable progress goal of 11.05 dv, which was presumably based on modeling done with the earlier PRP2018a emission inventory. *See* the Nevada Regional Haze State Implementation Plan at 6-2, 6-15. This was lower than the 11.09 dv value that reflects the 2018 uniform rate of progress, and thus Nevada's Regional Haze SIP is premised on the concept that the Jarbidge Wilderness Area is on the glide path to reach natural background visibility conditions by 2064. *Id.* However, this predicted level of progress is based on flawed modeling and thus NDEP cannot continue with the assumption that no further measures are needed until 2018 to ensure the visibility improvements at Jarbidge Wilderness are meeting the uniform rate of progress.

In fact, the WRAP's revised modeling based on the 2018PRPb emission projections shows that the Jarbidge Wilderness Area will be significantly off the glide path in 2018. Our calculations show that if visibility improvement continues at the same rate as shown by the WRAP's April 27, 2011 revised modeling results, the Jarbidge Wilderness won't attain natural background visibility conditions until 2210, which is 146 years later than required. This is not acceptable reasonable progress towards the national visibility goal.

NDEP's rationale for not revisiting its reasonable progress goal is that emissions from anthropogenic sources in Nevada are less than emissions projections used by the WRAP in the 2018 modeling. *See* Chapter 1 of the proposed Nevada Regional Haze 5-Year Progress Report at 1-6. *See also* Chapter 5 of the 5-Year Progress Report. However, the comparison made by NDEP was based on the WRAP's PRP18a emissions projections. NDEP should have instead compared to the WRAP's PRP18b emissions projections.

Moreover, while the 2008 emission inventory is lower than the WRAP's 2018a inventory as shown in Table 5-1 of the Nevada 5-Year Progress Report, this reduction in emissions has not been shown to equate to an improvement in visibility impairment at the Jarbidge Wilderness Area. In fact, the majority of the anthropogenic sources that have reduced emissions but were included in the WRAP's 2018 emission inventory have never been shown to impact visibility at the Jarbidge Wilderness Area.

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[5] *See* April 29, 2009 ERG Technical Memorandum – Final, From Marty Wolf and Paula Fields to Lee Briovicz and Tom Moore, WRAP staff (Ex. 2).
[6] *Id.* at 8.
[7] *See* Tom Moore, Correction of WRAP region Plan02d CMAQ visibility modeling results on TSS for Regional Haze Planning, April 27, 2011 at 11 (Ex. 1).
[8] *Id.*

Specifically, NDEP's 5-Year Progress Report discusses the emission reductions that have occurred or will occur at Tracy Generating Station, Fort Churchill Generating Station, Reid Gardner Generating Station, and the Mohave Generating Station. *See* Chapter 3 of the proposed Nevada Regional Haze 5-Year Progress Report. However, none of these sources were modeled to have an impact on visibility at the Jarbidge Wilderness Area, presumably because the Jarbidge Wilderness Area is quite far from these facilities.[9] Specifically, the Mohave Generating Station was approximately 750 km from the Jarbidge Wilderness Area, the Reid Gardner Generating Station is approximately 580 km from the Jarbidge Wilderness Area, and the Tracy and Fort Churchill Generating Stations are approximately 450 km away. Given these distances and the fact that there is no modeling showing otherwise, it does not appear that the reduction in emissions at these facilities will significantly improve visibility at the Jarbidge Wilderness Area. NDEP has also acknowledged this in its 5-Year Progress Report. *See* Chapter 9 of the proposed Nevada Regional Haze 5-Year Progress Report at 9-3.

NDEP also relies on the fact that the WRAP included emissions for proposed power plants in the 2018 inventory which are no longer being proposed for construction. *See* proposed Nevada Regional Haze 5-Year Progress Report at 3-3 to 3-4 and Appendix B. Those power plants included the White Pine power plant to be located near Ely, Nevada, the Toquop Energy Center, to be located in Mesquite, Nevada, and the Copper Mountain Power Plant to be located in Clark County, Nevada.[10] Of these three proposed power plants, only one power plant was modeled for visibility impacts on the Jarbidge Wilderness Area as part of its air permit, and that is the proposed White Pine Energy Center. It does not appear that any modeling was conducted to evaluate the impacts from the proposed Toquop and Copper Mountain power plants on the Jarbidge Class I area as part of any air permit for the proposed facilities.

