

April 5, 2007

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Matt Anderson, Project Lead
Bureau of Land Management
Pinedale Field Office
P.O. Box 768
Pinedale, Wyoming 82941

Re: Draft Supplemental Environmental Impact Statement (DSEIS) for the Pinedale Anticline Oil and Gas Exploration and Development Project, Sublette County Wyoming

Dear Mr. Anderson:

Thank you for the opportunity to comment on this DSEIS. As project proponents for the above referenced project, Ultra Resources, Inc. (Ultra), Shell Exploration & Production Company (Shell), and Questar Market Resources (Questar), collectively referred to as the "Proponents," have conducted a comprehensive review of the DSEIS and have jointly met several times to discuss potential improvements that could be made to this analysis and document so that the environmental effects of the various alternatives are clearly described in the Final Supplemental Environmental Impact Statement (FSEIS) and the rationale for the decision is clearly articulated in the subsequent Record of Decision (ROD).

I. Introduction

The Proponents recognize and thank the Bureau of Land Management (BLM) for working diligently with the other cooperating agencies in preparing a DSEIS which supplements the detailed analysis that was previously performed for the 2000 Pinedale Anticline Project Area (PAPA) ROD and subsequent Decision Record (DRs) tiering from that ROD. Proponents recognize that the BLM is conducting this supplemental analysis in order to formulate a decision document that will allow BLM to better manage the public lands and minerals based on the most recent analysis available of impacts and benefits. Proponents also recognize that the Pinedale Anticline natural gas field's world-class natural gas resources must be developed in an efficient, responsible and sustainable manner. Proponents will continue to work with the BLM, the Wyoming Game and Fish Department (Game and Fish), the Wyoming Department of Environmental Quality (WDEQ) and other cooperating agencies until the FSEIS is released to ensure that the ROD provides the most reasonable and environmentally balanced approach to full-field development when compared to the authorization received under the 2000 PAPA ROD and subsequent DRs.

The DSEIS provides a thorough analysis of potential environmental impacts from natural gas development in the PAPA. The analysis satisfies the National Environmental Policy Act's (NEPA) twin aims of (1) requiring that BLM take a "hard look" at the environmental impact of the project, and (2) informing the public of the potential impacts and explaining how those impacts will be addressed. *Cf. Churchill County v. Norton*, 276 F.3d 1060, 1072 (9th Cir. 2001).

Proponents support the DSEIS and have prepared detailed comments that address a variety of issues that warrant correction and/or clarification in the FSEIS and ROD. The procedural requirements of NEPA have been followed in good faith, and, consequently, the forthcoming FSEIS and ROD will be well-reasoned and based on full and appropriate disclosure of environmental impacts. The following comments reflect the Proponents' collective suggestions for improvements to the final document. Although the majority of the following comments are important to enhancing the clarity and technical accuracy of the SEIS, they do not significantly impact the DSEIS' assessment of potential impacts to the quality of the human environment or BLM's assessment of the likelihood or magnitude of such impacts.

Organization:

These comments on the DSEIS are submitted pursuant to the provisions of 40 C.F.R. §§ 1503.1(a)(3) and 1506.6(d). Proponents request that this comment letter on the DSEIS and the attached appendices all be included in the administrative record for this matter. *See County of Suffolk v. Secretary of Interior*, 562 F.2d 1368, 1384 & n.9 (2d Cir. 1977) (addressing scope of NEPA administrative record), *cert. denied*, 437 U.S. 1064 (1978); *Silva v. Lynn*, 482 F.2d 1282, 1283 (1st Cir. 1973).

The Proponents' more substantive comments relative to issues of critical importance are contained in the General Comment Section while comments relative to technical issues and issues of less than critical importance are contained in the Specific Comment Section. In addition, for BLM's convenience, the Proponents have attached as Appendix A an errata document, which contains a number of less significant clarifications that require little or no explanation.

The FSEIS and subsequent ROD will be stand-alone documents that will incorporate decision points and requirements emanating from the 2000 PAPA ROD and subsequent DRs tiering from that ROD. Previous decision points and requirements not specifically migrating over to the FSEIS and ROD will be considered to no longer be in effect. The Proponents' recommendations on which decision points and requirements should migrate over to the FSEIS and ROD are incorporated into Appendix B.

There were inaccuracies in the Performance Based Objectives specific to Reclamation and Monitoring in Appendix E of the DSEIS beginning with the schematic diagram showing the flow of reclamation from pre-disturbance planning through the release of a bond upon completion of reclamation. Proponents have redrafted the schematic diagram to more accurately portray the steps in the reclamation process and have added to the subsequent narrative to explain more clearly the components of reclamation. This redraft of the reclamation and monitoring process is included as Appendix C to these comments.

Proponents have submitted a letter to BLM that summarizes both the Proponents' original "Proposed Action Operators Committed Measures," as reflected in Alternative B and additional voluntary mitigation measures developed by the Proponents, which will lessen potential impacts to the environment. This letter, in its entirety, is contained in Appendix D to these comments.

Guiding Principles:

The primary management plan currently in place for oil and gas development in the PAPA is the July 2000 PAPA ROD and subsequent DRs. After 2000, the collective field experience in the PAPA combined with better technology, methods of development, and a fuller understanding of the natural gas resource compelled the Proponents to advance this project proposal. The following guiding principles, which accompanied Proponents' project proposal, afford better environmental protection resulting in decreased overall effects on wildlife, habitats, and habitat use than currently occurs under the 2000 ROD while allowing full field development. In other words, Proponents' Proposed Action and its guiding principles are better for wildlife and the environment than the 2000 ROD (recognizing that some of the analyses, requirements and decision points from that 2000 ROD will migrate to the new ROD unless revised or replaced by the SEIS ROD).

The following are the guiding principles of the Proposed Action for development and delineation activities within the PAPA as committed to by Proponents. These principles accompanied the Proposed Action and demonstrate the reasons why the Proposed Action is more beneficial to wildlife and the environment when compared to the 2000 ROD. Because Alternative C, the Preferred Action, has replaced the Proposed Action's Concentrated Development Areas (CDA) with Development Areas (DAs) and has made other changes, these guiding principles to the Proposed Action will not entirely apply to Alternative C. However, they still generally guide the Proponents' philosophy for development in the PAPA. These guiding principles will be revised when the ROD is issued to more accurately conform to the provisions of the ROD.

Guiding Principles for Development and Delineation Activities

For Ultra, Shell and Questar (Parties), the following are guiding principles of the Proposed Action (Development Plan) for development and delineation activities within the Pinedale Anticline Project Area (PAPA) as committed by the Parties.

- 1) The proposal is intended to fully develop the "core" of the PAPA with the majority of development activity taking place within the core.
- 2) Development (drilling and completion activities) will be concentrated in three Concentrated Development Areas (Concentrated) within the core area. Pads will be reused / expanded to the extent possible and new road construction minimized.
- 3) These Concentrated areas will be minimized by cooperation between the operators, and by annual planning and consultation with the Bureau of Land Management (BLM) and Wyoming Game and Fish Department (Game & Fish).
- 4) Crucial winter range and sage grouse seasonal stipulations will be relaxed within these areas until continuous development activity is completed.
- 5) Reclamation will proceed as soon as practical after development drilling, completion and construction activities are completed on individual pads, reducing net disturbance as development proceeds.
- 6) The operators will undertake delineation activity, adhering to existing seasonal wildlife stipulations where at all possible, to assess the viability of the acreage. Successful follow-up will be undertaken in consultation with BLM and Game & Fish.

