



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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February 18, 2016

Ref: 8EPR-N

Karl Mendonca
BLM Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652

Re: Roan Plateau Planning Area Resource Management Plan Amendment and Supplemental
Draft EIS #20150330

Dear Mr. Mendonca:

The U.S. Environmental Protection Agency Region 8 has reviewed the Roan Plateau Planning Area Resource Management Plan Amendment (RMPA) and Draft Supplemental Environmental Impact Statement (SEIS) prepared by the Bureau of Land Management (BLM) Colorado River Valley Field Office (CRVFO). Our comments are provided for your consideration in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

Project Description

The Draft SEIS considers land use planning decisions for management of approximately 73,800 acres of Federal land in western Garfield County and a small portion of Rio Blanco County, Colorado. This includes 56,540 acres of the former Naval Oil Shale Reserves Numbers 1 and 3. This new planning effort and supporting environmental analysis addresses information and alternatives analyzed in the BLM's 2006 Proposed RMPA/FEIS, supplemented with additional analyses in response to issues identified by the U.S. District Court for the District of Colorado. It also addresses new issues raised in internal and external scoping for the supplement. The Draft SEIS analyzes goals, objectives, allowable uses, and management actions for the planning area, and includes these four alternatives:

- Alternative I: the No Action Alternative
- Alternative II: the 2006 FEIS Proposed Plan Alternative
- Alternative III: the Community Alternative, and
- Alternative IV: the Settlement Alternative, which is the BLM Preferred Alternative and incorporates the terms of a settlement agreement signed between the BLM and the plaintiffs and interveners in a Federal lawsuit over the 2006 Roan Plateau FEIS. Above the rim, approximately 1,830 acres would remain open, and 28,660 acres would be closed to oil and gas development. Below the rim, approximately 11,170 acres would be open, and 6,310 acres would be closed to oil and gas leasing and development.

The plan amendment that is ultimately adopted may combine components from each of the alternatives presented in the Draft SEIS.

The EPA's Comments and Recommendations

As a cooperating agency for this project, we've appreciated the opportunity to work closely with the BLM prior to the public release of the Draft SEIS. Our comments focus on (1) water resources, (2) air resources, and (3) greenhouse gas (GHG) emissions and climate change.

(1) Water Resources

Identify Underground Sources of Drinking Water or usable water

The Draft SEIS states that the chemistry of many groundwater sources both atop and below the rim are not of drinking water quality, and/or "are not known to contain significant useable water-bearing zones" (pgs. 3-34 to 3-37 and 4-39 to 4-40). This is confusing because most of the groundwater resources identified in the Draft SEIS do meet the BLM definition of usable water under Onshore Order No. 2, which are "those waters containing up to 10,000 ppm of total dissolved solids" which must be reported, protected and/or isolated under Onshore Order 2. Under the Safe Drinking Water Act (SDWA), these aquifers are also considered Underground Sources of Drinking Water (USDW) if their total dissolved solids (TDS) concentrations are $\leq 10,000$ mg/L. As such, these USDWs are subject to protection during injection activity under the SDWA unless an aquifer exemption has been granted. Therefore, we recommend identifying all groundwater sources that qualify as usable water as defined by Onshore Order No. 2 and USDW as defined by SDWA.

Identify geologic structural relationships where communication of fluids from production zones with shallow aquifers may be more likely

Page 3-32 of the Draft SEIS states that "fractures are ubiquitous in both the upper and lower aquifers, leading to relatively high conductivity rates. These fractures increase the propagation of fluids throughout both aquifer systems, including movement through the semi-permeable Mahogany confining zone. The majority of these fluids are discharged at numerous springs, seeps, and creeks." Because of these findings, we recommend inclusion of a comprehensive geologic map, demonstrating the orientation, distribution, and density of faults and fractures in the study area. These maps can help guide well placement or identify where additional measures may be necessary to protect groundwater resources (i.e., in areas of high fracture density, zones containing conjugate or bimodal fracture sets, or faults).

