

Public Comment Summary

Following open houses in Rangely, Meeker, Rifle and Grand Junction, the Chevron U.S.A. Environmental Assessment (EA) was prepared and the official public comment period opened upon publication of the draft document on August 15, 2006. The EA was available for public comment through September 18, 2006.

The BLM distributed a notification and inquiry via first-class mail to contacts on the mailing list, announcing the availability of the EA in various media formats. The mailing list included federal, state, and local elected officials and interested members of the public. Availability of the EA was also announced by publishing notices in local newspapers.

The EA was mailed out to approximately 65 individuals, groups, and agencies. It was provided for public review by bound paper or CD-ROM format upon request, and posted for review or downloading on the project web site.

A total of 15 individuals, groups or agencies submitted comments by letter, fax and Internet response. **Table 1** summarizes the comments submissions to the BLM by types of commenters and numbers of each type of commenter who submitted comments. Four individuals, four state agencies, two Federal agencies, two county or city governments, two advocacy groups and one business group submitted comments. Most submissions contained more than one comment resulting in a total of 217 comments received on the Chevron U.S.A Oil Shale Research, Development, and Demonstration (RD&D) Proposal.

Each commenter was assigned a commenter ID, as shown in **Table 1**. Each individual comment was then assigned a comment number, which is comprised of the commenter ID followed by a sequential number. For example, assume Jane Doe submitted one letter that included four comments, and that Jane's Comment ID is JD. Each of her four comments are assigned the following comment numbers: JD-01, JD-02, JD-03, and JD-04. Using this ID, commenters can find responses to their specific comments in **Table 2**.

All comment letters were reviewed, and most comments fell within general topics or 'themes'. Thirteen themes were identified that encompassed the majority of the comments. The themes, and the number of comments that were categorized within the themes, are as follows:

Number of Comments within each Theme

| | | | |
|-------------------------|----|-----------------------|------------|
| Air Quality | 62 | Transportation/Access | 4 |
| Mineral | 32 | Visual | 1 |
| NEPA Procedural | 31 | Waste Management | 2 |
| Noise | 1 | Water Resources | 53 |
| Outside Scope | 2 | Water Rights | 2 |
| Reclamation/Restoration | 1 | Wildlife | 10 |
| Socioeconomics | 10 | Miscellaneous/Other | 6 |
| | | Total | 217 |

Comments that were very similar were grouped and summarized in a single comment in **Table 2**. In this case, multiple commenter IDs are listed in the table to identify the commenters. Some comments could not be grouped, and remained as individual comments. A few comments were considered miscellaneous and did not fit into any of the above-mentioned themes.

General comment responses (below) are provided to address the most dominant comment themes.

GENERAL COMMENT RESPONSES COMMON TO ALL OF THE OIL SHALE RD&D EAs

During the BLM's analysis of comments, the following general areas of concern, or comment themes, were identified.

Air Quality

Water

Social and Economic Impacts

Lease Terms

Permits from state or local governments

Environmental Impact Statement (EIS) Vs. Environmental Assessment (EA)

Narrow statement of Purpose and Need

Reasonable Range of Alternatives

Preference Right Acreage

Comments that are outside the scope of the RD&D EA

General responses to these themes are below. Detailed response to comments can be found in the table that follows the general responses.

Air Quality Impacts

Air quality modeling was completed for the Oil Shale RD&D project to provide the BLM with adequate information relevant to issues raised during the initial scoping for the RD&D projects and to compile additional information on which to make an informed decision. The modeling chosen for the five RD&D projects (AERMOD) is appropriate for the scale and scope of the RD&D projects and has been extensively used in past assessments. Because of the nature of the research and development, some uncertainties were expected and the BLM consistently chose to use conservative estimates when uncertainties arose.

In addition, mitigating measures identified in the subalternative were not completely accounted for in the air modeling. The result was an analysis that showed a potential for cumulative visibility impacts. Because of the conservative, worst-case scenario, approach taken in modeling, the BLM believes there will not be any actual impacts to visibility as a result of adding oil shale RD&D projects to existing activities. In addition, extensive monitoring, pollution prevention and permitting requirements further alleviate the possibility of any air quality impacts associated with the RD&D projects.

Water Impacts

Many comments addressed uncertainties in water impacts associated with the RD&D projects. BLM acknowledged that there are uncertainties associated with water quality and has undertaken extensive mitigation efforts to address those issues. The key to minimizing impacts so they remain insignificant is to implement the identified mitigation and to require a comprehensive water (ground water and surface water) monitoring and response plan. The BLM is committed to incorporating, not only the comments, but also the appropriate local, state and federal agencies, to the maximum extent possible in developing comprehensive monitoring and response plans. The coordination and collaboration on these plans would extend beyond the agencies and would include all three companies in order to provide meaningful data across all five projects that could accurately reflect the baseline, operational and post-operational conditions that accompany in-situ oil shale development. Involvement of technical experts among the agencies is the only way to incorporate the critical parameters into the monitoring plans, to develop data reporting requirements and to determine how data would be interpreted. To this end, the BLM has begun coordination by holding monthly meetings in its Colorado State Office with federal, state and local agencies on progress in the RD&D effort. These meetings will be critical in identifying permit requirements in the near term and continue to determine the monitoring needs described above.

As with air quality, extensive monitoring, pollution prevention and permitting requirements further alleviate the possibility of any significant water quality impacts associated with the RD&D projects.

Social and Economic Impacts

While the oil shale RD&D projects will progress on a staggered schedule and are of relatively small scale, they have the potential to further strain the social and economic structure in the local area over the next ten years. It has been noted by local officials that oil shale companies that are already engaged in energy development in Northwestern Colorado, specifically Chevron and Shell, have maintained a positive relationship with local governments. Concerns voiced over social and economic impacts include employee housing, road maintenance and improvement, law enforcement and emergency response. Some suggestions brought forward to mitigate these concerns are not within the authority of the BLM to guarantee or to include in a lease as a condition of approval. The BLM will continue to facilitate to the maximum extent possible collaboration and communication between local governments and the companies operating within their jurisdictions.

The greatest potential for strain on the local housing markets and roads is likely to occur from the Shell RD&D projects, which anticipates the largest influx of temporary workers. In comments submitted to the BLM, Shell is planning to develop temporary quarters to accommodate a large majority of the workers Shell anticipates during the construction and operation stages of its RD&D projects.

Lease Terms

Standard Lease Terms have been developed to provide the lessee the right to use the leased land as needed to explore, drill, mine, extract, remove, beneficiate, process, and dispose of the oil shale and products of oil shale located under the leased lands. Standard Lease Terms provide for reasonable measures to minimize adverse impacts to surface and subsurface resources. These include, but are not limited to, modifications to the siting or design of facilities, schedule of operations, and specifications of interim and final reclamation measures. Federal environmental protection laws such as the Clean Water Act, Clean Air Act, Endangered Species Act, and Historic Preservation Act, will be applied to all lands and operations and are also included in the standard lease terms.

The BLM's planning process requires these oil shale RD&D projects to be evaluated to determine if oil shale development would conflict with the protection or management of other resources or public land uses. The RD&D EAs analyzed the proposed RD&D projects and identified mitigating measures to reduce the potential for impacts to resources or other public land uses. These comprehensive mitigation measures will be added as special stipulations to the leases in addition to Standard Lease Terms. The BLM has determined the special stipulations that will ensure oil shale RD&D operations are conducted in a manner that minimizes adverse impacts to the land, air, water, cultural, biological, and visual elements of the environment, as well as to other land uses or users.

Permits from state or local governments

It was asserted in the preliminary Environmental Assessment (EA) for Chevron and Shell's RD&D proposals that the BLM be allowed to waive the requirement to obtain *right-of-way* permits from state or local governments. The BLM is not asserting the right to waive permitting requirements for any other element of the project, including critical elements such as air quality, hazardous waste disposal, and water quality. Because the language that caused this confusion was taken from a form the BLM has previously used for issuance of right-of-way grants (Form 2800-14) and is not necessary to the assessment, it has been stricken from the revised EA.

While the BLM is not authorized to either implement or waive state or local laws, we do, in fact, require our lessees to comply with them under virtually all circumstances. Because some of the technologies in the RD&D proposals are so new, public involvement and comment are especially important to producing the strongest possible analysis of their effects. By releasing the EAs in preliminary form, the BLM invited the public and state and local authorities to identify where and how the analysis could be strengthened before final decisions are made on RD&D leasing.

The BLM holds monthly meetings in its Colorado State Office with federal, state and local agencies on the progress of the RD&D effort. In addition, close collaboration with state and local governments is continuing as the BLM prepares a Programmatic Environmental Impact Statement for commercial oil shale leasing. The table at the end of the Comment Responses indicates the typical permits that are required prior to development activities.

Environmental Impact Statement (EIS) Vs. Environmental Assessment (EA)

Some commenters state that there is a possibility of unknown impacts from the projects and for that reason the BLM should develop an EIS. Commenters may not adequately consider that what Congress mandated, and what the BLM is implementing, is leasing for research and development of technologies to recover liquid fuels from oil shale. If all the impacts from those technologies were known or knowable, there would be no need for research and development. In Section 369(a) of the Energy Policy Act of 2005 Congress required the BLM to lease Federal oil shale properties for the purpose of experimentation with promising technologies. The essence of experimentation is the possibility that previously unknown results might occur.

The BLM has tried to anticipate, minimize, and monitor to the extent possible the likely impacts of the operations proposed for oil shale RD&D projects. Federal agencies may conduct experiments with new technologies pursuant to an EA when there are sufficient monitoring programs and plans to mitigate adverse impacts if any are discovered. An EA remains the appropriate NEPA documentation when measures are taken to mitigate adverse impacts, even if they cannot completely compensate for the project's effects.

For the RD&D projects in Colorado, the areal extent has been limited to 800 acres maximum and requiring extensive monitoring and mitigation programs. Furthermore it is entirely appropriate for an agency to assume that companies will comply with permitting standards, regarding permits which the project must have in order to go forward. Although the BLM can not guarantee that there will be no adverse impacts, the measures imposed on the RD&D projects will limit the effects so as to be insignificant.

Other comments suggested that the BLM must prepare an Environmental Impact Statement for a number of reasons:

- *An EIS would facilitate long-term planning.* The BLM is in the process of preparing a programmatic EIS for commercial leasing of Federal oil shale and tar sands. That document will facilitate long-term planning regarding Federal oil shale lands and their surrounding communities.
- *Public involvement requires an EIS.* The BLM exceeded the public involvement requirements for an EA. It held public meetings, circulated drafts, and took comments from the public. Commenters have not explained what purpose additional public involvement would serve if the BLM were to prepare an EIS.
- *The BLM should complete a single EIS for the five oil shale RD&D projects.* The monitoring, mitigation and permitting requirements for the RD&D projects will reduce any adverse impacts to the human environment to an insignificant level. Furthermore, the EAs address the cumulative impacts for all of the RD&D projects under consideration. Each RD&D project is limited to 160 acres, which is an insignificant portion of the resources contained on or within the lands where Federal oil shale could be extracted, and even of the BLM administrative unit. Moreover, each RD&D project would employ a different new technology and thus are not the same project and would likely have fewer cumulative impacts than the same technology employed simultaneously at five different sites.

Narrow statement of Purpose and Need

Some commenters argue that the RD&D EAs utilized an impermissibly narrow statement of Purpose and Need. The BLM derived the statement of Purpose and Need from the mandate in section 369(a) of the Energy Policy Act of 2005 to lease Federal oil shale for research and development, and the willingness of Shell, Chevron and EGL to test promising technology at the scale of 160 acres. Other technologies proposed by other applicants were considered for other areas, but those proposals and the decisions about which to approve for RD&D projects are not part of the present EA. The Purpose and Need is not derived exclusively from the Companies' interests. Commenters failed to disclose a Purpose and Need statement that would meet the Congressional mandate in light of the Companies proposal to test technology.

Reasonable Range of Alternatives

Some comments assert that the EAs failed to consider enough alternatives. Documentation prepared under NEPA need only evaluate alternatives that would satisfy the needs and purposes of the project, even if there is only one alternative that satisfies those needs and purposes. The commenters proposed no other alternative which would meet the needs and purposes of the project. The BLM has found no additional, distinct satisfactory alternative to evaluate in detail.

Preference Right Acreage

Some comments assert that the Preference Right Acreage (PRA) leasing is ‘reasonably foreseeable” and should be analyzed at this time. As stated in the lease document and elsewhere, if and when any of the Companies are granted that preference right, an EIS will be completed before issuance of the lease to that additional acreage. The development of the preference acres is a mere possibility, contingent upon a number of factors, including a showing of commercially feasible and environmentally sound extraction technology. The present lease of 160 acre parcels does not irretrievably commit the resources within the PRA.

Comments that are outside the scope of the RD&D EAs

Comments pertaining to the Programmatic Environmental Impact Statement (PEIS) for commercial oil shale leasing and comments on the Research Development and Demonstration nomination review process are not within the scope of the RD&D EAs. Each of these programs is (or was) accompanied by a separate process and included ample opportunities for public involvement and comment.

The PEIS will prospectively evaluate the impacts of commercial-scale development of Federal oil shale. The present EAs assess the impacts of the RD&D 160-acre projects. The present EAs do not depend upon the programmatic EIS for the answers to any issue properly addressed in the EAs.

Table 1: Summary of Comment Submissions

| Commenter | Name | Commenter ID | Number of Submissions |
|--|--|--|-----------------------|
| <p>Organization Submissions</p> <ul style="list-style-type: none"> • Club 20 • Western Resource Advocates (WRA) (representing Colorado Environmental Coalition, Colorado Mountain Club, Center for Native Ecosystems, Californians for Western Wilderness, Environment Colorado, High Country Citizens' Alliance, National Wildlife Federation, Natural Resources Defense Council, Western Colorado Congress, Western Organization of Resource Councils, Western Resource Advocates, Wilderness Workshop, and the Wilderness Society) • William and Flora Hewlett Foundation | <ul style="list-style-type: none"> • Jim Evans • Robert Randall • Megan Williams and Victoria Stamper | <p>CL20 WRA</p> <p>HF</p> | <p>3</p> |
| <p>Federal Agency Submissions</p> <ul style="list-style-type: none"> • U.S. Department of Agriculture, White River National Forest (WRNF) • U.S. Department of Interior, U.S. Geological Survey (USGS) | <ul style="list-style-type: none"> • Maribeth Gustafson • Paul von Guerard | <p>WRNF USGS</p> | <p>2</p> |
| <p>State Agency and Local Submissions</p> <ul style="list-style-type: none"> • Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) • Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) • Colorado Division of Water Resources, State Engineers Office (CDWR) • Department of Natural Resources, Colorado Division of Wildlife (CDOW) • Rio Blanco County Board of County Commissioners • Town of Rangely | <ul style="list-style-type: none"> • Margie Perkins • Steve Gunderson • Dick Wolfe • Mark Konishi • Kim Cook • Jeff Devere | <p>CDPHE-APCD</p> <p>CDPHE-WQCD</p> <p>CDWR CDOW RBC RAN</p> | <p>6</p> |
| <p>Individual Submissions</p> <ul style="list-style-type: none"> • Fryer, Brent C. • Klusman, Dr. Ronald W. • Miller, Glen • McCreary, Tom | | <p>BF KLU GM McC</p> | <p>4</p> |
| <p>Total Submissions</p> | | | <p>15</p> |

Table 2 lists the comment category for each of the comments received, along with a summary of that comment followed by a response. Comments that were very similar were grouped and given a single response. In those situations, more than one comment ID is provided.