- 7) All activities will be conducted in such a manner as to minimize impacts on wildlife, habitat and the local communities.

Development Detail:

- Development activities will focus on full development of the core area of the PAPA. Three areas of concentrated simultaneous drilling, completion, construction, and production activities will be employed to complete development in as short a time as possible.
- Crucial winter range and sage grouse seasonal stipulations will be relaxed in these concentrated areas as required to allow year round drilling, completion, construction, and production operations.
- The areas of concentration will be as tightly grouped as possible each year. On average the total of the three areas is less than 19 square miles (plus a buffer area) as shown on the attached sample maps. [Note: Sample maps were provided with the document to BLM but are not attached to this comment letter.] On average, individual areas are less than 8 square miles (plus a buffer area). In the unusual situation where additional acres are temporarily required for the concentrated development area, Parties, BLM, and Game and Fish would jointly resolve the issue.
- Each year, the specific areas of concentrated activities will be determined through joint review of the Parties' Development Plan. The Parties (combined or separate as appropriate), the BLM, and Game & Fish will reach agreement on the final plans early in the calendar year to allow sufficient time to plan, permit, and execute new construction as required in the summer months for the coming activity year.
- The Parties will also provide a 10-year rolling forecast of PAPA activity at the same time each year to fully describe the future Development Plans on an ongoing basis.
- Each year, the Parties will collaborate as appropriate to seek opportunities to further tighten areas required for concentrated activities and reduce impacts. Then the Parties, the BLM and Game & Fish will jointly seek improvements to the Development Plan to further reduce impacts of the activities.
- The Parties will endeavor to fully develop each multi-well pad to the approved spacing before moving drilling rigs off pads.
- Rig counts may vary within the three areas in order to further facilitate concentration.
- Commitments proposed above will be used in conjunction with other commitments such as liquids gathering systems, supply stockpiling, busing, etc. to reduce impacts of the development activities.
- Maximum surface disturbance in the Development Area is forecast to be 14,961 acres by 2024.
- Reclamation will proceed as soon as practical after development drilling, completion, and construction activities are completed on individual pads, reducing net disturbance as development proceeds. Beginning in 2008, the Parties forecast that 70% of the pad will be reclaimed if pits are on the pads and 50% reclaimed if there are no reserve pits on the pad. Parties will also temporarily reclaim pads when no forecasted drilling or completion activity is expected within two years.
- This focus on development on the core of the Anticline with concentrated activities in the minimum time possible will continue to be a guiding principle until development of the core is completed.

- Questar's development activities will start at the southern end of their acreage and will proceed northward on the core area.
- Shell's and Ultra's concentrated activities will begin with one area in the northern end of their acreage positions and with one area in the south central area of their acreage. Both of these areas' activities will proceed southward on the core area.
- The individual concentrated areas will vary in shape as required to effectively tighten activities while fully developing acreage along the core and as dictated with adjacent delineation activity.
- To the extent possible, existing pads will be expanded to accommodate development requirements and multiple rigs will be used where practical.
- Associated new road construction will be reduced as possible to further reduce impacts.

Delineation Detail:

- The Parties will conduct delineation activities in the first five years after the SEIS ROD.
- Delineation will generally proceed adhering to seasonal stipulations for wildlife in all areas of the PAPA.
- In the unusual situation where relaxation of stipulations is required to conduct delineation activity, the details will be discussed and joint decisions on how best to handle the situation will be sought between the involved Party(s), the BLM, and Game & Fish in the annual planning process.
- The delineation activities will be conducted on one- or two-well pads with minimal disturbance. These pads will typically be expanded as appropriate for future development activities unless the development is delayed two or more years in which case interim reclamation will be done to reduce the pads to the size required for safe production operations.
- Successful delineation wells will be included as appropriate in the future Development Plans.
- Delineation will be conducted in the core area of the Anticline and on the near flank areas with measured movement outward only as dictated by success.
- Some delineation will also be contemplated on non-contiguous acreage as jointly agreed in the annual planning process.
- The Parties are committed to expanding use of gathering systems and other practices described in the Proposed Action where successful delineation activities warrant expansion.
- Existing roads will be used whenever possible for delineation activities.

II. General Comments

Under NEPA, an agency shall prepare supplements to either a draft or a final environmental impact statement if (1) the agency makes substantial changes in the proposed action that are relevant to environmental concerns, or (2) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. 40 C.F.R. 1502.9(c)(1). The lead agency must prepare, circulate, and file an SEIS in the same fashion as a draft and final statement. 40 C.F.R. 1502.9(c)(4). These regulations have been interpreted to require that a SEIS be prepared if the changed plans and circumstances will affect the quality of

the human environment “in a significant manner or to a significant extent not already considered by the federal agency.” *Airport Impact Relief, Inc. v. Wykle*, 192 F.3d 197, 204 (1st Cir. 1999); *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 374 (1989). A change is significant if it presents a “seriously different picture of the environmental impact.” *Arkansas Wildlife Fed’n v. U.S. Army Corps of Eng’rs*, 431 F.3d 1096, 1102 (8th Cir. 2005); *see also Marsh*, 490 U.S. at 374 (noting that when new information is presented, the agency is obligated to consider and evaluate it and to make a reasoned decision as to whether the proposed action will affect the environment in a matter not already considered). An agency does not have to provide a SEIS every time new information comes to light; “to require otherwise would render agency decisionmaking intractable, always awaiting updated information only to find the new information outdated by the time a decision is made.” *Marsh*, 490 U.S. at 374. An agency should prepare a SEIS under the “rule of reason,” which hinges on the value of the new information to the still pending decision-making process. *Id.*

Because the long-term development plan proposed by the Proponents, which includes limited year-round drilling and completions of natural gas wells within the Proponents’ leases within the PAPA, differed from the scope of the project components analyzed in the 2000 PAPA EIS and ROD, BLM prepared the DSEIS to assess the environmental consequences of the Proposed Action (Alternative B) as well as alternative courses of action. In preparing, circulating and filing the DSEIS, BLM complied with NEPA and has provided the public and decision makers with an objective evaluation of potential impacts resulting from the Proposed Action and reasonable alternatives.

Discussion of Alternatives:

In order to better illustrate the differences between the Alternatives, the Proponents have prepared the following chart depicting the components of each Alternative and the differences between those components as currently written in the DSEIS.