Thus, while as a whole, 2018 emissions from power plants in Nevada will be much lower than modeled by the WRAP in 2018, the bulk of those cancelled emissions and emission reductions will not likely have much impact on the modeled 2018 visibility conditions at the Jarbidge Wilderness.

Further, the 2008 Nevada emission inventory that NDEP compared to WRAP's modeled 2018 emission projections does not include any emissions for oil and gas development, even though emissions from oil and gas development sources were included in the 2002 emissions inventory for Nevada. *See* Proposed Nevada Regional Haze 5-Year Progress Report at 5-9, 5-12, 5-16. Yet, NDEP stated that Nevada did not report oil and gas emissions for 2008. *Id.* at 5-6. NDEP did not provide justification for assuming zero emissions from oil and gas development in Nevada. This is at odds with publicly reported information related to oil exploration that may be on the rise in Nevada, especially in the northeastern part of the state.[11]

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[9] *See* April 24, 2007, Summary of WRAP RMC BART Modeling for Nevada, Draft #7, April 24, 2007 (Ex. 3).
[10] NDEP also cites to the withdrawal of the Ely Energy Center, which was proposed for Ely, Nevada, but NDEP stated that emissions for this power plant were not included in the WRAP's 2018 emissions projections. *See* the Nevada 5-Year Progress Report, Chapter 2 at 2-7 and at Appendix B, Section 1.4. It appears that emissions for this power plant were included in the WRAP's 2018 PRPb emissions projections.
[11] *See* "Far-Flung Noble Energy Believes in Oil and Gas 'Diversification'," Forbes magazine, December 18, 2013, available at http://www.forbes.com/sites/christopherhelman/2013/12/18/far-flung-noble-energy-believes-in-oil-and-gas-diversification/; *See also* "Fracking comes to Nevada," Las Vegas Review-Journal, January 8, 2013, available at http://www.reviewjournal.com/business/energy/oilgas-search-fracking-comes-nevada.

In summary, NDEP's proposed rationale for not revising the reasonable progress goal for the Jarbidge Wilderness Area does not justify retaining a reasonable progress goal for the area that is based on the WRAP's flawed modeling, especially when the flawed and unjustified reasonable progress goal misleads the public and regulators to find that the Jarbidge Wilderness is on the glide path to achieve natural background visibility conditions by 2064. Instead, NDEP must revise its reasonable progress goal to be 11.8 dv, based on the revised WRAP modeling[12]. While it is true that emissions from Nevada sources are lower than the emissions modeled for Nevada sources in the WRAP's PRB2018b modeling effort, most of those facilities were so far removed from the Jarbidge Wilderness that their emissions were not likely having significant effects on visibility in Jarbidge Wilderness. Thus, NDEP must adopt a revised reasonable progress goal for the Jarbidge Wilderness.

2. NDEP Must Consider and Evaluate Reasonable Progress Measures for the Jarbidge Wilderness and Other Class I Areas Impacted by Nevada Sources.

Because the Jarbidge Class I area is not expected to achieve the level of improvement in visibility impairment necessary to achieve natural background conditions by 2064, NDEP has no justification for its proposed negative declaration finding that its implementation plan is adequate to achieve reasonable progress towards the national visibility goal. Accordingly, NDEP must find that its implementation plan "is or may not be adequate to ensure reasonable progress due to emissions from sources within the State" and commit to revise its implementation plan within one year pursuant to 40 C.F.R. §51.309(h)(4).