Table 2: Public Comment Issue Summary

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|--------------|--|---|
| Air Quality | KLU-04 | <p>Comment: Separation of hydrocarbon gases (particularly CH₄) from recycled CO₂ is not discussed. This is critical for evaluating the process from a climate change point-of-view.</p> | <p>Response: Reservoir simulation and modeling, as well as experimental validation of new recovery techniques for in-situ processing that has the potential to mitigate greenhouse gas emissions is currently being investigated. This research was not fully developed for analysis in the EA, but is ongoing and will develop further as additional information is gathered. Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO₂, and other harmful constituents (including CH₄), are being developed to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation. Reservoir simulation and modeling, as well as experimental validation of new recovery techniques for in-situ processing with the potential to mitigate so called “greenhouse gas” emissions is being investigated. Given the lack of regulations controlling potential CO₂ and CH₄ emissions, the uncertainty in quantifying potential emissions, and a lack of analysis methods to relate emissions to impacts, potential impacts on climate can not be quantified; however, based on the relatively small scale of the proposed RD&D project compared to world-wide CO₂ and CH₄ emissions, no significant impact to climate change are likely to occur.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|----------------------|--|--|
| Air Quality | KLU-05 | Comment: Mercury release to the atmosphere may be a problem and should be assessed during the RD&D program. | Response: Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO ₂ , and other harmful constituents (including mercury), are being developed and would be implemented to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation. |
| Air Quality | KLU-13 | Comment: No consideration seems to have been given for the direct detection of gas micro-seepage from the project area. | Response: Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO ₂ , and other harmful constituents, are being developed and would be implemented to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation. |
| Air Quality | RBC-05 WRA-09 | Comment: The BLM did not include air emissions from flaring in its air quality analysis. | Response: The flare would be used to burn small amounts of flash gas associated with an unforeseen upset condition during the production of shale oil in the pilot area. The use of the flare throughout the life of the project cannot be reasonably estimated. It is an unforeseeable and unmeasurable condition. NEPA regulations do not require analysis of unforeseeable and unmeasurable conditions |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|----------------------|---|--|
| Air Quality | WRA-10 HF-22 | Comment: Chevron proposes to use CO ₂ both to induce fractures in the shale and to heat it to a pyrolytic temperature, yet the EA does not state how much CO ₂ would be used or how much would be released to the atmosphere, and it fails to address the impacts from CO ₂ and other greenhouse gas emissions. | Response: The amount of CO ₂ required to achieve the desired fracture network would depend upon the local rock mechanics. A formation core would provide the necessary information for modeling to make this estimate. Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO ₂ , and other harmful constituents, are being developed to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation. Reservoir simulation and modeling, as well as experimental validation of new recovery techniques for in-situ processing with the potential to mitigate so called "greenhouse gas" emissions are being investigated. Given the lack of regulations controlling potential CO ₂ emissions, the uncertainty in quantifying potential emissions, and a lack of analysis methods to relate emissions to impacts, potential impacts on climate can not be quantified; however, based on the relatively small scale of the proposed RD&D project compared to world-wide CO ₂ emissions, no significant impact to climate change are likely to occur. |
| Air Quality | WRA-10a HF-18 | Comment: The EA fails to establish Piceance Basin air quality baseline. For some pollutants, the air monitoring data was collected from areas far removed from the Chevron site (i.e. NO ₂ from Ignacio; Ozone from Mesa Verde; PM _{2.5} from Grand Junction) | Response: The background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions. |
| Air Quality | CDPHE-APCD-01 | Comment: CO modeled but not included in EA summary | Response: Based upon atmospheric dispersion modeling, it was determined that significant CO impacts would not occur. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|---------------|---|---|
| Air Quality | CDPHE-APCD-02 | Comment: The number of near field sources modeled differs significantly from the number listed on page 16 of the EA. | Response: The equipment listed on page 16 is an abbreviated list summarized from the Plan of Operations that represents the typical equipment used for oil and gas drilling operations. During the air quality analysis as part of the environmental assessment, more detailed emission source list was provided for modeling of near-field emission sources. The EA has been revised to clarify the difference. |
| Air Quality | CDPHE-APCD-08 | Comment: Statement that the road is paved and the area including Dudley Bluffs will not be affected by fugitive dust generated by project-related traffic is untrue. | Response: The EA has been revised to recognize that there would be fugitive dust emissions from the paved road, however they will be minimal and not cause a significant impact. |
| Air Quality | CDPHE-APCD-12 | Comment: Regulatory framework: The permitting section on page 16 is incomplete. | Response: The EA text has been revised to indicate: 1) any emissions source with the potential to emit any “criteria” pollutant in excess of 2 tons per year, or any “non-criteria” in excess of the corresponding de minimis level, including Hazardous Air Pollutants (Colorado Regulation Number 3, Part A, Appendix A), must submit an Air Pollution Emissions Notice (APEN) to the CDPHE-APCD for approval prior to operation; and 2) Emissions sources required to file an APEN may also be subject to Construction Permitting requirements as listed in Colorado Regulation Number 3, Part B; 3). APENs must be updated annually if operating conditions change, or otherwise expire every five years. In addition, BLM will not approve any activity which does not comply with all applicable local, state and federal air quality regulations. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|------------------------|--|---|
| Air Quality | HF-03 CDPHE-APCD-13 | Comment: The BLM is basing its fugitive dust estimates on a control efficiency of 50%. The EA does not indicate how this will be enforced. The EA does not indicate how this will be enforced. The CDPHE requests further mitigation options be implemented to control fugitive dust. | Response: Fugitive dust mitigation measures are included in the Subalternative Proposed Action (Appendix A of the EA) with Additional Mitigation. At a minimum, a 50% control efficiency was assumed for fugitive dust emissions using water as a dust suppressant. This is a conservative estimate as other dust inhibitors are available with higher control efficiencies. The BLM will require at least 50% control to mitigate fugitive dust impacts. In addition, dust control may be addressed as a condition of approval during the permitting process with CDPHE-APCD. |
| Air Quality | CDPHE-APCD-01 | Comment: When modeling is conducted for the CDPHE, BPIP or the Building Profile Input Program, is required if there will be buildings present on the site to accurately predict the effect of building downwash on air pollutant concentrations and locations. It is indicated on page 16 that buildings will be present on site. | Response: Several modular buildings or trailers would be brought onsite to house office space, basic lab facilities, and site security. Chevron would initiate a pre-application consultation with the CDPHE-APCD prior to beginning operations, and permit requirements and any additional modeling parameters would be determined at that time. |
| Air Quality | HF-01 | Comment: Fugitive emissions from commuting vehicles were not included in the PSD increment and visibility modeling. | Response: Fugitive emissions from commuting vehicles were conservatively estimated and modeled as part of the construction activities. No significant impacts were predicted when combined with other emissions, and more remote road impacts would be even less. These emissions are minimal, would deposit rapidly, and would have minimal regional impact. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|--------------|--|--|
| Air Quality | HF-02 | Comment: Air Resource Specialists only modeled emissions occurring on roads within leased property. | Response: Emissions associated with fugitive dust from traffic as well as associated tailpipe exhaust emissions, were quantified for the entire length of the access road. However, only a short segment of road emissions immediately around the proposed project site leading into the project site was modeled, based on the premise that the greatest impact of traffic anywhere along the access road would be less than where the road emissions interact with the other project emissions, such as where the traffic enters the project site. Therefore, the modeling did address the maximum potential access road emissions impacts. |
| Air Quality | HF-04 | Comment: The BLM did not quantify or model any windblown dust emissions. | Response: Windblown dust emissions would be minimal based on using committed mitigation techniques such as road watering and graveling of the project area. |
| Air Quality | HF-05 | Comment: Compressor and diesel generator emissions are based on Tier II emission standards. | Response: Chevron is committed to using Tier II emission standard equipment (or better) technology for this project. Therefore, BLM would require this committed mitigation as part of a use authorization. The enforcement will be addressed during the permitting process with the CDPHE-APCD. The BLM will not approve any activity which does not comply with all applicable local, state and federal air quality regulations. |
| Air Quality | HF-06 | Comment: The BLM assumed that all natural gas compressors would be controlled with NSCR. | Response: Chevron is committed to using Non-selective Catalytic Reduction (NSCR) technology for this project. Therefore, BLM would require this committed mitigation as part of a use authorization. The enforcement will be addressed during the permitting process with the CDPHE-APCD. The BLM will not approve any activity which does not comply with all applicable local, state and federal air quality regulations. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|--------------|---|--|
| Air Quality | HF-07 | Comment: Fugitive emissions from the in-situ retort process may include VOC, H ₂ S, HAP and CO ₂ emissions, none of which are quantified or discussed. | Response: Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO ₂ , and other harmful constituents (including VOC, H ₂ S, and HAPs), are being developed and would be implemented to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation. |
| Air Quality | HF-08 | Comment: The BLM cannot rely on the background monitoring data to reflect all existing sources in or affecting the region. | Response: The background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions. In addition, BLM is planning to conduct a regional air quality impact assessment to support potential revisions to its White River Resource Management Plan. |
| Air Quality | HF-09 | Comment: The monitoring data have not been shown to reflect maximum air pollutant concentrations in the vicinity of the Chevron Project. | Response: The background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions (including the project area.) As shown in Table 4, these background data were used to determine the maximum potential air quality impacts. |
| Air Quality | HF-10 | Comment: The BLM failed to provide any analysis of the subalternative - proposed action with mitigation. | Response: The air quality analysis provided a conservative estimate of potential impacts. Further mitigation (i.e.; the sub alternative) would only decrease this estimation even further. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|--------------|---|--|
| Air Quality | HF-11 | Comment: It does not appear that the BLM adequately assessed maximum cumulative near field impacts. | Response: A cumulative air quality impact assessment was presented in Table 23 based on potential operational emissions from all five oil shale RD&D projects, as well as the current ExxonMobil Piceance Creek Development Project. Maximum predicted cumulative far-field impacts were presented for receptors locations within the Piceance Basin, Dinosaur National Monument, and the Flat Tops Wilderness Area. Logically, the maximum impact from any one of these cumulative emission sources would be greater close to the individual project (reported as direct concentrations in Table 4.) |
| Air Quality | HF-12 | Comment: The modeling analyses should have modeled additional years of meteorological data as required by EPA regulations. | Response: The EPA's <i>Guideline on Air Quality Models</i> (40 CFR 51 Appendix W) addresses the regulatory application of air quality models for assessing criteria pollutants under the Clean Air Act. The Guideline does recommend that "at least three years of meteorology data (need not be consecutive) may be used if mesoscale meteorology fields are available" when analyzing long range transport. However, this guidance is not "required by EPA regulations," nor necessarily applicable to NEPA analyses. BLM determines the analytical procedure for analyzing potential air quality impacts on a case-by-case basis, considering all available scientific methods appropriate for the specific situation. |
| Air Quality | HF-13 | Comment: The Chevron EA failed to include an analysis of VOC emissions or its impact on Ozone concentrations. | Response: Currently there are no acceptable methods to predict potential ozone impacts on a local level. Ozone analysis is applicable on a regional scale using a photochemical model to fully capture effects ozone producing chemicals from both local and distant sources. The BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|--------------|--|---|
| Air Quality | HF-14 | <p>Comment: The Chevron EA failed to include an assessment of hazardous air pollutant (HAP) emissions or impacts.</p> | <p>Response: HAP emissions were quantified but not modeled. Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO₂, and other harmful constituents (including VOC, H₂S, and HAPs), are being developed and would be implemented to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation.</p> |
| Air Quality | HF-15 | <p>Comment: The BLM failed to address the impacts from CO₂ and other greenhouse gas emissions.</p> | <p>Response: Atmospheric and subsurface monitoring plans to detect and mitigate any potential for release of CO₂, and other harmful constituents, are being developed to gather baseline data and to monitor the process for the duration of the RD&D project. All monitoring plans will be approved by the BLM prior to implementation. Reservoir simulation and modeling, as well as experimental validation of new recovery techniques for in-situ processing with the potential to mitigate so called “greenhouse gas” emissions are being investigated. Given the lack of regulations controlling potential CO₂ emissions, the uncertainty in quantifying potential emissions, and a lack of analysis methods to relate emissions to impacts, potential impacts on climate can not be quantified; however, based on the relatively small scale of the proposed RD&D project compared to world-wide CO₂ emissions, no significant impact to climate change are likely to occur.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
|------------------|--------------|---|--|
| Air Quality | HF-16 | <p>Comment: The EA failed to provide or evaluate mitigation measures for the significant visibility and sulfur and nitrogen deposition impacts at Flat Tops Wilderness Area.</p> | <p>Response: A cumulative air quality impact assessment was presented in Table 23, demonstrating that no significant sulfur or nitrogen deposition impacts would occur. In addition, although the Table indicated a potential for a “just noticeable change” in visibility to occur from 13 to 20 days per year, the EA stated “given the conservative assumptions incorporated into the cumulative visibility impact analysis ... and considering the magnitude, frequency, duration, and timing of the predicted impacts, it is unlikely that perceptible visibility impacts would actually occur from the Proposed Action when combined with other activities in the Piceance Basin.” In addition, a re-analysis of potential impacts from the proposed EGL RD&D Project has reduced the conservatively modeled cumulative visibility impacts from 11 to 16 days per year, which again are unlikely to actually occur (The EGL model was re-analyzed and from that analysis, the BLM determined that there was no need to re-run the Chevron or Shell model).</p> <p>In addition, Chevron is committed to using non-selective catalytic reduction (NSCR) technology on gas fired combustion units as well as using Tier II or better emission standards for diesel combustion engines/generators. Therefore, BLM would require this committed mitigation as part of a use authorization. The enforcement will be addressed during the permitting process with the CDPHE-APCD. The BLM will not approve any activity that does not comply with all applicable local, state and federal air quality regulations.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | CDOW-11 RBC-26 | <p>Comment: The reduction in the acid neutralizing capacity in Trapper's Lake, considered an important meta-population for Colorado River Cutthroat trout, (and by inference, impacts to other mountain lakes in the Flattops Wilderness Area), is an important finding that should not be discounted. Careful baseline data should be collected and analyses conducted to ensure that increasing acidity due to the energy production itemized by the RFFD is abated/mitigated before these impacts are allowed to occur.</p> <p>Asks if the BLM will perform or require oil shale companies to monitor acid neutralizing capacity at Trappers and Ned or Upper Ned Wilson Lakes to ensure thresholds are not being exceeded.</p> | <p>Response: The analysis of potential changes in lake chemistry was based on available data collected by the USGS and the Forest Service. It is unknown whether or not these agencies plan to continue their existing monitoring efforts.</p> |
| Air Quality | WRNF-01 | <p>Comment: The analysis of direct and indirect air quality impacts does not appear to have addressed all impacts air quality related values in Class I areas such as the Flat Tops Wilderness. Nor is it clear if a PSD increment analysis was performed for Class I areas. The USFS requests that the results of such analyses be included in the EA.</p> | <p>Response: As required by NEPA, the air quality impact analysis focused on potentially significant environmental issues and alternatives. Table 23 demonstrated that applicable PSD Class I increments would not be exceeded from the cumulative emission sources analyzed.</p> |
| Air Quality | WRNF-03 CDPHE- APCD-07 HF-14 | <p>Comment: Statements in the EA indicating that cumulative emission source impacts would not be important because the days of significantly reduced visibility would occur either in the winter months or during a possible precipitation event are value judgments that can only be made by the Federal Land Manager that administers the potentially impacted area. Neither of these conditions would provide for a less stringent visibility standard under state or federal law.</p> | <p>Response: The contention that only the Federal Land Manager that administers the potentially impacted area can determine whether or not a predicted impact would be significant may be true for permitting activities, however it is the responsibility of the administrative officer to determine the significance of impacts in a NEPA document. The BLM used its best professional judgment to interpret the results from the highly conservative AERMOD model, considering the magnitude, frequency, duration, and timing of the predicted impacts, and determined it is unlikely that perceptible visibility impacts would actually occur.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | CDPHE-APCD-06 | <p>Comment: The modeling results are deemed inadequate by the APCD. The AERMOD results for both Dinosaur National Monument and Flat Tops Wilderness Class I area may significantly underestimate impacts.</p> | <p>Response: The BLM determined using the conservative AERMOD model was an adequate for the EA analysis. Although the CALPUFF model would produce less conservative results, its use is considerably more intensive. If the more conservative analysis demonstrates that significant impacts are unlikely to actually occur, a less conservative analysis is not necessary. Therefore, CALPUFF was not used for this project. In addition, BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model. The general public and agencies should make their modeling preferences known to BLM during the applicable NEPA scoping period.</p> |
| Air Quality | CDPHE-APCD-03 | <p>Comment: National Park Service recommends spacing of 1,400 meters for the Flat Tops Wilderness Area. The receptor grid does not extend to the Flat Tops Wilderness Area, only to the edges of the White River National Forest. The receptors representing the boundary of Dinosaur National Monument do not match official Colorado Class I Area Boundary maps.</p> | <p>Response: Flat Tops Wilderness Area modeling receptors were obtained from the NPS ARD data set. However, given the large number of receptors presented, a subset was used to optimize AERMOD processing. In addition, several receptors were adjusted to correspond to the Wilderness Area boundary, and others were added for locations of high elevation. Both of these adjustments were made to conservatively identify points of maximum potential impact. BLM is aware of the CDPHE-APCD's Colorado Class I SO₂ area image maps, but not specific modeling receptor inventories. Therefore, the Dinosaur National Monument was digitized specifically for this project (emphasizing boundaries and points of high elevation.)</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | CDPHE-APCD-04 | <p>Comment: A complete (NAAQS/CAAQS and PSD Increment) cumulative analysis was not completed for the Oil Shale Research Development Demonstration Project. Impacts do not include existing sources beyond the five Oil Shale Development facilities or applicable background concentrations. In addition, the cumulative impacts should be compared to both the NAAQS/CAAQS and the applicable PSD Increments</p> | <p>Response: A cumulative air quality impact assessment was presented in Table 23 based on potential operational emissions from all five oil shale RD&D projects, as well as the current ExxonMobil Piceance Creek Development Project. Maximum predicted cumulative far-field impacts were presented for receptors locations within the Piceance Basin, Dinosaur National Monument, and the Flat Tops Wilderness Area, and compared to applicable NAAQS/CAAQS and PSD Increments as NEPA thresholds of significance. In addition, the background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions (including other regional operating emission sources.) Finally, BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model. The general public and agencies should make their modeling preferences known to BLM during the applicable NEPA scoping period.</p> |
| Air Quality | CDPHE-APCD-05 | <p>Comment: Modeling results for 24-hour and annual PM₁₀, 3-hour, 8-hour, and annual SO₂ exceed modeling significance levels. Therefore, an impact analysis that includes the proposed source and all nearby sources as well as the applicable background concentration should be conducted to determine cumulative impacts.</p> | <p>Response: Significant Impact Levels (SILs) are used by Air Quality Regulatory Agencies to prioritize modeling activities and permit requirements under the Clean Air Act, and are not applicable to determine potential significant impacts under NEPA. The BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | WRNF-03 RBC-27 | <p>Comment: The EA states that the BLM is preparing a less conservative modeling analysis using CALPUFF to better quantify visibility impacts to the Flat Tops Wilderness. The USFS requests that the BLM work with the Service in developing the protocol for the CALPUFF model and disclose the modeling results within this NEPA analysis before any final decision is made regarding this project.</p> <p>Asks if the BLM will redo the modeling completed for this impact analysis using CALPUFF.</p> | <p>Response: The BLM determined using the conservative AERMOD model was an adequate for the EA analysis. Although the CALPUFF model would produce less conservative results, its use is considerably more intensive. If the more conservative analysis demonstrates that significant impacts are unlikely to actually occur, a less conservative analysis is not necessary. Therefore, CALPUFF was not used for this project. In addition, BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model. The general public and agencies should make their modeling preferences known to BLM during the applicable NEPA scoping period.</p> |