Operational Activity	Alternative A - No Action	Alternative B - Proposed Action	Alternative C - Preferred Action
Directional drilling from multi-well pads	Not required. Only for specific Questar leases under BLM 2004 EA.	Committed to where feasible, estimated at 8 wells per pad.	Yes.
Number of total pads	700	600	600. However, due to Development Area (DA) 5 seasonal stipulations requirements and uncertainty in DA-2 because of language discrepancies between Chapters 2 and 4, 600 pads would not allow full field development of the natural gas.
Number of new wells analyzed	1,800	4,399	4,399

Resource recovery	9 Trillion Cubic Feet (TCF) of natural gas	20 - 25 TCF	20 - 25 TCF
Year-round drilling and completion activity	Only for specific Questar leases under BLM 2004 EA for drilling (no winter completions allowed).	Yes, in 3 concentrated development areas.	Yes, in 2 development areas under different scenarios (DA-1 and DA-4). None allowed in DA-3 and 5. Unclear in DA-2 because of language discrepancies between Chapters 2 and 4.
Interim reclamation of well pads	None.	Yes.	Yes, however method and timing is unclear
Reclamation	Yes, but delayed significantly	Yes.	Yes.
Liquids Gathering System	Only for specific Questar leases under BLM 2004 EA. 25,500 fewer truck trips annually.	Yes, 165,000 fewer truck trips annually.	Yes.
Computer Assisted Operations	Not required.	Yes.	Yes.
Development Rig Movement	As currently occurring. Most development rigs have to move usually 6 times a year to keep them working around seasonal stipulations.	Rigs would stay on a pad until the pad was completed to the extent practical. <i>See</i> Appendix C in DSEIS.	Rigs stay on the pad until the pad is completed and then are not allowed to come back.
Rig NOx Emission Reduction	Only Questar year-round rigs are required to have emission controls under the 2004 EA.	Tier 2 equivalent rig emissions 50% reduction.	Recommended 80% rig engine NOx reduction, from 2005 levels, in 20% increments within 5 years. Then to 0 days deciview in year 6 for field with no consideration of economic feasibility or impacts to other interests such as wildlife or communities should that alternative cause a slow down in pace of development.
Delineation (Core / Flanks)	Not addressed.	Delineation would occur within the Core and on the flanks.	Delineation allowed anywhere, subject to seasonal stipulations.
Monitoring and research	TRC research with annual reports as outlined in 2000 PAPA ROD. Deer study for 1 more year under Questar BLM 2004 EA.	Deer, antelope and sage grouse studies. Vegetation baseline research. <i>See</i> Appendix C in DSEIS.	Performance Based Objectives assume that the wildlife research as discussed in Alternative B is also contained in Alternative C.

Long-term development planning	With APD submissions. Except for Questar BLM 2004 EA.	10-year plan and annual meetings with BLM and appropriate state agencies. See Chapter 2 and Appendix C in DSEIS.	Not specifically addressed.
Mitigation	Questar BLM 2004 EA and as part of Conditions Of Approvals (COAs) for exceptions.	Mitigation Plan within one year of ROD.	Not specifically addressed.

NEPA requires federal agencies to evaluate a reasonable range of alternatives to a proposed action. 42 U.S.C. § 4332(C)(iii); 40 C.F.R. § 1502.14. The listed alternatives must be “rigorously explored” and all reasonable alternatives must be objectively evaluated. 40 C.F.R. § 1502.14(a). Furthermore, BLM must devote “substantial treatment to each alternative considered in detail, including the proposed action so that reviewers may evaluate their comparative merits.” 40 C.F.R. § 1502.14(b); See e.g., *Miss. River Basin Alliance v. Westphal*, 230 F.3d 170, 174 (5th Cir. 2000) (an EIS must provide an “explanation of alternatives...sufficient to permit a reasoned choice among different courses of action”).

In evaluating such alternatives, an EIS must consider both the direct and indirect effects of the proposed action. See 40 C.F.R. § 1502.16(a), (b). Direct effects are those “which are caused by the action and occur at the same time and place.” *Id.* § 1508.8(a). Indirect effects are “caused by the action and are later in time or farther removed in distance, but are reasonably foreseeable.” *Id.* § 1508.8(b). Effects include ecological, aesthetic, historic, cultural, economic social, or health impacts. *Id.*

40 C.F.R. § 1500.1 states in part that “[t]he purpose of NEPA is not to generate paperwork – even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.” It was in this spirit that the Proponents advanced the Proposed Action, and it is in this same spirit of “*fostering excellent action*” that these comments are submitted.

The identification and analyses of environmental effects and values in the DSEIS was adequate for comparison of the Alternatives; however, the explanation of the Proposed Action (Alternative B) and the above-noted guiding principles were not completely presented in Volume 1 of the DSEIS. While a better explanation of the Proposed Action occurs in the attachments to the Appendices of Volume 2, many interested readers never review a draft document past Volume 1, and, therefore, do not get a complete picture of the Proposed Action, particularly how it compares to the No Action Alternative (Alternative A) and the Preferred Alternative (Alternative C).

PA-1
BI-1-1
The innovative and expensive on-site mitigation components of the Proposed Action such as the Liquids Gathering System (LGS) and directional drilling should be more clearly addressed in Volume 1 even though they are contained in Appendix C of the DSEIS. Many other major on-site mitigation measures such as interim and real-time reclamation, leaving lateral and linear migration

PA-2 PA-1 BA-1-1
 corridors available, Bald Eagle and Raptor Best Management Practices (BMPs), computer-assisted operations, etc. presented in Volume 1 should be more clearly presented to highlight the key elements of the Proposed Action for purposes of impact analysis and for the benefit of the reader. In addition to addressing and discussing the many innovative and costly on-site mitigation efforts, the BLM needs to state in the FSEIS and the ROD that the application of directional drilling from pads and the LGS techniques constitutes minimization and mitigation of development impacts because they reduce habitat fragmentation and human disturbance.

G-1 BI-1-2
 In addition, Proponents' commitment to off-site mitigation is not adequately presented in Volume 1 or the Appendices. Proponents propose to implement off-site mitigation if on-site actions are not adequate or if off-site measures are considered to be of significantly greater value. Proponents' commitment to develop a comprehensive off-site mitigation plan within one year of the release of the FSEIS and ROD is significant and should be referenced more adequately in Volume 1.

G-2 BI-1-3
In order for the reader to get a complete understanding of Alternative B, Proponents recommend that Attachments 1 through 4 of Appendix C (Transportation Plan, Reclamation Plan, Hazardous Materials Plan, and Wildlife and Habitat Mitigation Plan) be included in the description and discussions of the Proposed Action in Volume 1 of the FSEIS. In addition, it is recommended that BLM state in the FSEIS and the ROD that directional drilling from pads, the LGS, and similar components of both Alternatives B and C in fact provide minimization and mitigation benefits because they reduce habitat fragmentation and human disturbance.

No Action Alternative:

The Council on Environmental Quality's (CEQ's) NEPA regulations requires that a "no-action" alternative be included in an agency's analysis of the environmental effects of a proposed action regardless of whether it is feasible or meets the purpose and need of the proposed action. 40 C.F.R. § 1502.14(d); *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18,026, 18,027 (1981) (Question 3). Where a current plan exists to govern development, the agency can continue to approve actions pursuant to that plan while new plans are being reviewed. In those situations, "'no action' means 'no change' from current management direction or level of management intensity." *Id.* Thus, the agency must compare the potential impacts of the proposed action to the known impacts of maintaining the *status quo*. *Custer County Action Ass'n v. Garvey*, 256 F.3d 1024, 1040 (10th Cir. 2001).