While NDEP's Progress Report claims that visibility impairment in the Jarbidge Wilderness is "likely more strongly impacted by emissions originating from within the Snake River Basin than those emitted from within the Great Basin,"[13] source apportionment analyses show that point sources in Nevada contribute a significant portion to visibility impairment in the Jarbidge Wilderness area. According to WRAP source apportionment data for 2002 presented in the Nevada Regional Haze SIP, Nevada point sources contributed significantly more sulfate than any other state on the 20% best days at the Jarbidge Wilderness, and Nevada point sources were the second biggest contributor of sulfates (after Washington state point sources) on the 20% worst days.[14] Point sources of NOx in Nevada also appear to be the second largest contributor to nitrates on the 20% worst days in the Jarbidge Wilderness (after Utah), and Nevada point sources are by far the largest contributor to nitrates in the Jarbidge Wilderness on the 20% best days.[15]

A review of point source emissions data in EPA's 2011 National Emission Inventory database shows that the North Valmy Generation Station located near Valmy, Nevada is the largest emitter of SO2 in the state of Nevada, accounting for almost 54% of all SO2 emissions in the state in 2011.[16] The North Valmy plant was the second largest point source for emissions of

[12] *See* Tom Moore, Correction of WRAP region Plan02d CMAQ visibility modeling results on TSS for Regional Haze Planning, April 27, 2011 at 11 (Ex. 1).
[13] *See* Proposed Nevada Regional Haze 5-Year Progress Report at 9-3.
[14] *See* October 2009 Nevada Regional Haze State Implementation Plan at 4-10 through 4-11.
[15] *Id.* at 4-12 to 4-13.
[16] Based on 2011 data from EPA's National Emission Inventory database for 2011, available at http://www.epa.gov/ttn/chief/net/2011inventory.html.

NOx in Nevada, accounting for 18% of the point source NOx emissions in Nevada in 2018[17]. And the North Valmy Generation Station likely contributes to visibility impairment at the Jarbidge Wilderness Area, as the facility is only about 160 kilometers from the Jarbidge Wilderness[18].

The North Valmy Generating Station consists of two coal-fired units, and in 2013 the two units combined emitted a total of 6,358 tons of SO2 and 3,769 tons of NOx according to EPA's Clean Air Markets Database. These units are not equipped with the best air pollution controls for SO2 and NOx. Unit 1 is a 254 MW unit with no SO2 controls, low NOx burners and overfire air for NOx control, and a baghouse[19]. Unit 2 is a 268 MW unit with a dry scrubber that is only required to achieve 70% SO2 control, low NOx burners and overfire air for NOx control, and a baghouse[20]. If a new SO2 scrubber was installed at Unit 1 to achieve 95% control, that would reduce SO2 emissions by almost 4,500 tpy (assuming operations at the same level as in 2013) just from Unit 1. If both North Valmy units were equipped with new SO2 scrubbers to achieve 95% control, SO2 emissions would be reduced from a total of 6,358 tons per year to 531 tons per year (based on 2013 operation levels), which would mean over 5,800 tons per year of SO2 would be reduced from this facility. If the two North Valmy units were equipped with selective catalytic reduction (SCR) for NOx control, NOx emissions could be reduced by approximately 3,000 tons per year. Such emission reductions are readily achievable with available technology and would likely have significant benefits for visibility improvement at the Jarbidge Wilderness Area and other nearby Class I areas that are likely being impacted by emissions from northern Nevada. NDEP must consider emission control requirements for the North Valmy Generating Station as measures to ensure reasonable progress towards the national visibility goal at the Jarbidge Wilderness Area.

NDEP must also consider the potential visibility impacts from oil and gas development in the region near the Jarbidge Wilderness. Recent news articles seem to indicate that oil development could be increasing in Nevada, as it has in recent years in Utah[21]. To minimize impacts on air quality, NDEP should identify any appropriate regulatory tools in place to address the air emissions from the emission sources associated with oil and gas development. One regulatory tool that has proven to be very useful in regulating air emissions from these sources is a minor source best available control technology (BACT) requirement. Since most of the

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[17] *Id.*

[18] The proposed White Pine power plant was to be located approximately 260 km to the south/southeast of the Jarbidge Wilderness Area, and it was projected to have noticeable visibility impacts on the Jarbidge Wilderness Area. The White Pine facility's maximum SO2 and NOx emissions were expected to be in a similar range as the actual emissions from the North Valmy Generating Station. *See* Bureau of Land Management, Ely Field Office/Nevada, Final Environmental Impact Statement for the White Pine Energy Station Project, August 2008, Volume 2 at 4-102-4-103, 4-114, and 4-122. Given the proposed White Pine power plant's impacts, it seems very likely that modeling of the North Valmy Generating Station, which is 100 km closer to the Jarbidge Wilderness, would show similar or greater impacts to visibility at the Jarbidge Wilderness.