| Air Quality | WRNF-04 CDPHE-APCD-07 | <p>Comment: The visibility Threshold in Table 23 incorrectly indicates that visibility in the Flat Tops Wilderness is impacted when more than one day a year is greater than 1.0 deciview (dv). ANY day EQUAL TO 1.0 dv or greater is the threshold for adverse visibility impacts. The USFS requests the table be revised to correctly state this standard.</p> | <p>Response: The table has been revised to indicate the applicable threshold is “one day or more per year.”</p> |
| Air Quality | WRNF-05 | <p>Comment: The USFS uses modeling results that identify days at or greater than 0.5dv as a concern threshold and request that, with respect to the Flat Tops Wilderness, the analysis include an assessment of visibility impacts of 0.5 dv or greater and that the results be disclosed in a NEPA document.</p> | <p>Response: The BLM recognizes the Forest Service’s use of 0.5 dv as a significance threshold when analyzing potential direct impacts from a proposed facility subject to New Source Review for the Prevention of Significant Deterioration under Section 165 of the Clean Air Act (as described in the FLAG Guidance Report.) However, 0.5 dv represents one half of a “just noticeable change” in visibility. BLM uses a 1.0 dv “just noticeable change” as a NEPA analysis threshold because any lower level would not be perceptible.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | RBC-08 | <p>Comment: Questioned is PM10 values include PM2.5 values (i.e., are they additive?)</p> | <p>Response: The PM_{2.5} and PM₁₀ values are not additive. PM_{2.5} is a subset of PM₁₀. PM₁₀ is particulate matter equal to or less than 10 microns in diameter. PM_{2.5} is particulate matter equal to or less than 2.5 microns in diameter. PM_{2.5} is therefore included in PM₁₀ as well because it has a diameter less than 10 microns. In addition, both pollutants have different public health and welfare effects, so their applicable Ambient Air Quality Standards are different.</p> |
| Air Quality | RBC-09 | <p>Comment: Noted a discussion about occasional levels of ozone approaching federal standards, and questioned if other local sources other than regional transport or stratospheric ozone subsidence contribute to this condition.</p> | <p>Response: The background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions. The ozone readings presented in Table 3 are from the ozone monitoring station operated by the National Park Service at Mesa Verde CO, as well as the CASTNET Network at Gothic CO, Mesa Verde CO, and Canyonlands UT. There are no ozone monitoring stations in the Piceance Basin. Local oil shale, oil and gas operations may emit criteria pollutants that contribute to the formation of ozone. Currently there are no acceptable methods to predict potential ozone impacts on a local level. Ozone analysis is applicable on a regional scale using a photochemical model to fully capture effects ozone producing chemicals from both local and distant sources. The BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | RBC-10 | <p>Comment: Questioned if the air pollutant model assumed control of particulate sources and, if so, at what effectiveness.</p> | <p>Response: At a minimum, a 50% control efficiency was assumed for fugitive dust emissions using water as a dust suppressant. This is a conservative estimate as other dust inhibitors are available with higher control efficiencies. The BLM will require at least 50% control to mitigate fugitive dust impacts. In addition, dust control may be addressed as a condition of approval during the permitting process with CDPHE-APCD.</p> |
| Air Quality | CDPHE-APCD-14 WRA-32 | <p>Comment: The cumulative analysis should include all of the sources in the area, not just the research and development projects.</p> <p>The EA improperly limits its cumulative impacts analysis to the potential impacts of the 5 RD&D projects and the 5,000-well Piceance Development Project, rather than all projects in Table 22.</p> | <p>Response: A cumulative air quality impact assessment was presented in Table 23 based on potential operational emissions from all five oil shale RD&D projects, as well as the current ExxonMobil Piceance Creek Development Project. Maximum predicted cumulative far-field impacts were presented for receptors locations within the Piceance Basin, Dinosaur National Monument, and the Flat Tops Wilderness Area, and compared to applicable NAAQS/CAAQS and PSD Increments as NEPA thresholds of significance. In addition, the background estimate for air quality of Piceance Basin was provided by the CDPHE-APCD, and constitutes the best available data to establish regional background air quality conditions (including other regional operating emission sources.) Finally, BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model. The general public and agencies should make their modeling preferences known to BLM during the applicable NEPA scoping period.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | CDPHE-APCD-07 WRA-33 | <p>Comment: It is not acceptable to discount potential cumulative visibility impacts because they occur on winter days or when a precipitation event occurred. Precipitation events are generally not going to affect an entire Class I Area, and a day should not be removed based on meteorology at one site. In 2004, at White River National Forest IMPROVE site, thirteen of the twenty-four best visibility days (20% best visibility) fell within the November to January timeframe. The trend for other years and other nearby Colorado Class I areas is similar. A visitor to the Flat Tops Wilderness Area during the wintertime should be able to experience natural background visibility. For the public and other agencies to evaluate the potential impacts, the percent change in extinction should be reported. Impacts should not be given as ranges. The magnitude, frequency and duration of predicted change in extinction should be reported in revisions of this analysis. The APCD believes a Finding of No Significant Impact is not justified with predicted visibility impacts of this frequency and magnitude to the Flat Tops Wilderness Area.</p> <p>There can't be any degradation to air just because no one is there to notice. BLM is required to analyze and disclose all significant air quality impacts.</p> | <p>Response: The air quality impact assessment was performed to identify potential significant air quality impacts under NEPA. It is not a permitting or a Regional Haze Rule analysis under the Clean Air Act. A cumulative air quality impact assessment was presented in Table 23, indicating a potential for a "just noticeable change" in visibility to occur from 13 to 20 days per year. However, the EA clearly stated "given the conservative assumptions incorporated into the cumulative visibility impact analysis ... and considering the magnitude, frequency, duration, and timing of the predicted impacts, it is unlikely that perceptible visibility impacts would actually occur from the Proposed Action when combined with other activities in the Piceance Basin." In addition, a re-analysis of potential impacts from the proposed EGL RD&D Project has reduced the conservatively modeled cumulative visibility impacts from 11 to 16 days per year, which again are unlikely to actually occur. (The EGL model was re-analyzed and from those results, the BLM determined that it was not necessary to re-analyze the Chevron or Shell model). Finally, reviewers are welcome to review BLM's visibility analysis data, which quantifies potential visibility impacts, in order to evaluate the magnitude, frequency, duration, and timing of the predicted impacts.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | CDPHE-APCD-03 | <p>Comment: The predicted visibility impacts and acid deposition data may change considerably if the appropriate modeling methodology is used to evaluate the predicted impacts</p> | <p>Response: The BLM determined using the conservative AERMOD model was an adequate for the EA analysis. Although the CALPUFF model would produce less conservative results, its use is considerably more intensive. If the more conservative analysis demonstrates that significant impacts are unlikely to actually occur, a less conservative analysis is not necessary. Therefore, CALPUFF was not used for this project. In addition, BLM is planning to conduct a regional air quality impact assessment to support an amendment to its White River Resource Management Plan, using CALPUFF or another more intensive but less conservative model. The general public and agencies should make their modeling preferences known to BLM during the applicable NEPA scoping period.</p> |
| Air Quality | CDPHE-APCD-10 | <p>Comment: The EA does not give adequate attention to the possibility of permanent groundwater contamination. It does not discuss the impacts of air emissions of these contaminants, which could occur.</p> | <p>Response: The EA discusses the importance of containment of the subsurface process in detail. Permanent groundwater contamination is not likely given that Chevron cannot proceed with the operation if containment is lost. Containment would be verified early in the process so as to maintain the integrity of the confining layer and protect the process and the water resources. Post Operation measures would further mitigate the potential for contaminant release, and therefore reduce or eliminate the possibility for air impacts associated with groundwater contamination.</p> |
| Air Quality | CDPHE-APCD-26 | <p>Comment: The SO₂ emissions seem disproportionately high in relation to the NO_x and CO emissions.</p> | <p>Response: The BLM has confirmed the potential SO₂ emissions are appropriate based on Chevron's proposed operation. However, the enforcement of actual SO₂ emissions will be addressed during the permitting process with the CDPHE-APCD. In addition, the BLM cannot approve any activity that does not comply with all applicable local, state and federal air quality regulations.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | CDPHE-APCD-27 | Comment: Colorado does implement and enforce the federal air quality standards for PM2.5 and 8-hour ozone through permitting and air quality plans. It is incorrect to state that EPA is solely responsible for implementing these standards. | Response: The EA identifies the CDPHE-APCD as having the primary authority and responsibility to review permit applications and to require emission permits, fees and control devices, prior to construction and/or operation. The EA has been revised to correct the assumption that the EPA is responsible for implementing these standards. |
| Air Quality | CDPHE-APCD-14 | Comment: The APCD re-iterates that the BLM must examine the air quality impacts of commercial-scale operations before commercial construction is allowed to proceed. | Response: If the RD&D technology is shown to be successful, an EIS must be prepared to analyze impacts of potential commercial scale operations before a decision approving such operations can be authorized. |
| Air Quality | CDPHE-APCD-13 | Comment: The APCD suggests further mitigation options be employed, such as: erosion control measures during construction activities (fencing, straw bales), dust control during any construction activities including control of bare dust areas during wind events and covers on topsoil and other stockpiles. | Response: The suggested mitigation measures are included in the subalternative, in Appendix A, and in Chevron's Stormwater Management Plan. |
| Air Quality | WRA-34 | Comment: The BLM acknowledges that the direct impacts of the proposed action will cause violations under the Clean Air Act, yet it fails to acknowledge that this is a significant impact | Response: Neither Table 4 nor Table 23 indicate any exceedances of any applicable air quality standards. In addition, BLM cannot approve any activity that does not comply with all applicable local, state and federal air quality regulations. |
| Air Quality | WRA-35 | Comment: The BLM claims no violations of any air quality standards are expected to occur as a result of the mitigation measures in the subalternative, but the EA does not indicate any analysis to support this conclusion. | Response: The air quality analysis provided a conservative estimate of potential impacts. Further mitigation (i.e.; the sub alternative) would only decrease this estimation even further. Neither Table 4 nor Table 23 indicates any exceedances of any applicable air quality increments. In addition, BLM cannot approve any activity that does not comply with all applicable local, state and federal air quality regulations. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Air Quality | WRA-36 | Comment: The maximum cumulative impacts are much less than the impacts predicted from just Chevron's project | Response: A cumulative air quality impact assessment was presented in Table 23 based on potential operational emissions from all five oil shale RD&D projects, as well as the current ExxonMobil Piceance Creek Development Project. Maximum predicted cumulative far-field impacts were presented for receptors locations within the Piceance Basin, Dinosaur National Monument, and the Flat Tops Wilderness Area. Logically, the maximum impact from any one of these cumulative emission sources would be greater close to the individual project (reported as direct concentrations in Table 4.) |
| Water Quality | | | |
| Water Quality | KLU-09 WRA-46 | Comment: The appropriate water quality data are not planned for measurement of the potential problem with trace elements in ground and/or surface water. The BLM should include a stipulation requiring Chevron to monitor groundwater conditions intensively until a complete understanding of the contaminants and the short-term response of the groundwater systems to the process is understood, and continue to monitor for the unexpected release of contaminants indefinitely. | Response: The EA identifies a comprehensive water-monitoring and response program as an integral component of the proposed process. Chevron will develop a comprehensive water monitoring and response plan in cooperation with the BLM, USGS, CDPHE, and Industry. The monitoring of groundwater resources will continue until such time as the groundwater regime is deemed acceptable for stabilization and abandonment. |
| Water Quality | KLU-08 | Comment: The spent retort may be converted from a chemically reducing to an oxidizing condition, and would increase the aqueous mobility of several environmentally sensitive trace elements. | Response: Chevron is developing technologies and methods to significantly reduce the temperatures required to decompose the kerogen, therefore the processes and products may have properties that are not consistent with a traditional retort. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | CDWR-04 CDPHE-WQCD-17 | Comment: All water wells must be constructed in compliance with the Water Well Construction Rules by a contractor licensed by the State of Colorado. Please note that all monitoring wells need to meet the minimum construction standards established by the Division of water resource "Well Construction Rules" 2 CCR 402-2. | Response: All water wells will be constructed in compliance with all rules, regulations, and permit requirements. A Colorado State licensed contractor will conduct all well construction and pump installations. |
| Water Quality | CDPHE-WQCD-13 | Comment: Please include a discussion of changes in hydraulic conductivity due to heating, and any potential changes that may impact the performance of the confining layers. | Response: The EA has been revised to include Chevron's intent to develop technologies and methods to significantly reduce the temperatures required to decompose the kerogen, and than post operation measures that would employ methods for restoring the function of the confining layer by grouting the fracture network to prevent the mixing of aquifers to minimize any impacts to groundwater resources. Therefore, the processes and products may have properties that are not consistent with a traditional retort. |
| Water Quality | CDPHE-WQCD-14 | Comment: Groundwater flow will be preferentially towards the fractured area of the production zone. This statement would only apply if grouting of the production zone were the final Post Operation measure. Please modify this statement to reflect that it is dependent upon the selected Post Operation measures that may be employed. | Response: The EA has been revised as suggested. |
| Water Quality | CDPHE-WQCD-15 | Comment: All spills must be reported to the CDPHE environmental release and incident reporting line. Please include this in any revised or updates spill response plans. | Response: The SPCC Plan will include all of the appropriate reporting information. |
| Water Quality | CDPHE-WQCD-16 | Comment: Appendix A currently indicates that a Minimal Industry Discharge Permit (MINDI) would be obtained, likely for the process water discharge. The MINDI is a general permit that is currently expired and the Division is uncertain at this time about the types of process water discharges that will be covered by a renewed MINDI. | Response: Chevron would obtain all appropriate permits. The discharge of process water is not anticipated, as no upgrading would be conducted onsite. The MINDI permit language has been stricken from the EA and replaced with the appropriate permit requirements. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | CDPHE-WQCD-03 | Comment: Please add a discussion regarding potential post-closure impacts, and mitigation, to regional groundwater flow and local stream flow due to dewatering activities. | Response: Chevron does not anticipate dewatering. If any dewatering becomes necessary, it would not likely be enough to produce a drawdown cone. Chevron's response plan will include measures to mitigate impacts to flows in the event that a large volume of water is encountered and requires dewatering of that scale. |
| Water Quality | CDPHE-WQCD-04 | Comment: Please describe in more detail the type and nature of process wastewater discharge expected in the later phases of the program. | Response: Any wastewater would be trucked offsite. There will be no upgrading or processing of the oil shale products onsite, therefore no process wastewater would be generated. |
| Water Quality | CDPHE-WQCD-05 | Comment: The final sentence on page 58, 6 th paragraph should read: "These provisions are applicable only if a discharge is made." | Response: The EA has been revised as suggested. |
| Water Quality | CDPHE-WQCD-06 | Comment: Suggest a rewrite to clarify that there is minimum in-stream flow that may support a more diverse aquatic community. It currently implies that minimum in-stream flow is a requirement. CDPHE does not have the authority to require minimum flows. | Response: The EA has been revised as suggested. |
| Water Quality | CDPHE-WQCD-07 | Comment: Year-round flow is not a pre-requisite for the support of aquatic life, and aquatic life can occur on a seasonal basis. Please modify the statement that Hunter Creek does not provide sufficient year-around water to support aquatic life to reflect this possibility. | Response: The EA has been revised as suggested. |
| Water Quality | CDPHE-WQCD-08 | Comment: You may want to state that the CDPHE-WQCC Regulation 61 discusses the implementation of the provisions of Regulation 39 in discharge permits. | Response: The EA has been revised as suggested. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | CDPHE-WQCD-09 | Comment: In addition to erosion potentially contributing to salinity levels in the Colorado River Basin, a process water discharge would also have the potential to contribute to salinity levels. | Response: The EA has been revised to include process water discharge as a potential source of increased salinity levels. |
| Water Quality | CDPHE-WQCD-10 | Comment: Please add additional discussion regarding the local extent of alluvial aquifers, as well as the potential impacts the proposed activity may have on these aquifers. | Response: A formation core would provide more information regarding the local aquifers (i.e. Extent, flow patterns, depth, etc.). Site-specific aquifer characteristics are not yet known. |
| Water Quality | CDPHE-WQCD-11 | Comment: The USGS defines fresh water as water with TDS less than 1,000 mg/L. The SDWA recognizes potable water as water with a TDS of less than 3,000 mg/L.. Please strike this statement or modify to reflect the higher upper limit of 3,000 mg/L. | Response: The EA has been revised to reflect the higher upper limit of 3,000 mg/L. |
| Water Quality | CDPHE-WQCD-12 | Comment: The Water Quality Environmental Consequences of the Proposed Action section does not describe any possible consequences associated with a process water discharge, while the description of the proposed action and Compliance and Monitoring and Appendix A imply that there may be a process water discharge. The document needs to be clear on this issue and the possible impacts should be understood. | Response: Chevron does not anticipate a process water discharge, and the possibility was addressed as an unforeseen upset condition. The impacts of an unforeseeable and unmeasurable condition throughout the life of the project cannot be reasonably estimated. NEPA regulations do not require analysis of unforeseeable and unmeasurable conditions. These conditions would be addressed in Chevron's response plan. |
| Water Quality | CDPHE-WQCD-13 | Comment: Please include a discussion of changes in hydraulic conductivity due to heating, and any potential changes that may impact the performance of the confining layers. | Response: Chevron is developing technologies and methods to significantly reduce the temperatures required to decompose the kerogen. This, in combination with the small-scale of the operation and the importance of containment to Chevron's proposed process should reduce any possibility of changes to hydraulic conductivity. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | CDPHE-WQCD-14 | Comment: Depending upon which proposed Post Operation measures are employed, the proposed fracturing within the production zone will impact the regional transmissivity. | Response: Language was added to reflect that impacts to the regional transmissivity would be dependent on the post-operational methods employed. |
| Water Quality | CDPHE-WQCD-15 | Comment: All spills must be reported to the CDPHE environmental release and incident reporting line. Please include this in any revised or updates spill response plans. | Response: The SPCC Plan will include all of the appropriate reporting information. |
| Water Quality | CDWR-05 CDPHE-WQCD-17 | Comment: All water wells must be constructed in compliance with the Water Well Construction Rules by a contractor licensed by the State of Colorado. Please note that all monitoring wells need to meet the minimum construction standards established by the Division of water resource "Well Construction Rules" 2 CCR 402-2. | Response: All water wells will be constructed in compliance with all rules, regulations, and permit requirements. A Colorado State licensed contractor will conduct all well construction and pump installations. |
| Water Quality | CDPHE-WQCD-18 | Comment: With regard to the statement "A fundamental element of Chevron's proposed pilot testing would involve developing more effective methods for detecting any connections between the upper and lower aquifers where the intermingling of aquifers could occur and avoiding them." Please include a discussion of integrating a dedicated system for measuring hydraulic head. | Response: The EA has been revised to state that Chevron would consider integrating a dedicated system for measuring hydraulic head as a potential method for assessing the performance of the confining layers. |
| Water Quality | CDPHE-WQCD-19 | Comment: Please include a reference that the appropriate regulatory standard is defined in 5 CCR 1002-41, The Basic Standards for Groundwater, under section 41.5(C)(6) addressing the Interim Narrative Standards. The text should include that this is the required State groundwater quality standard that needs to be achieved at site closure. | Response: The EA has been revised to include this state groundwater quality standard. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | CDPHE-WQCD-20 | Comment: Please provide the complete citation for the reference (EPA, 1999) in the References cited section. | Response: The EA has been revised to include this reference in the References Cited. |
| Water Quality | CDPHE-WQCD-21 | Comment: Suggests that the statement “Direct in-stream impacts associated with construction runoff and increased sediment load during initial storm events following construction would have the greatest impacts on water resources” be rephrased to state that increased sediment loads would only occur in the event that best management practices are not properly designed and implemented. | Response: The EA has been revised as suggested. |
| Water Quality | CDPHE-WQCD-22 | Comment: It would be helpful to directly state the intent to meet state-wide basic standards and not pursue site-specific water quality classifications and standards for this project. | Response: The EA states that “The Proposed Actions would all perform suitable reclamation activities to meet Colorado Ground Water Quality Standards at compliance well locations, resulting in no cumulative downgradient impacts.” Compliance well locations would not necessarily be limited to the 160-acre tract. Consideration would be given to re-initiating monitoring at discontinued USGS stations in the vicinity. In addition, surface waters (i.e. streams, springs, seeps) would be monitored to ensure that all state standards are met. Monitoring would continue until such time as final stabilization is deemed adequate for abandonment. |