Discuss what measures are in place to protect groundwater, including groundwater that supports seeps, springs, perennial streams and CRCT habitat

Page 3-35 of the Draft SEIS states that "atop the plateau, groundwater is discharged from the upper aquifer unit and possibly lower unit (see comments above on leaky Mahogany Zone) at numerous springs and seeps, which contribute to base flows in the East Fork Parachute Creek and East Middle Fork Parachute Creek basins." The Draft SEIS describes the contribution of seeps and springs to other perennial streams (p. 3-13), some of which contain populations of the genetically pure Colorado River cutthroat trout (CRCT). Protection of seeps, springs, wetlands and other surface waters is dependent not only on protection from surface-disturbances, but also on protection against groundwater contamination. We recommend including in the Final EIS a discussion on the protective measures for groundwater that

will be required for this project. These measures are particularly important where geologic structures or deep aquifers under artesian pressure (i.e., Williams Fork) are likely to increase communication with deeper fluids that may become contaminated by drilling and completion activities, and in areas where groundwater supports seeps or springs which contribute to perennial springs containing CRCT habitat. We also recommend including wellbore diagrams depicting cement and casing requirements that will be implemented to protect groundwater sources in the project area.

Disclose all known previous groundwater impacts related to industry activities within the planning area and consider additional mitigation options, especially within the retained leases

The Draft SEIS discusses the 2013 Williams Company spill event (pgs. 3-19 and 3-35) that contaminated groundwater down gradient of the original spill, at least two other contaminant release events were reported in the planning area in 2008 (the Berry Petroleum and Marathon Oil Garden Gulch spill and Williams Company Prather Springs spill), and several other spill events that have been reported elsewhere in the region. In many of these cases, it is unclear how long the release or releases were occurring before they were discovered. Prompt identification of spill events will help prevent significant negative impacts. We recommend that the Final EIS identify where existing groundwater monitoring wells are located and consider inclusion of new dedicated groundwater monitoring wells where appropriate to detect spill events in remote or sensitive areas which otherwise may go undetected until significant impacts have already occurred. Groundwater monitoring wells should be located both up- and down- gradient of production or injection wells to identify contamination before impacts to USDW or groundwater supported springs, seeps or CRCT habitat become significant. This is particularly important for retained leases under the Settlement Agreement, in those portions of the leases that overlap with the natural recharge area of the Piceance Basin as displayed in Maps 11 and 18. Please clarify whether or not any groundwater-specific monitoring programs will be required.

In the Settlement Agreement (Exhibit 2, Part F.), disclosure of drilling and production chemicals are required for activities within the retained leases. In addition we recommend considering the required disclosure of all chemicals introduced to the wellbore (including maintenance chemicals) for leases above the rim at a minimum. Knowledge of the chemicals present is necessary to evaluate the potential for impacts related to unintended releases of flowback, produced water, drilling fluids, etc., as well as evaluation of appropriate remediation actions should a release to the environment occur.

Identify potential cumulative impacts related to groundwater drawdown and riparian/wetland areas

Page 4-49 of the Draft SEIS states that “under Alternative IV, 1,892 acre-feet/year depletions of fresh water would be estimated from development of Federal wells (Table 4.2.6).” The EPA recommends identifying how much (if any) of this freshwater use is expected to come from groundwater. Consider discussing the maximum groundwater drawdown that seeps and springs can tolerate before negative impacts develop. Please also consider timing limitations for groundwater use to minimize impacts to wetlands, seeps, and springs, particularly those that support perennial streams with populations of CRCT.

Page 4-107 of the Draft SEIS states that “a large number of riparian/wetland areas would be expected to return to PFC over time, resulting in moderate beneficial impacts within the Planning Area. Please clarify whether “return to PFC” means there is an anticipated recovery from current status as a result of development under Alternative 4, or that impacts as a result of development will eventually be returned

to PFC.

Surface Water Resources

A number of streams in the planning area fall into Colorado's Integrated Report Categories 2 and 3 (insufficient data to determine if designated uses are being met). We recommend attempting to fill in these water quality data gaps. For example, operators could work with the United States Geological Survey to reopen some existing monitoring stations that had provided data through the 1980s (assuming the stations are still there but have been shut down). More recent monitoring data would help CDPHE determine water quality status for some of these streams. Given the sensitivity and high-quality of these resources, we recommend a specific commitment to monitor water quality on a regular basis, perhaps quarterly (pre-construction for baseline conditions, as well as during operations).

(2) Air Resources

The EPA has a number of comments and recommendations regarding the air quality analysis completed for the Draft EIS. We believe working together to address these concerns will result in an analysis that will allow decision-makers and others to better understand potential air quality impacts from the project. These comments focus on the following: uncertainties in the far-field photochemical grid modeling (PGM); the ozone analysis; the air quality related values (AQRV) analysis; criteria pollutant analysis; and the near-field modeling analysis.