As previously mentioned, the No Action Alternative means "no change," in this instance, from BLM's current management of the PAPA. Thus, in the DSEIS, the No Action Alternative means that the Proponents' Proposed Action would not occur and BLM would continue to manage natural gas development in the PAPA based on all provisions of the PAPA ROD (BLM, 2000b) and subsequent DRs. The description of the No Action Alternative should be revised to fully reflect those additional DRs, including the Questar Year-Round Drilling Proposal (BLM, 2004a), the Questar Year-Round Drilling Proposal-Condensate Pipeline Modification (BLM, 2005a), the ASU Year-Round Drilling Demonstration Project (BLM, 2005b) and the Questar Year-Round Drilling Proposal, Addendum (BLM, 2005c). This meaning is consistent with the Department of Interior's (2004) NEPA Revised Implementing Procedures (in 516 DM § 4.10(6)). Mitigation under the No Action Alternative would be the measures set forth in the PAPA ROD and any additional measures or "mid-course corrections" necessary to implement Adaptive Environmental Management as

described in the PAPA ROD (BLM, 2000b) to minimize adverse impacts disclosed by updated modeling and impacts analyses in this supplemental EIS. (BLM, 2000b, at 14, 17, 40, Appx. C-1).

AL-1
AL-2
AL-3
AL-4
BI-1.4

The DSEIS needs to be revised to more fully reflect the operational parameters of development activities under the 2000 ROD and the DRs referenced above and to contrast them with the anticipated operational features of the Proposed and Preferred Action alternatives so that the reader can readily compare the relative impacts of those differing development scenarios. To do so, the No Action Alternative should outline the key parameters of development activities, now and in the future, under existing DRs, since that in fact is what the No Action Alternative represents. BLM should articulate more fully the components of the No Action Alternative in the FSEIS. Such components are required for continued transport of natural gas and liquids from the PAPA as development carries forward under the PAPA ROD (BLM, 2000b) and are detailed in Section 2.4.2.1 – Components Common to All Alternatives. In addition to that discussion, however, it would be helpful to outline the significant parameters governing the intensity and location of development activities under existing authorizations, including density of development, road density and traffic, etc., the features which change significantly under the other alternatives. Such a presentation would flesh out and make more understandable the disturbance projected to occur under current BLM management practices and would allow a clearer comparison with the Proposed and Preferred Action Alternatives. *See* DSEIS at v.

BI-1.5
AL-5

As compared to the No Action Alternative, the Proposed Action includes year-round drilling, completions, and production of up to 4,399 additional wells on up to 12,278 acres of new disturbance, including well pads, roads, pipelines and other ancillary facilities within the PAPA. Drilling and completions within big game crucial winter habitats would occur in two of three CDA within a core area centered on the Anticline Crest. The third southern CDA is never entirely within big game crucial winter habitat and moves completely out of it within the first few years. All three CDA will generally contain sage grouse seasonal stipulated areas. The Proponents have proposed to install a LGS in the central and southern portions of the PAPA, complementing the existing LGS in the northern portion of the PAPA. Tier 2 equivalent emission controls would be installed on drilling rig engines in 29 out of 48 drilling rigs at peak drilling in 2009. *See* DSEIS at v. Thus, if the No Action Alternative were to go forward, the Proposed Action would not occur, and current BLM management practices would remain in place. BLM should clarify the differences between both alternatives by using the No Action Alternative as a baseline.

AQ-1
BI-1.6

In addition, the 2000 PAPA ROD explicitly required BLM to prepare additional environmental analysis if certain air quality thresholds were exceeded. The NOx threshold has been surpassed, which is one of the reasons BLM has undertaken the current supplemental NEPA analysis. BLM should clarify in the FSEIS that the air quality modeling prepared for the DSEIS provides the supplemental environmental analysis required by the 2000 PAPA ROD. Under the No Action Alternative, the *status quo* would be maintained, and development would continue as before in light of the supplemental air quality analysis, under conditions set forth in the 2000 PAPA ROD.

Staggered or Phased Development Alternative Need Not be Considered in Further Detail:

The CEQ NEPA-implementing regulations explain that the alternatives analysis is “the heart of the environmental impact statement” and that agencies should “[r]igorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R. § 1502.14(a). An agency’s alternatives analysis is

subject to a “rule of reason.” *Citizens Comm. to Save our Canyons v. U.S. Forest Service*, 297 F.3d 1012, 1031 (10th Cir. 2002). The rule of reason asks whether “the environmental impact statement contained sufficient discussion of the relevant issues and opposing viewpoints to enable the [lead agency] to take a hard look at the environmental impacts of the proposed expansion and its alternatives.” *Id.* Alternatives that do not meet the purpose and need of the project are not reasonable and need not be studied in detail by the agency. *Id.* at 1030. The touchstone is whether the selection and discussion of alternatives fosters informed decision making and informed public participation. *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982). Under this standard, courts uphold agency determinations on the reasonableness of alternatives where the agency has adequately explained why an alternative was eliminated from detailed consideration (as opposed to disregarding an alternative altogether).

In the SEIS scoping phase and subsequent public meetings, the public suggested that BLM consider as an alternative to the Proposed Action a staggered or phased development alternative in the SEIS. BLM explained in the DSEIS that the alternative was eliminated from detailed consideration for three reasons: (1) the No Action Alternative already includes an element of paced development because it maintains the seasonal wildlife stipulations; (2) reducing the pace of development would increase the overall period necessary to develop the resource; and (3) reducing the pace of development is not in keeping with the purpose of the Energy Policy Act of 2005. While these reasons provide an adequate basis for BLM’s determination to not consider a phased development alternative in detail, BLM should include a more thorough discussion of why phased development does not meet the purpose and need of the proposed project and does not demonstrate clear environmental benefits. BLM should include the following in its discussion of why it did not consider a phased development alternative in detail:

- In this case, the timing of the Proposed Action is critical. First, reducing the pace of development fails to meet a purpose of the Proposed Action to avoid drainage of natural gas resources from adjacent fee, federal and state leases. Thus, phased development does not meet the purpose and need of preventing drainage and does not demonstrate any clear environmental benefit that would justify its detailed consideration in the SEIS.
- Further, implementation of the Proposed Action and its accompanying environmental benefits are largely dependent on the Proponents’ ability to develop at a certain pace. In a reduced pace scenario, the Proponents cannot support many of the on-site mitigation elements of the Proposed Action such as LGS or emission performance improvements on drilling rigs, and would significantly defer timing of reclamation. The Proponents’ proposal to concentrate development in core areas of the PAPA and to delay development in the surrounding areas, construct LNG gathering pipelines, and to use Tier 2 equivalent or better drilling rigs is made possible by the certainty that the Proponents can engage in continuous development in the Core area. Phased development would also inherently lead to prolonged wildlife impacts as development is drawn out over many more years.

BLM’s analysis should reflect these key points, which confirm and support the agency’s decision to screen the phased development alternative from detailed analysis.

And finally, it should be noted in the FSEIS that this document is, in fact, a supplemental EIS which by definition supplements the analysis which led to the 2000 PAPA ROD. The original

AL-6
 BI-1-7
 AL-7
 AL-8
 G-3
 BI-1-8

PAPA EIS itself contains a detailed analysis of Staggered or Phased Development Alternative and documents BLM's basis for not considering that alternative in further detail in this SEIS. BLM has given phased development ample consideration, and a sound basis exists for not giving phased or staggered development further consideration in the SEIS. The final SEIS should reflect this.