[19] *See* Nevada Bureau of Air Pollution Control Class I Air Quality Operating Permit, Permit No. AP4911-0457.01 at Section VI.A.1.a.

[20] *Id.* at Section VI.B.1.a.

[21] *See* "Far-Flung Noble Energy Believes in Oil and Gas 'Diversification'," Forbes magazine, December 18, 2013, available at http://www.forbes.com/sites/christopherhelman/2013/12/18/far-flung-noble-energy-believes-in-oil-and-gas-diversification/; *See also* "Fracking comes to Nevada," Las Vegas Review-Journal, January 8, 2013, available at http://www.reviewjournal.com/business/energy/oilgas-search-fracking-comes-nevada.

sources associated with oil and gas development are often not considered major sources under the prevention of significant deterioration (PSD) permitting program, a minor source BACT requirement can give the state the regulatory authority to require controls on air pollution from these sources. Alternatively, NDEP should consider a SIP regulation requiring appropriate pollution controls and emission limits on these sources. Examples of pollution controls for these sources are available from other western states that have been experiencing a boom in development, such as Wyoming, Colorado and New Mexico. All of these states either have a minor source BACT program, emissions control regulations, and/or guidance to minimize air emissions from these sources.

In summary, NDEP does not have adequate justification for its negative declaration. Given that revised, corrected modeling from the WRAP shows that the Jarbidge Wilderness is not on the glide path to achieve natural background conditions in 2064, NDEP must acknowledge that its regional haze SIP is not adequate to ensure reasonable progress towards the national visibility goal. Further, NDEP must commit to revising its SIP to evaluate additional controls to achieve reasonable progress within one year pursuant to 40 C.F.R. §51.309(h)(4).

3. NDEP Must Revise Its Assessment of Contribution to Visibility Impairment at Class I Areas Impacted by its Sources to Be Based on the WRAP's Revised Modeling with its 2018 PRPb Emissions Projections.

Nevada's assessment of the adequacy of its plan with regard to the reasonable progress goals set for out-of-state Class I areas impacted by its sources is flawed in similar ways to its analysis for the Jarbidge Wilderness. Its assessment is based on its percent contribution as identified by WRAP's erroneous modeling that itself relies on WRAP's outdated PRP18a emission projections. *See* Chapter 6 of the proposed Nevada Regional Haze 5-Year Progress Report at 6-6, 6-7 and the Nevada Regional Haze State Implementation Plan at 4-15, 4-17, 7-21. Additionally, Nevada bases its emission reduction conclusions on the WestJump 2008 emissions inventory; its analysis of the changes in statewide emisssions should be informed with the more updated 2011 NEI and recent CAMD data available to the extent possible.

As at the Jarbidge Wilderness, it is not clear that emissions reductions on a statewide basis will be sufficient to prevent Nevada's sources from impeding reasonable progress in out-of-state Class I areas. If the majority of emissions reductions come from sources in the southern part of the state, they may not account for Nevada's portion of impairment at, for instance, the Sawtooth Wilderness in Idaho. Thus, NDEP must revise its analysis of the adequacy of its plan with regard to its potential to impede reasonable progress in out-of-state Class I areas.

4. NDEP Must Revise Its Proposed Progress Report to Meet §51.308(g)(2) and §51.308(g)(4)

§51.308(g)(2) requires states to include estimates of emissions reductions associated with its SIP measures. The Progress Report describes the emissions reductions achieved in and near Nevada since the baseline for the SIP; however, it fails to detail the specific reductions achieved

through the implementation of the enforceable measures required by the SIP. This makes it impossible to tell whether the reductions are a result of the SIP or other actions, and hence doesn't demonstrate whether or not the SIP measures are working.