| Water Quality | CDPHE-WQCD-23 | Comment: Appendix A should include an SPCC plan in the list of mitigations. | Response: An SPCC plan is listed in the Appendix A Subalternative Mitigations (Water Quality, Surface and Ground) |
| Water Quality | USGS-01 | Comment: The USGS has recognized the RD&D activities as an opportunity to collect a wide spectrum of environmental data that could be used to build and refine a conceptual model of the regional hydrologic system, and suggests that the data collected by the companies be consistent, and subject to a robust peer review, so as to compare the environmental impacts of the various processes. | Response: Comprehensive water monitoring plans will be developed and coordinated with the BLM, USGS, and other agencies. The details of data collection, storage, interpretation, and review will be decided at that time. Water resource monitoring data would be provided to the BLM on a quarterly basis for review and analysis as stated in the EA. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | USGS-02 | <p>Comment: The USGS asked what kinds of tracer tests would be performed, what their objectives were, and what tracers would be used.</p> | <p>Response: The purpose of the tracer tests is to determine the connectivity of the natural and induced fractures; and the direction and amount of flow of groundwater, fracturing fluid, produced hydrocarbons or other fluids. Tracers would also aid in the determination of confinement of the shale oil recovery process. Commonly used non-toxic tracers are naturally occurring ions, such as bromide. Groundwater testing will be done prior to using tracers so that background levels are known. One goal of the research to be done by Chevron is to develop specific, non-toxic tracers. If Chevron uses tracers, it will use only non-toxic substances and it will obtain the necessary permits for their use.</p> |
| Water Quality | USGS-03 CDPHE-WQCD-25 | <p>Comment: The USGS suggests that an added component of pit leakage detection include monitoring subsoil moisture and chemistry in the unsaturated zone beneath the pit.</p> <p>Please note that leakage from impoundments and evaporation ponds would be considered a potential discharge to groundwater and would need to be protective of groundwater standards.</p> | <p>Response: Chevron is planning to install lined pits for the temporary storage of drilling mud or produced liquids during the drilling, coring and testing periods. A common method for detecting leakage is the calculation of evaporation rates. Corrective actions would be to pump out the pit and/or replace the lining. The reserve pits would be constructed in compliance with all state regulations and groundwater standards would be observed. Chevron is open to discussions with the USGS regarding pit leakage detection methods, and any other monitoring, and is willing to work with the USGS regarding data collection and analysis to develop the regional hydrological and geographical knowledge base.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | USGS-04 GM-08 | <p>Comment: The commenters expressed concern that streamflow and water quality data collected on Willow Creek, Black Sulphur Creek, and at Piceance Creek below Hunter Creek were discontinued in the 1980s and should be used with caution, and suggests that consideration be given to reinitiating data collection at the discontinued sites in the vicinity of Chevron's RD&D site. Nearby water wells should be included in the site-monitoring plan.</p> | <p>Response: There is little recent water quality data available in the vicinity of Chevron's proposed lease site. An important component of phase one of the RD&D project is gathering baseline water quality data and carefully monitor for any changes to the water quality in the area. Consideration will be given to reinitiating data collection at the discontinued sites in the vicinity.</p> |
| Water Quality | WRA-02 | <p>Comment: The EA lacks a baseline hydrogeological study of water resources on the lease tract, as well as detailed information on the likely effects that unconfined circulation of hot CO₂, natural gas, or explosives could have on groundwater resources or resulting transmissivity of the region.</p> | <p>Response: The available hydrogeologic information in the area was reviewed and analyzed during the preparation of the EA. A significant component of Chevron's research entails gathering the data necessary to develop a comprehensive hydrogeological study of the water resources in the vicinity of the lease tract. The first phase of the process is designed to collect baseline data and to analyze the hydrology, geology, mineralogy, and the geophysical properties of the formation. The subsurface processes would be confined to a very small area (approximately one acre), and because each phase of the project is dependent on the success of each previous phase, the process cannot proceed if containment is lost at any point in the operation. This phased design maximizes the opportunity to halt the process, re-evaluate, and remediate or redesign, if necessary, at each step prior to initiating further testing.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | RBC-16 | <p>Comment: Asked what the criteria is to restore ground water (if restoration is needed)</p> | <p>Response: Groundwater restoration criteria would be established using the baseline groundwater quality information collected during the site characterization assessment activities that would be completed during the first phase of the process. Since the aquitard layer between the upper and lower Uinta-Animas aquifer systems are basically devoid of water, it is expected that if any groundwater restoration is required, the criteria will be based on the baseline groundwater quality of either the upper or lower aquifer.</p> |
| Water Quality | CDOW-07 RBC-17 | <p>Comment: The water sample analytes proposed in the EA were an abbreviated list. The CDOW recommends monitoring for changes in all major chemical, and physical properties of groundwater, springs, seeps, and surface water within a larger geographic area. CDOW also recommends that a minimum of 5 quarters of baseline samples be collected prior to development, and prior to fracturing and commencement of in-situ retorting. CDOW also stresses the importance of developing an integrated groundwater and surface water monitoring and abatement plan with consultation from the BLM and applicable State of Colorado divisions.</p> <p>A detailed groundwater monitoring program specifying the sampling frequency, intervals, methods, etc. and complete list of parameters to be analyzed should be submitted at least 60 days before any production wells are drilled.</p> | <p>Response: The details of a comprehensive hydrologic monitoring plan, including groundwater, surface water, and seeps and springs, will be developed during phase one of the RD&D project. Consideration will be given to reinitiating data collection at discontinued USGS monitoring sites in the vicinity of the lease tract, as well as upstream and downstream seeps, springs, and creeks. Chevron will gather at least 5 quarters of baseline data as required by the Division of Reclamation, Mining, and Safety permit conditions. Monitoring parameters, data collection and analysis, and reporting requirements will be coordinated with the BLM, the USGS, and other State agencies to ensure the protection of water resources.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | GM-01 | <p>Comment: Undesirable effects of this action on ground water could be both very significant and long-lived. Clean-up of water quality deterioration caused by both hydrocarbon production and thermal effects on minerals is likely to be difficult, expensive and require a long time.</p> | <p>Response: Chevron's RD&D process would be conducted on a very small scale. Subsurface activities would be contained within a 50-foot thick by a one acre or less production zone within the center of the confining interval (Mahogany Zone). Chevron is developing technologies and methods to significantly reduce the temperatures required to decompose the kerogen, therefore the processes and products may have properties that are not consistent with a traditional retort. Additionally, an extensive water monitoring plan, including close-in and perimeter monitoring wells, would provide the earliest possible detection of in the event of a gas or fluid release. This, along with the implementation of mitigation measures provided by the BLM, would significantly reduce the potential for water quality deterioration. Post- operation reclamation would ensure that water quality and flow patterns were restored as nearly as possible to pre-construction parameters.</p> |
| Water Quality | GM-02 | <p>Comment: The permanent disruption of "confining" layers between aquifers must be addressed, both by the BLM and the State of Colorado.</p> | <p>Response: Fractures and jointing patterns naturally exist within the confining layers, and mixing of aquifer systems already occurs in some areas of the regional geology. Induced fractures associated with the proposed RD&D project would be grouted, or otherwise sealed, as part of the reclamation process to restore the functionality of the confining layer.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | GM-09 | <p>Comment: The Plan of Operations refers to the lack of available water quality maps. These maps do exist for the Upper and Lower aquifers (Saulnier, 1958), and the description of the TDS content provided in the PO for the upper and lower aquifers is misleading.</p> | <p>Response: The water quality map referred to in the comment was developed many years ago, and many changes in land use have taken place over those years. Likewise, much of the information on the oil shale resource, related water resources, and technological extraction methods are also dated, and are in need of updating to provide current and accurate data. Today's technologies are better suited for this purpose than those of the past. It is generally thought that the lower aquifer system is of much poorer quality due to the nahcolite deposits and salt beds in the Basin, and Chevron would assess the ground water quality early in the RD&D process to verify this. The depth, status, and dissolved Solid concentration of water supply wells near the proposed lease tract would be documented to add to collective knowledge of the resources in the Basin.</p> |
| Water Quality | GM-10 | <p>Comment: The 12 monitoring wells noted will not provide gradient/flow path information. Additional wells are needed away from the test site to define gradient.</p> | <p>Response: The 12 monitoring wells mentioned would be located around the process facilities. Additional monitoring wells would be installed around the 160-acre tract. Up to 20 groundwater monitoring wells would be installed overall, and consideration would be given to re-initiating data collection at the discontinued USGS monitoring stations near the site.</p> |
| Water Quality | GM-12 | <p>Comment: Asks if gas injection will provide adequate dewatering, as it will promote groundwater flow away from the injection area.</p> | <p>Response: The proposed production zone would occupy a very small area within the target interval, and methods of containment would isolate the process from the aquifer systems. Dewatering is not anticipated.</p> |
| Water Quality | GM-18 | <p>Comment: All permeable zones will be affected and need to be monitored separately by wells open only to individual aquifer zones.</p> | <p>Response: The evaluation and analysis of the formation core(s) is necessary to provide the depths of the aquifer systems, after which monitoring wells would be installed to monitor each individual water bearing interval.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | GM-19 | Comment: Asks what general type of containment barriers are to be considered. | Response: Chevron believes that fractured zones would have a very high horizontal to vertical component, which would allow for the maintenance of a barrier within the target interval. This barrier between the production zone and the upper (A groove) and lower (B groove) water bearing units would be achieved by creating fractured areas, or “pockets”, approximately 1 acre wide and 50 feet high within the center of the 200-foot oil shale deposit. In this way, a large volume (about 75 feet) of the confining layer would separate the proposed process from the water bearing units above and below. Absent the intersection of natural fractures that communicate with the water bearing intervals, this method of process containment would keep the aquifers out of the production zone. |
| Water Quality | BF-01 | Comment: Fracturing/Rubblization must be contained and isolatable. No permeable, or unplugged, fractures between the ground water strata and the oil shale target strata can be allowed. | Response: A crucial component of Chevron's process is the detection of natural and induced fracture patterns so as to maintain containment of the process within the target zone. Testing cannot proceed if containment is lost at any point in the operation. This project design maximizes the opportunity to halt the process, re-evaluate, and remediate or redesign, if necessary, to ensure that the process remains workable, and that water and oil shale resources are not compromised. |
| Water Quality | CDWR-02 | Comment: If stormwater is intercepted by this operation and is not diverted or captured in priority, it must be released to the stream system within 72 hours. This may require a discharge permit from the CDPHE-WQCD. | Response: Chevron will submit General Permit Applications for discharge on all construction and operation activities to the CDPHE-WQCD for approval, and will comply with all stipulations attached to those permits. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | CDOW-09 | Comment: All waters of the US, including those with no water but with ordinary high water mark are required to be permitted through the US Army Corps of Engineers (COE). | Response: The Hunter Creek stream crossing proposed for the installation of a natural gas pipeline, utilities, and communications ROW "would be constructed in compliance with all Right-of-way permit requirements, BLM Gold Book standards for pipelines and flowlines, state and local stormwater management regulations, and all U.S. Army Corps of Engineers Nationwide Permit 12 regulations. Additional BMPs, as outlined in Chevron's SWMP, would be implemented to ensure that the potential for erosion and sediment transport resulting from construction at the banks of the steam channel are minimized" (EA, p. 13). |
| Water Quality | CDWR-03 | Comment: Jurisdictional size dams must be approved by the State Engineer prior to construction. | Response: Chevron would submit all necessary permit applications should a jurisdictional size dam be deemed necessary for stormwater management. |
| Water Quality | WRA-40 | Comment: The statements that the "natural vertical and jointing patterns in some areas within the formation allow communication between the upper and lower aquifer systems", and "the Mahogany zone is generally characterized as having low permeability" are directly at odds. | Response: A crucial component of Chevron's process is the detection and avoidance of natural fracture patterns so as to maintain containment of the process within the target zone. Fractures and permeability are separate and distinct characteristics of the rock mechanics, and thus are not contradictory but are geologic characteristics that need to be taken into consideration together. Absent the presence of natural fractures, the Mahogany zone is considered a confining layer with low permeability |
| Water Quality | RBC-14 | Comment: The BLM should monitor Chevron's compliance with the proposed mitigation measures to ensure that no degradation of the Creeks in the vicinity of the proposed lease tract occurs as a result of operations. | Response: The BLM, along with the State permitting agencies, will monitor the RD&D operations for compliance with mitigations, regulations, and stipulations. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Water Quality | RBC-15 | <p>Comment: Water-yielding sections of the Quaternary alluvium, the most likely supply for potential future water wells for livestock and domestic use, should be protected during drilling and well completion.</p> | <p>Response: Chevron has developed a comprehensive water-monitoring plan to encompass the entire operation. Wells would be installed at varying depths to monitor all water bearing intervals to provide the earliest possible detection in the event of a release. This monitoring system would ensure that remediation could be facilitated prior to contaminants migration offsite.</p> |
| Water Rights | | | |
| Water Rights | WRA-08 CDOW-10 | <p>Comment: The EA does not provide a breakdown of how water will be used and how much will be consumed. The Chevron EA also fails to provide any information on the water rights that will be used to meet their water requirements or the potential impacts on downstream water rights. The coalition also stresses that the BLM must consult with the U.S. Fish and Wildlife Service for the purposes of Section 7 of the Endangered Species Act.</p> <p>The oil shale development operations could be water intensive, and may lead to depletion of groundwater and surface water. Water rights could be adversely impacted from oil shale development. Water management maybe an issue for operations, which require disposal and treatment of water. Water from fracturing and other processes should be taken from locations where populations of fish and other aquatic life forms will not be impacted by reduced flows, and drilling, process, and other fluids should be disposed of in a manner that will not cause contamination to streams, springs, or ponds.</p> | <p>Response: The EA clearly states on page 13 that water consumption would be limited to mixing additives and drilling mud, dust suppression, and personnel uses, and Table 10 on page 61 lists the estimated water needs per year. The EA also states "There are no recorded water rights within the proposed 160-acre lease tract". Chevron will purchase the water needed for the proposed project from a licensed water contractor and would not therefore impact downstream water rights. ESA section 7 consultation with the USFWS was concluded in a formal letter of concurrence with the findings of the biological assessments for all 5 of the proposed RD&D projects sent to the BLM on September 12, 2006. The USFWS found that the estimated water requirements listed fall under the umbrella of the USFWS Biological Opinion (ES/GJ-6-CO-94-F0170 for small water depletions.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Social and Economic | | | |
| Socioec | RBC-22 | <p>Comment: The report used for available socioeconomic data is nearly a year old, and due to the increased activity in oil and gas production, the data is underestimated.</p> | <p>Response: Socioeconomic statistics are often subject to reporting delays of a year or two after the fact. Consequently, socioeconomic effects of the recent increase in energy development that has occurred in northwest Colorado are not fully reflected in most published statistics. The most recent statistical data was used in the analysis and this information was augmented with interviews with local officials and service administrators in an attempt to illustrate the cumulative impacts of the increase in mineral development on the socioeconomics of the region.</p> |
| Socioec | KLU-14 | <p>Comment: The postponement of royalty distribution to local governments is a problem that needs to be solved by the State Legislature.</p> | <p>Response: The RD&D project is not expected to produce substantial quantities of shale oil at the small scale proposed and would not likely have a significant effect on royalty distributions even if the distributions were not postponed.</p> |
| Socioec | RBC-02 | <p>Comment: The Rio Blanco County Board of Commissioners expressed their desire for voluntary cooperation from the companies in developing the appropriate mitigation measures with regard to transportation and socioeconomic impacts.</p> | <p>Response: The BLM has every intention to continue its close coordination with Rio Blanco County and to facilitate communication to the maximum extent possible between companies and the County. Further, Chevron has a long-standing relationship with Rio Blanco County, and will continue to work closely with the County and the local communities to address and mitigate the impacts of their operations.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Socioec | RBC-01 | Comment: The BLM should require mandatory car pooling and busing of employees, and should require companies to contribute to the cost of maintaining roads. | Response: Requiring mandatory car pooling or busing is beyond the purview of the BLM's authority. However, the BLM has every intention to continue its close coordination with Rio Blanco County and to facilitate communication to the maximum extent possible between Chevron and the County regarding road maintenance. The EA does recognize that roads will require ongoing maintenance. The BLM intended to convey that no new road construction or major upgrades were anticipated to facilitate access to the Chevron RD&D site. The EA has been revised to clarify this intent. |
| Socioec | RBC-40 | Comment: Federal government should compensate the county for lost revenue because emergency impact fees for RD&D do not apply. | Response: The request is beyond the purview of the BLM's authority. However, the BLM has every intention to continue its close coordination with Rio Blanco County and to facilitate communication to the maximum extent possible between the companies and the County. |
| Socioec | RBC-04 | Comment: The BLM should locate temporary housing on federal land. | Response: The BLM has the authority to consider a temporary use authorization for such an action, but the agency has determined it is unwarranted in this case. |
| Socioec | RBC-24 | Comment: DOLA grants generally require a match, and the ability for Rio Blanco to provide the matching funding is constrained by the fact that some energy companies refuse to pay County use tax. | Response: This is beyond the purview of the BLM's authority. However, the BLM has every intention to continue its close coordination with Rio Blanco County and to facilitate communication to the maximum extent possible between the companies and the County. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Socioec | RBC-25 | Comment: The County disputes the statement that the proposed RD&D projects "as well as cumulative impacts to the Resource Area... are within the scope and analysis of the existing RMP/EIS". Although it is within the acreage totals, the EIS did not appropriately address the socio-economic impacts. | Response: The action is within the scope of the current RMP; it is true that the socio-economic data for the RMP is dated due to recent energy development. Accordingly, an Environmental Impact Statement for the White River Resource Area is being prepared that will address the socio-economic impacts from the recent surge in energy development with an expected completion date of early 2008. |
| Socioec | RBC-29 | Comment: The County contends the rural/agricultural character of the landscape is already changing due to energy development. The wording in the document says that oil shale and oil and gas development could change that landscape. | Response: The BLM has reviewed and considered the comment. In BLM's view, the EA accurately portrays the rural/agricultural characteristics of the county. |
| Socioec | CL20-04 | Comment: At the pace and scope of research and development activities proposed, Club 20 believes that the jobs and employment the RD&D projects will generate have a potential beneficial socioeconomic impact, and that the potential environmental impacts or disturbances will be minimal. | Response: Comment noted. |
| Access and Transportation | | | |
| Access | RBC-20 | Comment: Clarify when the CDOT statistics were gathered. | Response: The CDOT statistics were accessed via website in 2006, and used the most recent data which was 2005. The Table footnote will include this information. The BLM also notes that the traffic along Piceance Creek Road was provided as a range, with the high number coinciding not only with hunting season, but also with construction of two major pipelines (Entrega and WIC) underway in that time period. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Access | RBC-06 | Comment: Spill Prevention, Control and Countermeasures (SPCC) stipulations need to apply to oil transports in addition to wastes and hazardous materials. | Response: SPCC stipulations will be applied to all wastes and hazardous materials transported to and from the site, including the oil and gas liquid streams that are produced. |
| Access | RBC-28 | Comment: Increased traffic results in more accidents requiring emergency response. This needs to be included in the Access Section. | Response: The socioeconomics section recognized that social infrastructure has not been able to keep up with the rapid growth in the oil and gas industry and demands upon emergency response services. The EA states that the proposed oil shale RD&D projects would contribute to these demands on local resources. The concept will be duplicated in the Access section as requested. |