Uncertainty in Far-Field PGM Modeling Analysis

Given the uncertainties in the model performance, it is possible that the predicted impacts are underestimated for ozone, ARQVs, and other criteria pollutants. For instance, the Colorado Air Resources Management Modeling Study (CARMMS) Model Performance Evaluation (MPE) results indicated that the model was biased low for ozone and its precursors. The MPE also indicated that the wet sulfur and nitrogen deposition were underestimated, and it is possible that the predicted impacts are underestimated. We recommend including a section in the Final EIS that discusses the strengths and weaknesses of the modeling platform based on the results of the CARMMS MPE. This section should also explain how these uncertainties found in the MPE should be used to interpret the model results.

Ozone Analysis

In October 2015, the EPA strengthened the National Ambient Air Quality Standards (NAAQS) for ground-level ozone from 75 ppb to 70 ppb, based on extensive scientific evidence about ozone's effects on public health and welfare¹. We recognize that this change occurred just prior to the publication of the Draft SEIS and recommend, to the extent possible, that the ozone analysis results in the Final EIS be presented relative to this revised ozone standard of 70 ppb.

To more comprehensively understand the modeled impacts to ozone in the planning area, we recommend that the ozone analysis includes the total or cumulative modeled concentration associated with the maximum contributions of the planning area contained in Table 4.2.17, and the location(s) of the maximum contributions predicted in the model domain. This is important because it aids in

¹ Ozone Standard – Final Rule: <http://www3.epa.gov/airquality/ozonepollution/actions.html#current>

understanding the nature of the projected impacts and their potential severity. In addition, we recommend a discussion, with appropriate references to figures, explaining that the ozone analysis includes an ambient concentration analysis using absolute modeling results and relative modeling results. This information will assist in understanding the relevance of the planning area contributions to the total ozone impacts.

The 2011 to 2014 ambient air quality monitoring ozone data presented in the DSEIS (page 3-45, Table 3.2.16) shows an average design value for monitors with three years of data of approximately 67 ppb and the predicted impact of an additional 1.7 to 3.8 ppb ozone increase (page 4-66, Table 4.2.17). In light of this we recommend that mitigation be considered, even for the low scenario that BLM believes is closest to the Preferred Alternative, since the modeled impact may be underestimated and the average design value is 95.7% of the revised ozone standard of 70 ppb in and around the planning area. It may be beneficial to consider mitigation measures from Table VI-I Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development in the BLM's current Comprehensive Air Resources Protection Protocol.

AQRV Analysis

In reviewing the cumulative visibility analysis starting on page 4-77, we found it difficult to interpret the information presented in this section, specifically the results presented in the tables on pages 4-79, 4-87, and 4-88. As outlined in the CARMMS modeling protocol and discussed during past workgroup meetings, it is our understanding that the cumulative visibility analysis would follow the procedures, or the six steps, outlined in the February 10, 2012 Fish and Wildlife Service (FWS) letter on the subject. However, we were unable to determine whether these steps were followed to generate the results included in this section. For instance, it is not clear whether the "2008 Base" visibility results included in tables 4.2.22b and 4.2.22d were generated from monitoring data or the 2008 base year modeling. Therefore, we recommend either including a discussion of procedures used to generate the results for the cumulative visibility analysis in the Final EIS, or sharing this information with us through a future technical workgroup meeting. We anticipate that our confusion regarding the presentation of cumulative visibility impacts would be alleviated if we were able to understand how the information presented in this section aligns with the steps outlined by the 2012 FWS letter.

We also found it difficult to interpret Tables 4.2.21a, 4.2.21b and 4.2.21c (page 4-79). The results do not appear to summarize the baseline visibility and total visibility impairment, but instead provide the improvement in visibility from 2008 to the future year. Additionally, these results do not compare impacts to the No Action alternative, as recommended in the 2012 FWS letter. The reader could potentially make the comparisons between the emission scenarios. However, the results do not necessarily capture the impacts associated with the Action Alternatives. This makes it difficult to understand whether cumulative visibility goals may be impeded by the project.