For instance, the Progress Report outlines a significant decrease in SO2 and NOx from electric generating units (EGUs). However, it is not clear how, or if, all of these reductions are enforceably linked to SIP requirements. Nevada notes a "steady decrease" in emissions from several EGUs, but in both instances, emissions actually increased from 2012-2013. *See* Chapter 6 of the proposed Nevada Regional Haze 5-Year Progress Report at 3-6 through 3-10. This may be due to variations in operating time or other non-enforceable factors at the facilities in question. If the reductions are not enforceable, they cannot be relied upon.

40 C.F.R. §51.308(g)(2) specifically requires an analysis of emissions reductions achieved through the SIP reduction measures, and this is set apart from the separate regulatory requirement to track emissions more generally from all sources in the State in §51.308(g)(4). We ask Nevada to include estimates of reductions due to enforceable SIP measures and revise its assessment of the adequacy of its SIP on this basis.

Likewise, §51.308(g)(4) requires an analysis of emissions trends across the entire inventory, covering the applicable 5-year period "based on the most recent updated emissions inventory, with estimates projected forward as necessary and appropriate." Nevada's analysis includes a description of the differences between the 2002 inventory and the WestJump inventory, which was for base year 2008. It also describes the differences between WestJump's inventory and the 2011 NEI in some source categories.

However, this does not fully address the regulatory requirement to include "estimates projected forward as necessary and appropriate." In this case, 2008 is 6 years ago. While the WestJump inventory and NEI comparison are helpful, it does not provide a picture of what is happening today with which to assess the sufficiency of Nevada's SIP.

We ask Nevada to additionally discuss in this section of its progress report: 1) up-to-date EGU emissions from EPA's Clean Air Markets Database (these are discussed elsewhere in the report but are not included here); and 2) descriptions of general trends in in-state emissions from 2008 to at least 2012 by pollutant and source category (preferably quantitative), derived from available state emissions inventories and Title V annual reporting and similar data collection endeavors. Without this information it is difficult to determine the impact of Nevada's SIP measures.

Last, to the extent that NDEP is relying on emission reductions that go beyond what is required by its Regional Haze SIP, such as from SB123, NDEP should adopt those requirements as enforceable measures of its state implementation plan for regional haze.

Thank you for considering these comments.

Sincerely,

David von Seggern bb

David VonSeggern, Chair
Sierra Club Toiyabe Chapter
P.O. Box 8096
Reno, NV 89507
vonseg1@sbcglobal.net

Gloria Smith bb

Gloria Smith, Managing Attorney
Sierra Club
85 2nd Street, 2nd floor
San Francisco, CA 94105
gloria.smith@sierraclub.org

Lynn Davis bb

Lynn Davis
Sr. Program Manager
Nevada Field Office
National Parks Conservation Association
10161 Park Run Drive, Ste. 150
Las Vegas, NV 89145
(702) 318-6524 office
(702) 281-7380 mobile
ldavis@npca.org

Exhibits 1-3 attached

The NGO comment letter was accompanied by three exhibits. Because of the length of the exhibits, the NDEP has not included them in this appendix, but is providing links to these documents on the internet.

1. *Correction of WRAP region Plan02d CMAQ visibility modeling results on TSS for Regional Haze Planning.* April 27, 2011. The final version of the document is available at http://vista.cira.colostate.edu/TSS/Planning/InformationExchange.aspx (See Revised Plan 02d CMAQ Modeling Results *(June 2011)*, last viewed 11/10/2014)

2. *WRAP PRP18b Emissions Inventory – Revised Point and Area Source Projections.* April 29, 2009. Technical Memorandum from Marty Wolf and Paula Fields, Eastern Research Group, to the WRAP staff. http://www.wrapair.org/forums/ssjf/documents/Pivot_Tables/2009-04x_Final_PRP18b_memo_4-29.pdf (last viewed 11/10/2014)

3. *Summary of WRAP RMC BART Modeling for Nevada.* Draft#7. April 24, 2007. http://www.ndep.nv.gov/baqp/planmodeling/docs/NV_Bart_summary_v7_Apr24_2007.doc

These exhibits are also available on request from the NDEP Bureau of Air Quality Planning at 901 South Stewart Street, Carson City, Nevada 89701 or 775-687-9349.