Description of CDA:

AL-9
 Even though the analyses of environmental effects and values was in adequate detail so that the Alternatives could be compared, the description and analysis of all Alternatives should be expanded in the FSEIS so that the reader can more clearly distinguish between them. For example, the description of the CDA in the Proposed Action Alternative does not articulate the benefit of having, by design, lateral and linear migration corridors across the mesa and along the flanks at any given time. On page 4-139 of the DSEIS, it states “Under the Proposed Action Alternative, drilling and completions within CDA would continue to occur year-round within big game crucial winter ranges. However, the Proponents have not defined CDA through 2023. Year-round drilling could occur anywhere within the core area as defined for the Proposed Action Alternative (Map 4.1-5).” This statement should reflect the fact that the Proponents have not defined the CDA through 2023 because they have proposed an adaptive management process based on a ten-year rolling plan with annual adjustments made in collaboration with Game and Fish, BLM, and WDEQ which will define the CDA in relation to changing wildlife and environmental issues. Under the guiding principles document (pp. 3-5, *supra*) which the Proponents submitted to BLM (but was not included in the DSEIS), this statement does not accurately portray the Proponents’ commitment. Rather than saying Proponents have not “defined CDA through 2023,” and that “year-round drilling could occur anywhere,” the SEIS should note that Proponents have committed to work with BLM and Game and Fish on a ten-year plan to identify CDA through 2023. See Chapter 2, pp. 2-23. Proponents have identified guidelines for the size of CDA for the Life of the Project (LOP) and they would be confined to well-defined concentrated areas.

W-1
 W-2
 W-3
 BI-1-10
 In addition, the document should demonstrate the degree and manner in which the Proponents’ Proposed Action anticipates and addresses impacts of development on wildlife. The proposed consolidation and sequencing of pad and infrastructure development benefits wildlife resources over time as a result of leaving large tracts of habitat undeveloped and maintaining both linear and lateral migration corridors. The analysis needs to better address the temporal and spatial relationships between the proposed activities and activity-related impacts to wildlife. The analysis should more clearly address the effects of displacement over time and the habitat value and availability of preserved habitat to support displaced wildlife.

PA-4
 BI-1-11
Proponents recommend that the description of the CDA be more clearly presented in the FSEIS and that the Proponents’ submitted guiding principles be included in the description of the Proposed Action.

Discussion of Wells and Pads:

In the DSEIS, the terms “wells” and “pads” are sometimes used interchangeably. In order to distinguish Alternatives B and C from the No Action Alternative, it is very important that the document use the terms “wells” and “pads” accurately. There are 100 fewer pads in Alternatives B

and C as compared to Alternative A. Throughout the DSEIS, it is implied that the 4,399 additional wells will cause more pads than Alternative A's 700 active pads.

PA-5 BI-1-12 *Proponents recommend that the terminology be clarified and used correctly in the FSEIS and ROD.*

Resource Recovery:

Proponents' Proposed Action results in the recovery of 20-25 trillion cubic feet (TCF) of natural gas. The No Action Alternative ending in 2011 as analyzed results in recovery of about 9 TCF of natural gas leaving approximately two-thirds of the currently identified resource unrecovered. As the resource is currently understood, Proponents estimate it would take 4,399 additional wells for full development. Regardless of the number of wells needed to fully develop the PAPA, the Proposed Action commits to no more than 600 pads. According to the No Action Alternative, the 1,800 producing wells on 700 active pads would only extract 36% of the recoverable natural gas resource.

PA-6 BI-1-13 *Proponents recommend the FSEIS and ROD more accurately explain their commitment to developing no more than 600 pads under the Proposed Action regardless of the number of wells needed to fully develop the PAPA.*

Discussion of DAs in Alternative C and Proposed Changes:

The explanation of the DAs in Alternative C should better articulate how rigs will move within the DAs, where they will be allowed to move, and how rigs can be effectively and economically transitioned from one DA to another DA.

The Proponents, after much operational analysis, are proposing changes to the current design of the DAs. These proposed changes to Alternative C, the Preferred Alternative, present a logical development and progression process through the DAs while offering more benefits to wildlife than is afforded in the current Alternative C. The Proponents' new mitigation proposals (as outlined below and in Appendix D to these comments) to Alternative C are better for wildlife than the current No Action Alternative, the Proposed Action and the Preferred Action.

Development activity plans will be established annually via consultation with the BLM, WDEQ and Game and Fish as part of the annual planning process using the guiding principles as a basis. The annual plan will be part of a ten-year plan rolled forward each year. See discussion below pp. 26-27.

PA-7 BI-1-14 *Proponents recommend that the existing language of the DSEIS regarding the DAs and delineation be replaced with the following language in the FSEIS and ROD. The Proponents' recommended language is in response to the DSEIS analysis and does not significantly differ from the analysis in the DSEIS. While the DSEIS adequately addresses these issues, the Proponents' new language more completely provides for better wildlife benefits without the need for further NEPA analysis.*

DA-1 Development:

Unlike other DAs, DA-1 is not open in its entirety to year-round development. Consequently DA-1 will be developed using the CDA model that was outlined in the Proposed Action.

Questar plans to begin concentrated development (simultaneous drilling, completion, and production activities) from pads in DA-1 proceeding from south to north as soon as possible after an estimated 24-month transition period following the issuance of a ROD.

The CDA concept will be used to govern activities within DA-1. The CDA will cover up to six square miles at any given time, depending on the number of active pads and their locations relative to each other. The shape and location of the CDA will be established annually via consultation with BLM and Game and Fish as part of the annual planning process.

Whenever possible, the CDA will be no more than 2 miles in north-south extent. The CDA will need the flexibility to be greater than 2 miles in north-south extent, particularly when development reaches the middle section of DA-1 (approximately the line between T32N and T33N) where the Core is narrowest. The intent is to maintain a 6 square mile CDA within which the year-round development activity can proceed. Delineation in Stewart Point requiring new pads or roads will be conducted until November 15, 2008, within seasonal stipulations. After that date, Stewart Point delineation activity (both inside and outside the Core) requiring new roads or pads will only take place once the northern edge of the CDA has moved to within 1 mile of the delineation disturbance or the CDA is expected to be at the delineation location within 18 months of the delineation disturbance.

Questar, after discussions with Game and Fish, voluntarily shortened the Stewart Point delineation period in DA-1 to approximately 16 months after the ROD rather than 5 years after the ROD as is the case for DA-2, 3, 4, and 5. Because of the shortened delineation period, it is possible that some future delineation activity may be needed in DA-1 after November 15, 2008, beyond the delineation activity described in the previous paragraph. Delineation activity is not intended to be an additional mechanism for development or to circumvent the CDA approach to developing DA-1. The intent is to allow the flexibility to, if necessary, gather information required to prudently manage and understand the reservoir or establish reserve potential. If delineation activity is necessary, it would be proposed, explained, and discussed during the annual meeting process after which approval would not be unreasonably withheld. Operations would be conducted on existing pads connected to LGS and within existing wildlife timing restrictions. The intent is that these wells will result in no greater impact to wintering big game (i.e., no additional human presence or loss of functional habitat).