| Access | KLU-15 | Comment: The estimated number of additional vehicle trips on the Piceance Creek and Sulphur Creek road seems very low. | Response: Chevron's RD&D process would utilize traditional drilling technologies and would be conducted on a very small scale. Therefore, the personnel requirements and consequent traffic volumes would be comparable to that of an oil and gas drilling operation and would average an estimated 5 to 10 vehicles per day as estimated in the EA. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Wildlife | | | |
| Wildlife | CDOW-01 | <p>Comment: The Chevron RD&D site is located adjacent to greater sage grouse historical leks. Sagebrush provides an important forage source for wildlife and these communities should be preserved to the extent practicable.</p> | <p>Response: Chevron's proposed action is outside the designated overall range for sage grouse. Site surveys have indicated that the potential habitat associated with the RD&D project is approximately four miles north of the current designated overall range for greater sage grouse, and five miles north of the closest recently documented use. Surveys have also indicated that there are no known leks on Hunter Ridge or within two miles of the ridge. The lease tract is separated from currently occupied habitats to the south by considerable unsuitable habitats including pinyon-juniper woodlands, canyons, and smaller draws. Surface disturbance would be limited to that required for safe and efficient construction and operation. Chevron would make every attempt to salvage root systems where possible, and would promptly seed disturbed areas not necessary for production and/or operation with the goal of maintaining or replacing suitable habitat and browse. Additional mitigation measures are provided in Appendix A and throughout the EA.</p> |
| Wildlife | CDOW-02 | <p>Comment: Development can move animals into lands already supporting population of animals. These effects are additive and further reduce the quality of the habitat and available forage.</p> | <p>Response: The BLM can not assume effects will be additive without reliable information regarding current habitat condition, dispersal mechanisms and dispersal rates, population dynamics including variation in population size, sex-age composition, reproduction and mortality rates. Because of the anticipated duration of the project and the proposed amount of acres disturbed, affects to big game seasonal movement patterns will likely be minimal. In addition, reclamation efforts will emphasize native species and restoring forage value.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Wildlife | CDOW-03 | <p>Comment: The RD&D sites could be an attractive nuisance, provide warmth, and may cause 'snuggle up' effect. The facility perimeter should be fenced with "wildlife-friendly" materials.</p> | <p>Response: Project facilities would be fenced to provide a safe work environment, site security, and to exclude wildlife and cattle from the test area so as to prevent injury from operating equipment. Fencing would also provide distance between the warm operations and the animals that might be attracted to the source, and would thereby discourage wildlife and cattle from concentrating at the site. Fencing would be constructed only around the small portion of the tract necessary for drilling and operating facilities and not the entire 160-acre tract so as to retain a substantial portion of available wildlife habitat and grazing rights. If the RD&D facilities were to expand, or relocate to another area within the tract, Chevron would enclose those facilities so as to exclude wildlife and would promptly reclaim those areas no longer required for testing.</p> |
| Wildlife | CDOW-04 | <p>Comment: Conservation methods could be developed for species of high importance in proximity to the RD&D site including avoidance, onsite and offsite mitigation, or compensatory funding. Recommendations for achieving the desired wildlife mitigations were provided.</p> | <p>Response: The EA is consistent with the recommended procedures provided by CDOW. Because the project is currently in the research and development stage, it has been agreed upon by both CDOW and BLM to defer off-site mitigation for big game until the proposed process is deemed economically and environmentally feasible. At that time, a compensatory mitigation strategy would be developed by BLM and CDOW for commercial development of oil shale resources.</p> |
| Wildlife | CDOW-05 | <p>Comment: Reclamation should focus on returning disturbed areas to productive winter range as quickly as possible after disturbance, with emphasis on establishing an herbaceous mix high in forbs and utilizing native grasses, including bunch grasses such as bluebunch wheatgrass and Great Basin wildrye.</p> | <p>Response: Limiting vegetation removal, salvaging root systems where possible, and other reclamation mitigations as described in the Vegetation and Wildlife sections of the EA would ensure that disturbed areas were reclaimed as soon as practicable. Page 79 of the August 15, 2006 EA includes the recommended White River Field Office standard seed mixes to be used for rolling loam and pinyon-juniper ecological site restoration.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Wildlife | CDOW-06 | <p>Comment: Protection of groundwater sources and surface waters is critical to maintaining quality fisheries and to support a diverse aquatic life, as well as to sustain wildlife resources and local ranching. The maintenance of both the quality and quantity of surface water flow is not ensured by a monitoring program only. The operator should take provisions to ensure these resources will be protected.</p> | <p>Response: A significant component of Chevron's research entails gathering the data necessary to develop a comprehensive hydrogeological study of the water resources in the vicinity of the lease tract. The first phase of the process is designed to collect baseline data and to analyze the hydrology, geology, mineralogy, and the geophysical properties of the formation so as to develop a comprehensive plan to monitor and protect water resources. This plan would be developed in coordination with the BLM and will be designed to maintain the integrity and function of the hydrologic systems in the region.</p> |
| Wildlife | CDOW-13 | <p>Comment: A sudden influx of humans to support the labor needs of the project can mean an increase in wildlife poaching incidents (both aquatic and terrestrial species). CDOW recommends project proponent participation in CDOW's Operation Game Thief program.</p> | <p>Response: Chevron would consider voluntary participation in CDOW's Operation Game Thief Program, and is open to discussions with CDOW with regard to the protection of wildlife and habitat preservation.</p> |
| Wildlife | CDOW-14 | <p>Comment: The withdrawals of energy from the landscape both directly and indirectly will likely impact wildlife. Therefore, continual assessment, evaluation, and mitigation of cumulative impacts are critical in sustaining wildlife populations for future generations.</p> | <p>Response: Not only do the proposed RD&D projects have potential to develop technologies and methods for viable shale oil extraction, they would also provide the BLM and other federal, state, and local agencies an excellent opportunity to gather information and baseline data on oil shale development at a scale that would contribute to the collective knowledge base regarding impact assessment, effective mitigation measures, and resource management objectives, yet would have minimal and manageable impacts to natural resources.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Wildlife | RBC-19 | <p>Comment: The subsurface release of gases and drilling fluids in close proximity to fault lines may result in the escapement of noxious materials to ground and surface waters, ultimately entering into flowing waters throughout the Piceance Basin. These releases could cause the immediate degradation of water quality sufficient to cause acute or chronic mortality in fish and other aquatic organisms. Any mortality of aquatic organisms is grounds for immediate concern and should be reported to the CDOW.</p> | <p>Response: A crucial component of Chevron's process is the detection and avoidance of natural fracture patterns (including any fault pathways that might be present) so as to maintain containment of the process within the target zone. The subsurface processes would be confined to a very small area (approximately one acre), and because each phase of the project is dependent on the success of each previous phase, the process cannot proceed if containment is lost at any point in the operation. This phased design maximizes the opportunity to halt the process, re-evaluate, and remediate or redesign, if necessary, at each step prior to initiating further testing. In addition, close-in, and perimeter monitoring wells would be in place for the earliest possible detection in the event of a release. Should a release be detected, the breach would be plugged immediately. Chevron would report any injury and/or mortality of aquatic organisms to the DOW immediately.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Wildlife | RBC-13 | Comment: Regarding Section 7 consultation, asked what a "streamlined Biological Opinion" is. | Response: The BLM and the USFWS have an existing agreement addressing consultation for the endangered Colorado River Fish. The USFWS issued a programmatic biological opinion to BLM in June 1994 for all small water depletions caused by BLM authorized activities in the Colorado River Basin. The USFWS has tiered the biological opinion issued for the RD&D projects to that programmatic biological opinion, thereby streamlining the work necessary to complete the consultation process. Endangered Species Act (ESA) section 7 consultation with the USFWS was concluded in a formal letter of concurrence with the findings of the biological assessments for all 5 of the proposed RD&D projects sent to the BLM on September 12, 2006. The USFWS found that the estimated water requirements listed fall under the umbrella of the USFWS Biological Opinion (ES/GJ-6-CO-94-F0170) for small water depletions |
| Mineral / Operational | | | |
| Mineral | KLU-03 | Comment: "Phase 6 Decompose the Kerogen and Produce Shale Oil" does not provide any information on the proportion of gas and oil produced. | Response: The gas/oil ratio would only be a "best guess" without a site-specific analysis. Completion and evaluation of the formation core would provide a better assessment of the oil and gas resources available at that location. |
| Mineral | KLU-06 | Comment: The possibility for decarbonation of carbonate materials is not discussed. | Response: The temperatures at which Chevron expects to decompose the kerogen would be much less than that normally required to decompose the carbonates. Additional information gathered from Laboratory research will more accurately predict what might occur in a supercritical system. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | KLU-07 | Comment: The amount and composition of the produced gas should be quantified during the RD&D phase, and may change dramatically during the heating, production, and cooling phases in the operation of a retort. | Response: The amount and composition of all products will be quantified and analyzed at each phase of the RD&D project. Chevron is developing technologies and methods to significantly reduce the temperatures required to decompose the kerogen, therefore the processes and products may have properties that are not consistent with a traditional retort. |
| Mineral | KLU-11 GM-20 | Comment: The estimated resource recovery of "five or more barrels per day" seems so low that this approach is not worth considered as being potentially commercially viable. Asks if economic leasing criteria be met at 5+ barrels per day. | Response: The rubblized zone will only underlie approximately 1 acre, and will be about 50 feet thick. Five or more barrels per day is an estimate of the production rates expected from this very small area of the shale oil producing interval. Chevron does not anticipate commercial quantities of shale oil at this scale, but rather expects to develop and refine the technology and processes to assess the future commercial potential. |
| Mineral | KLU-12 | Comment: There seems to be no discussion of the quality of the "crude" that will be produced. | Response: There is no solid data to predict what the products will look like using a process which is different than those used previously. It is reasonable to expect different fluid properties, but conversely, the resource is the same, so fluid properties could be similar to those seen in the past. |
| Mineral | WRA-03 | Comment: The EA fails to provided sufficient information about the proposed process to judge the effectiveness or potential impacts of fracturing, but instead devotes a paragraph to a superficial history of fracturing and fails to put these processes into context, explain their benefits or impacts, or to otherwise lead to a conclusion that one method is better than another. | Response: The EA describes at length the fracturing process and its potential impacts. The earlier in-situ oil shale efforts listed on page 6 of the EA provide historical evidence that relative uniformity in the fractured material can be expected to yield economic quantities of shale oil. Chevron has designed its technology to benefit from, and expand on, the insights and experience gained from earlier oil shale research and development and to avoid repeating past mistakes. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | WRA-04 | Comment: The EA fails entirely to conduct an analysis of the impacts that explosives or propellants could have on the environment. | Response: Explosives could be used to accurately create a well-defined fractured and rubblized zone. Explosive agents are proprietary in composition but could be tailored to be either consumed in the process and/or rendered harmless to the environment. The use of explosives and propellants as employed in fracturing technology has been widely used in the petroleum and mining industries for more than 50 years. It has been thoroughly studied by the EPA, and has proven successful at providing the desired fracture network. |
| Mineral | WRA-04a | Comment: Given the large scale of fracturing being proposed by Chevron, it is imperative that the EA discuss the potential direct, indirect, and cumulative impacts of all potential fracturing agents. | Response: The fracturing proposed by Chevron will actually be conducted on a very small scale. The entire process will be confined to a 50-foot thick and approximately one-acre wide area within the target zone. Many of the processes and materials (agents) used in the fracturing process are proprietary to the fracturing contractor performing the operation (i.e. Halliburton). However, the EA thoroughly identifies the potential direct, indirect, and cumulative impacts of the proposed RD&D project. |
| Mineral | WRA-05 | Comment: The EA states that CO ₂ gas would be "circulated through the fractured formation from well to well and then routed back to a gas generator to be reheated", but it does not adequately explain how the gas is "routed" while underground, through uncontained fractures, nor does it explain how the communication with natural fractures will be detected. | Response: The EA and Plan of Operations describe common and widespread industry practices of fracturing, injection, and recovery methods in a controlled fracture environment. These are methodologies that are well documented and have been approved for use by numerous federal, state, and local agencies. As stated in the EA, comprehensive groundwater and seismic monitoring systems would be in place to detect the natural fracture network. Non-reactive tracers tests may be employed to provide further information on existing natural fractures, as well as induced fractures. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | WRA-42 | Comment: Chevron asserts that natural fractures would likely be grouted, or the process would be relocated. The coalition asks if grouting would be effective, and where Chevron would relocate its facilities. | Response: Grouting is a proven method for plugging natural fractures and has been used in the oil and gas industry for many years to contain and control subsurface process and to prevent drilling fluids from coming in contact with water resources. Any relocation of facilities to avoid contact with natural fractures would be within the 160-acre lease tract. |
| Mineral | WRA-43 | Comment: The type of combustion of refractory organics proposed by Chevron is the same heat source used in the in-situ processing proposed in the 1970's and 1980's, and the same sort of soluble residuals can be expected. | Response: Chevron is developing technologies and methods to significantly reduce the temperatures required to decompose the kerogen, therefore the processes and products may have properties that are not consistent with a traditional retort. Chevron's methodology is unique and is unlike the in-situ processes of the past and those proposed at present. |
| Mineral | WRA-44 | Comment: The EA does not address the possibility of changes in the structure of the rock that could have long-term effects on the remainder of the Mahogany zone and the general groundwater flows. | Response: A significant component of Chevron's research is the evaluation of the structure of the rock and to develop strategies for managing the shale and water resources so as to maximize utilization while minimizing impacts. Research and development projects are being conducted to address this and other concerns. |
| Mineral | WRA-45 | Comment: Chevron acknowledges that it does not yet know if "satisfactory means of preventing contamination of groundwater from the proposed energy recovery (combustion of produced zone) phase of the operation can be accomplished. | Response: The EA clearly states that the energy recovery, or in-situ combustion phase would be implemented for its potential to increase the overall efficiency of the process, and would not be an integral part of the conversion process. If a satisfactory means for preventing contamination of the groundwater at this phase cannot be accomplished, the BLM will not permit Chevron to proceed with in-situ combustion. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | WRA-06 | <p>Comment: The EA identifies knowledge gaps regarding long-term effects of pyrolysis.</p> | <p>Response: The goal of the RD&D program is to answer those questions, and the RD&D projects will provide the data needed to evaluate the impacts, and to develop the appropriate mitigation for the protection of our natural resources prior to any commercial leasing analysis.</p> |
| Mineral | CDOW-08 | <p>Comment: An emergency response plan, including emergency procedures and protocols, should be written prior to development to provide accident mitigation in the event of a release of CO₂.</p> | <p>Response: Chevron would develop, and submit to the BLM for approval, a Response Plan to address remediation response procedures. Other plans will be developed prior to initiating the RD&D operations and will encompass the entire RD&D proposal. These plans will be designed to protect workers and the environment, and to provide training and emergency preparedness to workers on the site. These plans are listed on page 17 of the EA, and will be submitted with the permit application for approval.</p> |
| Mineral | GM-03 WRA-07 | <p>Comment: Subsidence is apt to be more than anticipated, especially in the long-term, and possibly during operation. This will probably cause further adverse effects on ground water.</p> <p>The EA acknowledges the effects of in-situ heat integration and the possibility of ground heave and/or subsidence are not fully understood...but it does not include an analysis of the of the adequacy or likelihood of accuracy regarding predictive methods, underlying assumptions, and uncertainties encountered in compiling the information required to justify a FONSI.</p> | <p>Response: Chevron's RD&D project would be conducted on a very small scale, and no material would be removed from the substrate. Therefore, subsurface activities within this small area are not likely to cause any measurable subsidence.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | GM-04 | <p>Comment: Maximizing resource recovery is critical. "Secondary" recovery of non-recovered kerogen will probably be extremely difficult for future generations, who will be in a truly oil-short era.</p> | <p>Response: Chevron will certainly attempt to maximize resource recovery, and its proposed process, as currently planned, is anticipated to recover an estimated 80% of the available resource. Ongoing research may develop methods for increasing that percentage, as the process is refined. The RD&D project is not likely to affect future recovery efforts because the project would be conducted at a very small scale from a relatively miniscule portion of the available oil shale resources within the Piceance Basin.</p> |
| Mineral | GM-05 | <p>Comment: All identifiable effects of the proposed action must be monitored, including a valid pre-operation baseline.</p> | <p>Response: The potential impacts that may result from the RD&D proposal were analyzed in the EA. In addition, a significant component of Chevron's research entails gathering the data necessary to develop a comprehensive hydrogeological study of the water resources in the vicinity of the lease tract. The first phase of the process is designed to collect baseline data and to analyze the hydrology, geology, mineralogy, and the geophysical properties of the formation prior to initiating further testing.</p> |
| Mineral | GM-07 | <p>Comment: The BLM must encourage research on Aluminum recovery (Dawsonite). Aluminum resources in this basin are about 20 times our Nation's bauxite resource.</p> | <p>Response: Although the proposed lease tract is not located within the designated multi-mineral zone, Chevron plans to analyze all of the mineral resources underlying the tract in phase one of its operation. Dawsonite can be leached from the shale once the kerogen has been decomposed and the shale oil is extracted using simple hot-water leaching techniques. This process has not been evaluated using in-situ retorting, and it is unknown whether this resource could be economically recoverable. Chevron's proposed initial coring and research phase would help to determine the presence, concentration and recoverability of this resource.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | GM-11 | Comment: The Plan of Operations is not clear on how to identify pre-existing fractures vs. man-made fractures. Control/identification can be uncertain. | Response: A thorough investigation of the formation core(s) would provide more information on the natural fracture patterns. Geophones, and a series of 20-25 tiltmeters capable of measuring up 1/1000th of an inch of movement would be installed around the test site to identify the induced fracture propagation. Regardless of whether the fractures are natural or induced, testing cannot proceed unless the process is contained within the production zone. |
| Mineral | GM-14 | Comment: Asks the BLM to describe the type, source and use of caustic. | Response: Caustic is used throughout the oil and gas industry to scrub gases of objectionable acidic materials from hydrocarbons and off-gasses generated in processing. The source and type have yet to be determined. |
| Mineral | GM-16 | Comment: Asks if "Full use...of all potential resources includes Nahcolite and Dawsonite. | Response: Chevron plans to analyze all of the mineral resources underlying the tract in phase one of its operation. The process for extracting these minerals has not been evaluated using in-situ retorting, and it is unknown whether this resource could be economically recoverable. Chevron's proposed initial coring and research phase would help to determine the presence, concentration and recoverability of these resources. |
| Mineral | GM-17 | Comment: Asks what percent of the total resource is in the "target zone". | Response: The evaluation and analysis of the formation core(s) is necessary to provide an estimate of the oil shale resource within the target interval. |
| Mineral | GM-21 WRA-47 | Comment: The BLM, as well as the State of Colorado, must be involved in well abandonment. The EA does not provide information regarding treatment of wells following closure. | Response: All wells would be abandoned in compliance with permit requirements, and would comply with all laws and regulations. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | BF-02 | Comment: There is a lack of evidence that Chevron has mathematically modeled this process at any scale, including the field test scale, or the commercial scale. | Response: Chevron has entered into a joint research and development agreement with Las Alamos National Laboratory and is currently working on models to evaluate and refine the proposed process. The analysis of the formation core(s) would provide the necessary site-specific information to complete modeling in the laboratory. The purpose of the RD&D program is to field test processes and technologies on a small scale so as to determine the commercial potential of shale oil extraction. |