The presentation of cumulative impacts from all Colorado oil and gas sources in the quasi-cumulative analysis, which uses the 0.5 dv and 1.0 dv thresholds as cumulative metrics, is not clear and seems to indicate that there is reason for concern regarding visibility impairment from all Colorado oil and gas (both federal and non-federal). Given that these metrics have not been used to assess the significance of visibility impairment from such a vast source group (statewide oil and gas emissions), we recommend reassessing whether there is value in presenting the quasi-cumulative analysis that compares all Colorado oil and gas emission impacts to the FLAG2010 visibility thresholds. If relevance cannot be

assigned to the quasi-cumulative impacts that are above these thresholds, we recommend removing these results and discussion from this section.

The EPA has consistently made recommendations on the methodology for presenting the visibility analysis. Specifically, we continue to recommend comparing the visibility results among the development scenarios, in addition to comparing or disclosing the differences between the future year (2021) and base year (2008) modeled visibility results. A comparison or difference among the future proposed development and the base year would be expected to show an overall net improvement (or reduction in impacts) as a result of state and federal control measures (including Regional Haze Regulations). Therefore, presenting the results in a manner that shows the difference among the development scenarios assists in evaluating the range of effects attributable to each alternative. Note that this approach should also be used for NAAQS pollutant analyses (i.e. pages 4-90 to 4-96).

Finally, the CARMMS results indicate that the planning area's contribution to nitrogen deposition is above the DAT at many of the locations analyzed. However, the magnitude of the cumulative (or total) nitrogen load was not presented to assess whether the area is projected to experience nitrogen deposition exceeding the critical load. We recommend that the analysis connects the planning area impacts with the cumulative impacts to better gauge the significance of the planning area's activities within the cumulative context.

Criteria Pollutant Analysis

Certain analyses that are typically included in NEPA air quality assessments are missing from the Draft SEIS. Specifically, assessments of the following impacts are missing: NAAQS for 1-hour SO₂, 1-hour and 8-hour CO, and 24-hour PM₁₀ for planning area contributions and cumulative impacts; and a comparison of planning area impacts to Prevention of Significant Deterioration (PSD) increments. For consistency with other NEPA air quality assessments and to ensure full disclosure, we recommend that these missing analyses be included in the Final EIS. Such information will further support any decisions related to project development.

Near-Field Modeling Analysis

The Draft SEIS (page 4-97) states that a project-specific near-field impact analysis was not performed because the scope of analysis for this EIS is regional and cumulative, and project-specific near-field analyses will be completed when detailed information for future proposed actions is known. We recommend that this important commitment to conduct near-field modeling at the project level included in the Final EIS and Record of Decision (ROD), along with a commitment to mitigate adverse air quality impacts identified through the future project-level near-field analyses.

(3) Greenhouse Gas Emissions and Climate Change

The Draft SEIS compares total expected Roan Plateau planning area GHG emissions with projected Colorado, U.S. and global GHG emissions. We strongly recommend this be deleted from the Final EIS because these comparisons obscure rather than explain how to consider GHG emissions under NEPA. Climate change is a global problem resulting from the emissions of many individual sources whose impacts are cumulative. The environmental impacts are best described by using emissions as a proxy when comparing the proposal, alternatives and potential mitigation. Similarly, it is not meaningful to

compare either the GHG emissions or impacts from planning level oil and gas activities to a USEPA modeled source referenced in a 2008 memo on Endangered Species Act and GHG Emitting Activities to determine that the projected annual planning area federal oil and gas related emissions would have no measurable impact on the climate. We also note that, given the substantial advancements in climate science and associated models since 2008, we do not recommend referencing the 2008 memo in general.

Lastly, the Draft SEIS considers potential changes to the affected environment that may occur due to climate change (Section 4.2.4). We recommend considering climate change adaptation measures where appropriate.

The EPA's Rating

In accordance with our responsibilities under the CAA Section 309, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on our review, the EPA is rating Alternative IV, the Preferred Alternative, as "Environmental Concerns – Insufficient Information" (EC-2). The "EC" rating is based on the identification of environmental impacts that should be avoided in order to fully protect the environment. The "2" rating means additional information is needed to more fully characterize impacts. Additional information is also needed on proposed mitigation measures. A full description of the EPA's rating system can be found at: <http://www2.epa.gov/nepa/environmental-impact-statement-rating-system-criteria>.

Thank you for the opportunity to provide comments on the Draft SEIS. If you have any questions or comments, please feel free to contact me at 303-312-6704, or your staff may contact David Fronczak at 303-312-6096 or fronczak.david@epa.gov.

Sincerely,



Philip S. Strobel
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

cc: Greg Larson, BLM