If the existing pad that is reoccupied for delineation drilling has already been reclaimed as part of the interim reclamation efforts, additional reclamation work will be done as soon as possible after the delineation work is completed, i.e., during the next growing season. This language will apply to all of the leases in DA-1 regardless of ownership.

DA-2 Development:

Ultra and Shell plan to begin concentrated development (simultaneous drilling, completion, production and construction activities) from pads in DA-2 and DA-4 as soon as possible after an estimated 24 month transition period following the issuance of a ROD.

Development activity plans will be established annually via consultation with the BLM and Game and Fish as part of the annual planning process using the guiding principles as a basis. The annual plan will be part of a ten-year plan rolled forward each year.

All of DA-2 is open to full year-round access for development and delineation activities (without any seasonal wildlife restrictions or stipulations for simultaneous drilling, completion, production and construction activities) immediately following an issuance of a ROD.

Ultra and Shell's development activities would follow their commitment to concentrate activities as much as is feasible by forming two groups of rigs—one at the southern boundary of DA-2 in the area immediately adjacent to the river and one at the northern boundary of DA-2 just to the south of DA-1.

Development in DA-2 would progress with rig concentrations moving toward the center of DA-2 from both the north and south ends. As rigs complete their final development activity in DA-2, they would be moved to the other Ultra-Shell shared development areas (DA-3, DA-4 or DA-5) as deemed appropriate to maintain effective concentration of activities in those DAs under the basis of the guiding principles. East-west location concentration of development activities would not be a concern in DA-2 within the Core boundaries or the expanded Core boundaries (if applicable as described in the delineation process below).

As development activity is completed near the river in DA-2 and rigs move northward, a migration corridor is created for wildlife immediately adjacent to the river (just north of the river). Once a two-mile corridor is established in DA-2 immediately adjacent to the river and two miles northward from the river (where no rigs are active within a two-mile band north of the river), Shell and Ultra would then have access to a two-mile south-north band of acreage at the southern-most portion of DA-3 for year-round development activities. As rigs move further northward away from the river in DA-2, additional access would be proportionately available in DA-3 for rigs to move northward.

As rigs complete their development activity in DA-2, they would be moved to the other Ultra-Shell shared DAs (DA-3, DA-4 or DA-5) as deemed appropriate to maintain concentrated drilling activities in those DAs under the basis of the guiding principles. There would be no east-west location concerns for activities in DA-2 within the Core boundaries.

DA-3 Development:

As noted in the description of progression of activity above, once the Proponents have access to DA-3 for year-round development activity, rigs may begin at the southern boundary of DA-3. Ultra and Shell will concentrate development activity in DA-3 with the limited access from south

to north as described above until all development activity is completed in DA-2. Development will progress from south to north in DA-3 with rigs as concentrated as possible per the guiding principles used in the annual planning meetings. Initial development activities for Shell and Ultra will be limited to the center of DA-3 along the line of the Shell checkerboard acreage with Ultra's offsetting leases and will move westward as development activities proceed.

Once full south to north access is available in DA-3 (when DA-2 is fully developed), then DA-3 rigs would concentrate development on a south to north line near the center of DA-3 (along the Shell checkerboard area), and as development continues to progress, the rigs would move westward until development activity is completed on the western flank. At that time, Shell's activity in DA-3 would be completed, and Ultra would complete its development activities on the west boundary. Ultra would then focus on completing DA-3 development by moving from the center of DA-3 eastward until the remainder of Ultra's DA-3 acreage is fully developed. This method of development would serve to alternately maintain maximum access to the migration corridors on the flanks of the Core. It also would provide sufficient time to complete and evaluate results of delineation activities in the half-mile buffer zone (as more fully described below under Delineation Activity, pp. 23-25) on the edges of DA-3 and enable the Proponents to more efficiently concentrate activities. A detailed description of delineation is provided below under "Delineation Activity."

DA-4 and DA-5 Development:

DA-4, as the DSEIS describes it in Alternative C, should be kept intact.

DA-5, as redefined, is open to full year-round access for development and delineation activities (without any seasonal wildlife restrictions or stipulations for simultaneous drilling, completion, production and construction activities) immediately following an issuance of a ROD. Ultra and Shell's development would follow their commitment to concentrate activities within these areas as closely as possible. These areas will likely have less initial activity than DA-2, and activity in these areas would fluctuate as the Proponents focus on keeping close concentration in DA-2 and subsequently DA-3 development activities.

Although DA-5 is presented under Alternative C, its management prescription is actually more akin to Alternative A—the No Action Alternative. Year-round access is not a feature of DA-5, and seasonal stipulations apply just as in the No Action Alternative: "These elements of Alternative C would not apply in DA-5 because Operators would not be able to fully develop well pads due to timing and geographical constraints related to sage grouse breeding and nesting habitats." This could very well create the situation which year-round access is designed to avoid, namely, lengthening the impacts to wildlife including sage grouse by imposing seasonal restrictions which will extend development and human disturbance over a greater span of time. In addition to extending development and disturbance, seasonal stipulations would also lengthen the period before reclamation takes place, which would result in a greater span of time for habitat function to be restored. Regarding sage grouse, the BLM needs to clarify where and when buffers will be in place for the protection of leks and why those buffers will be protective given new data on distances required to attenuate drilling noise.

Shell, Ultra, BP/Stone, and Yates Petroleum (the “Operators”) will jointly submit separate comments to encourage BLM to adopt the Preferred Alternative C subject to the Operators’ proposal to redefine the boundary and management of DA-5 as discussed in their letter. The proposed modification will provide additional environmental benefits to the greater sage grouse by minimizing surface disturbance within a core development area while setting aside large blocks of sage grouse habitat to mitigate impacts to the species.

The concept behind the Proposed Action in the SEIS and BLM’s Preferred Alternative C is to minimize impacts to wildlife by concentrating development on the crest of the Pinedale Anticline while leaving the majority of the Anticline free from development. BLM’s Preferred Alternative C divides the Core into five concentrated DAs. Within these DAs, seasonal wildlife stipulations would be temporarily relaxed so that development and subsequent reclamation could occur more quickly. Continuous development in the Core areas would also make consolidation of operations, directional drilling, use of environmentally-friendly drilling rigs, and other mitigation measures possible.

DA-5, on the southern end of the Pinedale Anticline, is outside big game crucial winter range but within a two-mile radius of several greater sage grouse leks. DSEIS, at 2-36. Unlike the other DAs, the only seasonal wildlife stipulations that apply in DA-5 are for sage grouse, as big game winter range does not extend as far south as DA-5. Under the Preferred Alternative C, seasonal stipulations for the greater sage grouse would not be relaxed in DA-5. *See* DSEIS, at 2-30. The effect is that under the current Preferred Alternative C, DA-5 will be developed in the exact same manner as the surrounding area outside the Core because seasonal restrictions would continue to apply both within DA-5 and in the adjacent area. Thus, development of DA-5 would proceed under the same management direction as in the 2000 PAPA ROD.