| Mineral | BF-03 | Comment: Some major environmental issues were not addressed in the EA including: 1) raw oil shale hydrotreating and heavy metal removal; 2) Fracturing must be high and uniform or pyrolysis will be non-uniform and too slow which could affect groundwater; and 3) Fracturing must be high and uniform or oxygen diffusion, combustion of spent shale char, and spent shale recovery will be non-uniform, ineffective, and leave char for future groundwater contamination. | Response: 1) The raw shale oil will be trucked off-site to an appropriate facility for treating. If a facility were not available to properly prepare the raw shale oil for use as fuel, Chevron would likely modify an existing facility, or construct a new one that has that capability. 2&3) As discussed in the EA, Chevron would rubbleize the production zone to achieve uniformity so as to facilitate more efficient shale oil extraction. |
| Mineral | BF-04 | Comment: There are currently no known markets for raw shale oil, and concerns about the environmental consequences of long-term storage of large quantities of raw shale oil. | Response: If the RD&D program proves the economic viability of shale oil as an alternative fuel source, facilities will likely be developed to produce, process, and sell the product. Raw shale oil can be treated for use as refinery feedstock, light fuels among other uses. |
| Mineral | BF-05 | Comment: Chevron needs to reduce the time at temperature to insure maximum Fischer Assay yield of oil, thereby minimizing char production. | Response: Chevron is developing technologies and methods as part of a joint research and development agreement with Los Alamos National Laboratory to significantly reduce the temperatures required to decompose the kerogen, therefore the processes and products may have properties that are not consistent with a traditional retort. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Mineral | BF-06 | Comment: Chevron has the opportunity to reduce the surface impact since the space between wells is significantly larger than the other applicants; however there are things that can be done to improve on this. | Response: Chevron intends to disturb only the area necessary for safe and efficient operation. There would be only minimal aboveground facilities, roads, and piping. Room for improvement is duly noted and would be given careful consideration during construction. |
| Waste Management | | | |
| Waste | WRA-37 | Comment: The EA's treatment of cumulative impacts from accidental spills or leaks associated with refueling and maintenance of equipment, storage of fuel, oil or other fluids fails to estimate the amount of contamination or provide for mitigation. | Response: Estimating the potential for accidental spills or leaks is nearly impossible since these events are never planned. The construction and drilling phases where most of the potential for spills or leaks would occur are brief and, with proper maintenance of equipment and secondary containment for fuel storage, the possibility of a spill or leak would be minimized. Mitigation for accidental spills and leaks is provided in Appendix A, and is implied by industry standards. All projects in the area are subject to applicable federal, state, and local laws and regulations, and industry standards require good housekeeping practices for the maintenance of the project area in a sanitary condition at all times to protect workers and the environment. |
| Waste | RBC-30 | Comment: Consider on-site disposal of produced water rather than trucking to a licensed facility. | Response: Onsite disposal would be considered if the amounts produced made this economically feasible. Chevron does not anticipate large volumes of produced water and it would be more cost effective to truck the water to a licensed facility. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Visual Resources | | | |
| Visual | McC-01 | Comment: The lighting in the Piceance area should be directed lighting to minimize visual impact. | Response: Chevron's RD&D process would require only minimal facilities, the tallest of which would be a temporary drilling rig. The lighting for the project would illuminate the immediate work area, but would not be evident to a casual viewer in other parts of the Piceance Basin. |
| Noise | | | |
| Noise | RBC-21 | Comment: The EA should include the fact that the Rio Blanco County ambient noise standard is 65 dba; the activity will be consistent with county standards. | Response: The text has been revised to include this standard. |
| Reclamation / Restoration | | | |
| Rec/Rest | RBC-18 | Comment: Recommended that the final site reclamation plan be amended to include water features for wildlife and/or livestock through grading and drainage catchments. | Response: Final reclamation will include the restoration or replacement (if necessary) of the existing livestock watering pond at the north boundary of Chevron's proposed lease tract. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Planning / NEPA | | | |
| NEPA | RBC-07 | Comment: Asked about the origin of the Standards for Public Land Health and the implication of critical vs. not-critical elements. | Response: The Standards for Public Land Health amended Colorado BLMS land use plan to provide standards for achieving land health. Critical elements, identified in Appendix 5 of BLM's NEPA Handbook (H-1790-1) are those elements of the human environment that are subject to requirements specified in statute, regulation, or executive order and must be considered in all EA and EIS analyses. |
| NEPA | RBC-23 | Comment: The premise of using acreage disturbed in relation to the total acreage in the WRRRA is misleading; the county would like to see Table 22 expanded to identify the known or projected workforce associated with the various activities/developments. | Response: The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document. |
| NEPA | BF-07 | Comment: There are technology, economic, and environmental issues regarding the above ground oil/gas/water separation and heat transfer equipment/processes both at the RD&D level and at the commercial level. | Response: The Chevron, EGL, and Shell RD&D proposals would provide valuable information for addressing these issues prior to commercial leasing. |
| NEPA | WRA-01 | Comment: The BLM should demand more specifics from Chevron before it authorizes a 10-year experiment using valuable federal resources. | Response: The BLM is aware of certain proprietary information regarding Chevron's technology and methods that are necessarily confidential to protect intellectual property. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-12 | <p>Comment: The EA provides insufficient detail and analysis on lease terms and stipulations that will be attached to the oil shale RD&D leases.</p> <p>The EA also fails to provide sufficient discussion of lease terms that will address the conversion of an RD&D lease into a commercial lease or how the agency will prevent undue or unnecessary degradation of resources.</p> | <p>Response: The NEPA analysis has identified mitigation measures that will be approved in the Decision Record. Approved mitigation terms will be included in lease terms. Standard lease terms also require compliance with state and local permits and approval processes. A draft final lease form was provided in the June 9, 2005 Federal Register Notice.</p> |
| NEPA | WRA-13 | <p>Comment: The EA fails to comply with White River Resource Area RMP by failing to analyze merits of technology and availability of alternate private lands for process testing.</p> | <p>Response: The merits of technology were analyzed in the application process. The Energy Act of 2005 specifically directed BLM to pursue oil shale research and development on federal lands.</p> |
| NEPA | WRA-14 | <p>Comment: The EA fails to establish the required environmental baseline describing carrying capacities for several resources in Piceance Basin RMP.</p> | <p>Response: The Piceance Basin RMP established carrying capacities that were carried forward into the White River RMP. The RMP's mention that only unmitigated impacts count against the carrying capacities; NOT mitigated impacts. The EA analyzes the affected environment and identifies appropriate mitigation measures to minimize impacts. The BLM has no reason to believe that unmitigated impacts exist or that this action will exceed identified carrying capacities.</p> |
| NEPA | WRA-15 | <p>Comment: The BLM did not respond to comments submitted in January 2005 in response to Federal Register Notice 67935 (Nov. 22, 2004).</p> | <p>Response: The BLM reviewed, considered and responded to those comments in Federal Register Notice of June 9, 2005.</p> |
| NEPA | WRA-16 | <p>Comment: BLM did not respond to or address comments submitted in April 2006 in response to EA scoping meetings.</p> | <p>Response: Comments received in April 2006 were in reference to the Programmatic Oil Shale and Tar Sands EIS and are outside the scope of this NEPA analysis. Concerns raised about groundwater, air quality, wastewater and special status species were considered as part of the analysis of the RD&D projects.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-17 | Comment: EA does not contain a "response to comments" section. | Response: The BLM is not required by NEPA to include a response to comments section in an EA. Comments received during the scoping sessions have been considered during the NEPA process, and were addressed in both the EA and the draft unsigned Finding of No Significant Impact. |
| NEPA | WRA-18 | Comment: The BLM is perpetuating the notion that the five RD&D proposals are occurring as a foregone conclusion and in isolation rather than as a coordinated RD&D leasing program. | Response: The BLM is analyzing 5 individual, independent RD&D proposals. Each project employs a different new technology, and thus the proposals are not the same project with the same impacts. Separate NEPA documents enabled the BLM to focus and include more detail on the individual proposals than would be practicable in a single, collective document. It is appropriate for BLM to analyze the impacts of approving each individual project as well as the cumulative impacts of all 5 proposals. Furthermore, the BLM determined separate documents could be prepared more efficiently utilizing third party contractors with BLM staff providing supervision and oversight. |
| NEPA | WRA-19 | Comment: The BLM's decision to define the purpose and need for the project exclusively from the project proponent's perspective is contrary to NEPA. | Response: NEPA requires the agency to define the purpose and need of the federal action as the agencies purpose and need, not the applicants purpose and need. The BLM derived the statement of purpose and need from the mandate in Section 369 of the Energy Policy Act of 2005. Distinguishing the "purpose" and the "need" as two separate aspects helps to clarify why BLM is proposing the action. The BLM clearly defined its purpose and need as more than simply "issuing a lease to Chevron" as suggested. However, the BLM considered Chevron's proposal to test technology at the scale of 160 acres and has not expressed its purpose and need exclusive of Chevron's interests. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-20 | <p>Comment: The EA contains an inappropriately narrow range of alternatives in considering only two: the proposed action and the statutorily required no action alternative. The EA contains alternatives that are simply a subset of measures and not an alternative at all. The BLM failed in its duty to conduct a comparative analysis among reasonable range of alternatives.</p> | <p>Response: Documentation prepared under NEPA need only evaluate alternatives that would satisfy the needs and purposes of the project, even if there were only one alternative that satisfies those needs and purposes. The BLM analyzed the proposal, a mitigation alternative, and a no action alternative. The BLM did not identify any additional modifications to methodology or location that would lessen potential impacts.</p> |
| NEPA | WRA-21 | <p>Comment: The no-action alternative was not examined at all. No further explanation was given except 'no impacts would occur'.</p> | <p>Response: The BLM thoroughly analyzed the No Action Alternative. However, due to the nature of the proposal, the Affected Environment is the same as the No Action Alternative. No Action would not modify or change the resource conditions detailed in the Affected Environment or environmental impacts analyzed under the White River Resource Area RMP. The BLM has modified the language in the EA to demonstrate that no additional impacts would occur as a result of the No Action Alternative other than those anticipated and analyzed under the White River Resource Area RMP.</p> |
| NEPA | WRA-22 | <p>Comment: The BLM has neglected to evaluate alternatives as required in the existing RMP including the availability of private land.</p> | <p>Response: In Section 369 of the Energy Policy Act of 2005, Congress required the BLM to lease Federal oil shale lands for the purpose of experimentation with promising new technologies. There is no superceding requirement to evaluate the availability of private lands.</p> |
| NEPA | WRA-23 | <p>Comment: The cumulative impact section is inadequate and fails to comply with NEPA. This section needs to describe the 'incremental impact of the action when added to other past, present, and reasonably foreseeable future actions'.</p> | <p>Response: The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tied to the White River RMP/EIS and are within the scope and analysis of that document.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-24 | <p>Comment: The BLM fails to provide a rational reason for its decision to use a broad area (White River Resource Area) as the geographic scope.</p> | <p>Response: The BLM provided a rational reason in the EA for designating the White River Resource Area as the unit of analysis. Because 100 percent of the 5 proposed actions occur within its borders, and the cumulative effects of nearby projects can be specifically evaluated in relation to the proposal. The use of the WRRRA helps to set the context and intensity of potential impacts. Although the WRRRA is the designated analysis area, impacts on adjacent areas have not been ignored. Many of the past present and future projects traverse boundaries and cross into adjacent areas and jurisdictions. The BLM has assessed the cumulative impacts for those projects as well.</p> |
| NEPA | WRA-25 | <p>Comment: The EA analysis only considers surface occupation, not other factors such as pollution, impacts to wildlife, and recreational users.</p> | <p>Response: The EA analyzed all of the resource values required under NEPA. The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document.</p> |
| NEPA | WRA-26 | <p>Comment: The EA includes a table that estimates the surface disturbance for past, present, and reasonably foreseeable future projects in the WRRRA, but it fails to provide any analysis of the impacts of these surface disturbances.</p> | <p>Response: The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-27 | <p>Comment: The BLM failed to consider the impact on the environment likely to result from commercial activities. The BLM identified commercial development as a 'reasonably foreseeable' future activity, and the selection process stated that these technologies had the likelihood of advancing to commercial preference right. The BLM therefore misstates the test for conducting cumulative impact analysis required under NEPA and should have analyzed the cumulative impacts of commercial oil shale activities.</p> | <p>Response: The development of preference rights acres is a mere possibility, contingent on a number of factors. However, the BLM publicly disclosed preferential right development as a foreseeable activity. The RD&D concept was designed in part to inform the analysis of any potential commercial development. An EIS will be prepared prior to issuance of the preference lease, and info gained in the RD&D will support that analysis. Lacking any reasonable information about the form of potential commercial development, BLM cannot analyze in detail such potential actions at this time. A legal description of the preference right acreage can be found in publicly available databases such as LR2000.</p> |
| NEPA | WRA-28 | <p>Comment: The EA acknowledges there are reasonably foreseeable actions in the analysis areas that will have significant cumulative impacts but fails to analyze those actions.</p> | <p>Response: The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document.</p> |
| NEPA | WRA-29 | <p>Comment: The EA attempts to improperly tier to the Programmatic EIS and the White River RMP Amendment.</p> | <p>Response: The actions proposed in the three EAs for Oil Shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of the existing RMP/EIS.</p> |
| NEPA | WRA-30 | <p>Comment: The EA fails to provide quantified and detailed information about potential cumulative impacts.</p> | <p>Response: The cumulative impacts analysis was comprehensive and appropriate given available information and reasonably foreseeable activities. The actions proposed in the three EAs for oil shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of that document.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-31 | <p>Comment: The EA fails to conduct an evaluation of the cumulative impacts of other ongoing large-scale development proposals and relies on the EIS for commercial leasing and the White River RMP amendment for oil and gas development.</p> | <p>Response: The actions proposed in the three EAs for Oil Shale RD&D, as well as cumulative impacts to the Resource Area, are tiered to the White River RMP/EIS and are within the scope and analysis of the existing RMP/EIS.</p> |
| NEPA | WRA-48 | <p>Comment: The BLM should prepare a single NEPA document for the RD&D Leasing Program. BLM cannot compare the various companies' plans for adequacy, technical value, resource conservation, or environmental analysis.</p> | <p>Response: The BLM is analyzing 5 individual, independent RD&D proposals. Each project employs a different new technology, and thus the proposals are not the same project with the same impacts. Separate NEPA documents enabled BLM to focus and include more detail on the individual proposals than would be practicable in a single, collective document. It is appropriate for BLM to analyze the impacts of approving each individual project as well as the cumulative impacts of all 5 proposals. Furthermore, BLM determined separate documents could be prepared more efficiently utilizing third party contractors with BLM staff providing supervision and oversight.</p> |
| NEPA | WRA-49 | <p>Comment: The BLM should prepare an EIS for the RD&D Leasing Program because its actions amount to the adoption of a new program.</p> <p>The BLM's adoption of a new leasing program is the type of agency activity for which an EIS is required under NEPA and its implementing regulations.</p> <p>The BLM should prepare an EIS for the RD&D Leasing Program. An EIS would facilitate sound long-term planning and resource management.</p> <p>The BLM should prepare an EIS for the RD&D Leasing Program. The public benefits significantly from preparation of an EIS.</p> | <p>Response: Section 369(c) of the Energy Policy Act of 2005 required BLM to issue leases for the purpose of research and development. BLM has determined that the small scale and limited duration of Research Development and Demonstration leasing analyzed in the EA does not constitute a new "program" nor does it meet the conditions established under NEPA for conducting an EIS. The BLM has anticipated, and minimized to the extent possible, the likely impacts of the proposed actions. The BLM has determined that if a RD&D project is proven successful, an EIS will be prepared to analyze impacts before approving an expanded commercial project. Furthermore, the Oil Shale and Tar Sands Programmatic EIS is analyzing the impacts of creating a commercial oil shale leasing program.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-51 | <p>Comment: Relying on the White River Resource Area boundary, as the limit to cumulative impact area is arbitrary in scope for water resources.</p> | <p>Response: The BLM provided a rational reason in the EA for designating the White River Resource Area as the unit of analysis. Because 100 percent of the 5 proposed actions occur within its borders, and the cumulative effects of nearby projects can be specifically evaluated in relation to the proposal, use of the WRRRA helps to set the context and intensity of potential impacts. Although the WRRRA is the designated analysis area, impacts on adjacent areas have not been ignored. Many of the past present and future projects traverse boundaries and cross into adjacent areas and jurisdictions. BLM has assessed the cumulative impacts for those projects as well.</p> |
| NEPA | WRA-53 | <p>Comment: Baseline information has not been presented or adequately summarized in the EA. The absence of quantitative data renders the EA inadequate under NEPA..</p> | <p>Response: Past hydrogeologic data from the USGS has not been displayed or analyzed in the document. The BLM used the best available data in its analysis. Chevron has developed a comprehensive water-monitoring plan to monitor hydrogeologic conditions around the proposed site to establish localized baseline conditions. There is little baseline data available in the area. Therefore the RD&D projects would provide more current data, and a better understanding of local hydrogeologic conditions.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| NEPA | WRA-52 | <p>Comment: Issuance of oil shale RD&D leases could have a significant impact on the environment. The technologies proposed for use in the BLM's RD&D leasing program have never been subject to NEPA analysis before and thus they involve unknown impacts -- an "intensity" factor to be considered when evaluating whether to prepare an EIS. Another factor counseling preparation of an EIS is that the program is controversial.</p> | <p>Response: Section 369(c) of the Energy Policy Act of 2005 required BLM to issue leases for the purpose of research and development. BLM has determined that the small scale and limited duration of Research Development and Demonstration leasing analyzed in the EA does not constitute a new "program" nor does it meet the conditions established under NEPA for conducting an EIS. BLM has anticipated and minimized to the extent possible the likely impacts of the proposed actions. BLM has determined if a RD&D project is proven successful, and EIS will be prepared to analyze impacts before approving an expanded commercial project. Furthermore, the Oil Shale and Tar Sands Programmatic EIS is analyzing the impacts of creating a commercial oil shale leasing program.</p> |
| NEPA | CL20-03 | <p>Comment: Club 20 found the EAs and public meetings to be adequately informative and in particular appreciated the socioeconomic issues addressed in addition to environmental issues. Club 20 has found the EAs and the process to be comprehensive and thorough and therefore have no specific comment on changes or improvements to the EA process.</p> | <p>Response: The BLM encourages and appreciates public involvement in the analysis process.</p> |
| NEPA | CL20-06 | <p>Comment: Club 20 believes that the BLM RD&D lease program should be kept open in Colorado, Utah, and Wyoming to fully satisfy the Energy Policy Act of 2005 to make oil shale resources available, and specifically supports consideration or reconsideration of RD&D lease applications by other companies so that alternative technologies may be tested as well.</p> | <p>Response: The comment has been reviewed and duly noted.</p> |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Miscellaneous | | | |
| Misc. | WRA-41 | Comment: The BLM must reconcile the inconsistent statements regarding the Mahogany zone's confining nature as stated by Shell and Chevron. | Response: Chevron cannot verify Shell's statement that "a significant confining layer does not exist between the two aquifers in the area", and that "the Mahogany zone does not serve as a confining unit' without further investigation of a formation core. If these statements prove to be accurate at the Chevron tract, the target zone would be reconsidered, as containment is critical to the process. |
| Misc. | WRA-11 | Comment: The Chevron EA fails to identify the precise location of the RD&D lease or the preference right areas. | Response: The legal description of the RD&D lease site is provided on page 1 of the August 15, 2006 EA, and again on page 5 under Project Location. The preference right area is outside the scope of this analysis. |
| Misc. | GM-20 | Comment: Both BLM and lessee needs to conduct separate QA/AC on approved laboratories, which can range widely in accuracy of results. | Response: Chevron has entered into a joint research and development agreement with Los Alamos National Laboratory. Los Alamos National Laboratory is one of the world's leading research institutions. |
| Misc. | CL20-01 | Comment: Club 20 believes that the issuance of the RD&D leases is an important step for BLM to satisfy the Congressional requirements of the Energy Policy Act of 2005 whereby the BLM is directed to make oil shale resources available for research and development purposes. This is especially important in Colorado where an estimated 80% of the oil shale resource is located on public lands administered by the BLM. | Response: Comment noted. |

| Comment Category | Commenter ID | Comment Summary | Comment Response |
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| Misc. | CL20-02 | Comment: Club 20 supports a “prudently-paced” oil shale leasing program that allows time for adequate demonstration and testing of experimental development technologies. | Response: Comment noted |
| Misc. | CL20-05 | Comment: Club 20 supports and encourages the innovative BLM practice of designating local cities, counties, and state agencies as “cooperating agencies” in the review process for proposed oil shale projects. | Response: The BLM will continue to include federal, state, and local participation in the review process. |
| Outside Scope | | | |
| Scope | WRA-50 | Comments: In allowing RD&D Lessees to tie up 5,120 acres that BLM is ensuring that the American public will not receive the full potential value of the preference right areas. By prohibiting the top filing of the preference right areas for commercial leases during the 10-year term of the RD&D lease, the BLM is decreasing the fair market value of the preference right areas. | Response: Concerns addressing development of the preference right area leasing is outside the scope of this EA. The BLM has determined that if the RD&D project is proven successful, and EIS will be prepared to analyze impacts before approving an expanded commercial project in the preferential leasing Area. |
| Scope | BF-08 | Comment: The BLM's argument that the RD&D program would be conducted on a small scale and would therefore have little potential for huge impacts cannot be extrapolated to commercial size tracts. | Response: Commercial scale operations are outside the scope of the EA. |