The Operators urge BLM to modify Preferred Alternative C to provide for management of DA-5 consistent with the management concepts applied in the other DAs. Under this approach, seasonal restrictions would be temporarily relaxed within the core development area. To offset impacts of continuous development in Core, the Operators propose to suspend or attach time-limited no surface occupancy (NSO) commitments to leases outside, but adjacent to, the Core to ensure the preservation of large blocks of sage grouse habitat. The boundary of DA-5 would also be modified to include leases owned by BP/Stone and Yates Petroleum, who did not participate in the Proponents’ original proposal for concentrated development. This proposal is made with the understanding that additional Proponent committed mitigation measures made by Ultra, Shell and Questar will not apply to BP/Stone and Yates. In the event BLM adopts a final management plan other than Alternative C, the Operators request that these proposed management prescriptions be included in the final authorized action.

Specifically, the components of the Operators’ proposed modification of DA-5 include:

Temporary relaxation of greater sage grouse seasonal stipulations in the redefined DA-5 as described on Proposed DA-5 Map, p. 21.

- Operator commitment to set aside acreage (area within the PAPA, but outside DA-5 south of the Big Game Crucial Winter Range and east of Hwy 191). This commitment is in the form of voluntary suspensions of leases not Held By Production (HBP) and term-limited NSO commitments on portions of certain leases that are HBP.

- Pad Drilling – no additional pads where one or more already exist in a quarter-quarter section, and only one pad in a quarter-quarter section where none currently exist.
- Maintenance of the 0.25 mile NSO buffer around active leks.

Under the current Preferred Alternative C, development of DA-5 and the surrounding area would continue as it has under the current management direction in the 2000 PAPA ROD. The Operators would be required to construct more well pads and disturb more surface area across the entire southern end of the Pinedale Anticline to work around seasonal sage grouse stipulations. Concentrated and continuous development in a core area, however, will allow the Operators to consolidate drilling on less pads and use more economical and efficient drilling techniques. Like in the other core areas, if seasonal restrictions are temporarily relaxed in DA-5, there will be less pads, less human activity, faster development and subsequent reclamation, guaranteed preservation of flank habitat, and economically practical and feasible rig emission NOx reduction efforts.

Modification of DA-5 would require BLM to consider any potential environmental effects of the change to the Preferred Alternative C in the FSEIS. Modifying the Preferred Alternative C and implementing those changes as part of the final ROD, however, should not require BLM to supplement and recirculate the DSEIS for an additional round of public comment. Indeed, the CEQ NEPA-implementing regulations specifically contemplate that an agency may “[m]odify alternatives including the proposed action” in response to public comment. 40 C.F.R. § 1503.4(a)(1). CEQ’s Forty Most Asked Questions provides that if an agency receives a comment that a particular alternative “should be modified somewhat, for example to achieve certain mitigation benefits,” the agency should include and discuss the modified alternative in the final EIS. *Forty Most Asked Questions Concerning CEQ’s [NEPA] Regulations*, 46 Fed. Reg. 18,026, 18,035 (Mar. 23, 1981). If the modified alternative “is qualitatively within the spectrum of alternatives that were discussed in the draft, a supplemental draft will not be needed.” *Id.* Further, if the modified alternative is “within the range of alternatives the public could have reasonably anticipated the [agency] would be considering” and “the public’s comments on the draft EIS alternatives also apply to the chosen alternative and inform the [agency] meaningfully of the public’s attitudes toward the chosen alternative,” the agency need not recirculate the modified alternative in a revised draft EIS. *California v. Block*, 690 F.2d 753, 772 (9th Cir. 1982).

Here, the proposed DA-5 redefinition modifies the Preferred Alternative to provide the same mitigation and minimization benefits as in other areas of the Pinedale Anticline. Public comments on the concentrated development concept and sage grouse impacts in other areas of the Pinedale Anticline will apply equally to DA-5. Further, modification of DA-5 would not cause any unique impact to sage grouse or any other resource that would require additional opportunity for public comment. Thus, public comment on the DSEIS will meaningfully inform BLM of the public’s attitudes toward concentrated development and its potential impacts on sage grouse, and BLM is not obligated to re-circulate a revised DSEIS for public review and comment.

The Operators’ proposed modification of DA-5 extends the same concentrated development concept applied in the northern and central portions of the Pinedale Anticline to the southern end. Without the proposed modification, development in DA-5 and the surrounding area will continue under the management direction of the 2000 PAPA ROD with unconsolidated drilling across the entire area for a much longer time period. BLM has an opportunity, however, to minimize impacts by approving the Operators’ plan to consolidate drilling in DA-5 in exchange for Operator

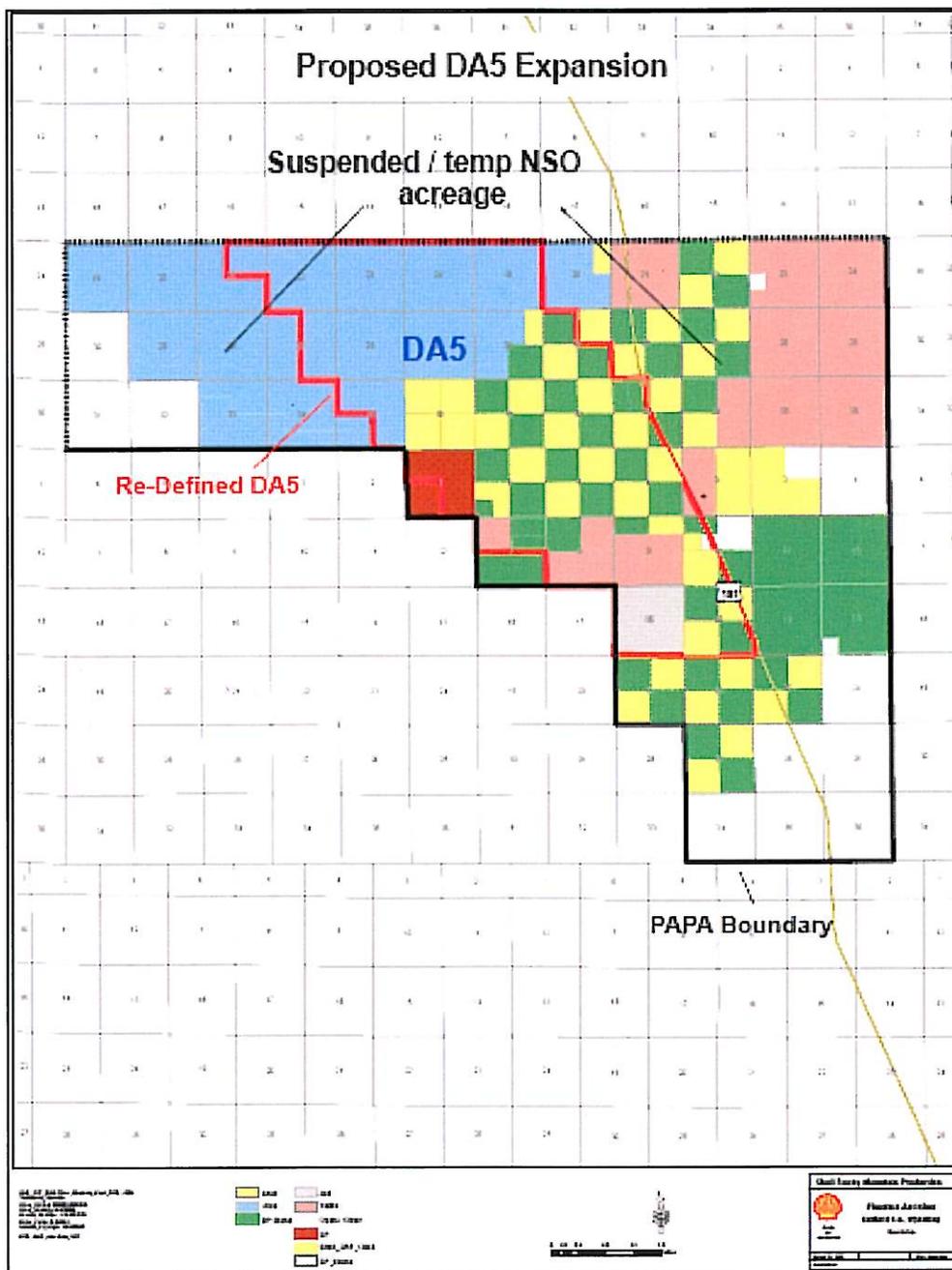
commitments to preserve undisturbed large blocks of habitat outside the Core area. Modifying DA-5 will lead to less surface disturbance, less human activity, faster development and reclamation, and economical use of new environmentally-friendly drill rig technology. The Proponents support the Operators' proposed modification to DA-5, and ask that it be reflected in the FSEIS and ROD.