Typical Permits, License, and Plans For Shale Oil Research Programs

Federal Permits or Authorizations

Bureau of Land Management:

- Oil Shale RD&D Lease
- Federal Rights-of Way
- NEPA Compliance

Environmental Protection Agency:

- EPCRA Planning and Reporting
- EPCRA Risk Management
- Hazardous Waste Generator Number
- Spill Prevention, Control and Countermeasures (SPCC) Plan
- Underground Injection Control (UIC)
(depending on UIC required 6 months to 1 year)

Federal Communication Commission:

- Radio Permit

Department of Transportation

- Hazardous Materials Registration

Occupational, Safety, and Health Administration:

- Process Safety Management

State Permits of Authorizations

Colorado Air Pollution Control Division:

- Air Pollutant Emission Notice (APEN)
- (APEN) Construction Permit

Colorado Department of Labor and Employment:

- Storage Tank Permits

Colorado Division of Minerals and Geology (CDMG):

- 112d-3 Operation Reclamation Permit
(4 months up to 1 year)

Colorado Division of Water Resources / Office of the State Engineer:

- Water Well Permits
- Dam Safety Permit
- Water Appropriations

Colorado Water Quality Control Division:

- Colorado Discharge Permit System (CDPS) Permit
- Storm Water Permit – Construction
- Storm Water Permit – Industrial
- Wastewater Permit

County Permits and Authorizations

Rio Blanco County Development Department:

- County Special Use License
- Traffic Management Plan
- Sanitary Wastewater Permit
- Right Of Way Access Permit
- Building Permit
- Open Burn Permit