For BLM's convenience, Proponents have included a map depicting the proposed core development area within the PAPA, which also illustrates the half-mile buffer designed to provide additional mitigation measures and surrounds all of the DAs. To reflect more accurately the core development area and the half-mile buffer, Proponents request that BLM use the Proposed Core Boundaries of DAs with Half-Mile Buffer Map provided below and adopt it in the FSEIS and ROD.

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To depict the proposal in more detail as explained above for DA-5, Proponents have included the following map on DA-5. Proponents request that BLM use the Proposed DA-5 Map provided below and adopt it in the FSEIS and ROD.

Proposed DA-5 Map



Other DA Comments:

In addition to the recommended fortifying language on movement and transition within DAs, several other DA components need to be addressed. In the DSEIS there is a statement in DA 1 that says: “The pattern of development moving north while reclamation is initiated to the south would continue until DA-1 is fully developed. Once final reclamation has been initiated, no new development would occur in the areas to the south of the ongoing development.” See Chapter 2, 2.4.2.4, p. 2-33. Absolute statements such as this are contrary to the flexibility which needs to be part of the Performance Based Objective Planning Process if it is to work efficiently.

For example, as development continues throughout the field and as more is learned about the resource, it is possible new technologies will be developed to make poorer quality wells economic or knowledge may be gained that result in a different final well spacing. These circumstances may require initiating activities on reclaimed areas without fragmenting additional habitat.

The decision on whether or not it is necessary to conduct additional development in areas previously reclaimed should be part of the decision-making process which will occur in the annual meetings. The annual planning meetings, as discussed below, are where the next one to two years’ development activities can be adapted or fine-tuned based on changing factors and absolute statements such as “no new development in reclaimed area” will hamper the flexibility and creativity that makes adaptive management work.

PA-8 BI-1-15
 Proponents recommend that the above noted wording be changed in the FSEIS to read: “Once transitional and delineation activities are completed, the pattern of development moving north while reclamation is initiated to the south would continue until DA-1 is fully developed. Even though final reclamation has been initiated, new development activity may occur in the areas to the south of the ongoing development where required to develop the resource on appropriate spacing and as discussed and agreed upon during the annual planning meetings.”

PA-9 BI-1-16
 Proponents recommend that the following statement be applied within each of the DAs 1 through 5: “Even though final reclamation has been initiated, development activity may occur in developed areas where required to develop the resource on appropriate spacing and as discussed and agreed upon during the annual planning meetings.”

Another statement in Chapter 2, 2.4.2.4, p. 2-30 of the DSEIS needs to be revised: “In all areas of the PAPA, Operators would be required to expand existing well pads before constructing new well pads.” Also in this section of the Chapter are statements about using existing pads in a quarter section and expanding these pads before putting in new pads and that if there were no pads in a section, only one pad per quarter section would be allowed. These statements are also contrary to the flexibility which needs to be part of the annual planning process and Performance Based Objective Planning. There are substantial operational, topographical, geographical and vegetative reasons why the Proponents did not propose such ideas. Proponents’ committed to developing with as few pads as possible and in as concentrated areas as possible is outlined in the guiding principles. Proponents committed to using existing pads to the extent possible but cannot commit to using existing pads before constructing new well pads without substantially slowing the pace of development and putting into question the ability to implement fully all the Proponent committed

mitigation. Proponents' proposal is a comprehensive plan including substantial investment in mitigation tied directly to surface access and pace of development.

PA-10
BI-1-17 | *Proponents recommend that the statements be deleted and replaced with "Existing pads will be reused / expanded to the extent possible. Pad issues will be discussed and resolved in annual planning with the BLM and Game and Fish."*

There is an inconsistency in the discussion of DA 2 that needs to be rectified in the FSEIS and ROD. In describing the type of access to DA 2 it is stated: "Year-round development activities would be allowed to occur within all areas of DA-2 beginning in 2007 and lasting until DA-2 is entirely developed." See Chapter 2, 2.4.2.4, p. 2-33. This statement is contradicted later in the DSEIS on p. 4-142: "Wellfield development would be restricted within 2-mile buffers around leks between March 15 and July 15 (BLM, 2004c) in DA-2 and in all of DA-5 (Map 4.1-4)." The statement on p. 4-142 should be eliminated in the FSEIS and ROD.

PA-11
BI-1-18 | *Proponents recommend that the inconsistent statement, "Wellfield development would be restricted within 2-mile buffers around leks between March 15 and July 15 (BLM, 2004c) in DA-2 and in all of DA-5 (Map 4.1-4)." in Chapter 4 be deleted.*

Delineation Activity:

General Description of Delineation for the LOP

Ultra, Shell, and Questar will continue to conduct delineation activities subsequent to the ROD. The purpose of this paragraph and the following paragraphs is to provide a general description of what the Proponents mean when using the term "delineation activities" within the PAPA. Delineation activities will include drilling, completion, production and construction activities both inside and outside of the Core. Delineation includes all activities required to establish reserve potential in all areas of the project (including the Core). Delineation will be required to establish reserve potential (supporting the Corporate Reserves Evaluation process as necessary for each operator), to define appropriate drilling spacing, and to define the extent and depth of economic reserves (both inside the Core and outside the Core on the flanks). In DAs within the Core, where the Proponents have year-round access, delineation will be required ahead of development to establish reserve potential and to establish the appropriate drilling spacing. Delineation activities will be coordinated through the annual planning process with the BLM and Game and Fish. Delineation activity in areas where year-round access is not allowed will be conducted honoring existing wildlife timing restrictions currently managed unless it is specifically provided to accommodate the improvement of concentrated development activities. Delineation drilling is necessary to determine the level of development activity required.

Within the Core in areas where little drilling has taken place, delineation activity is required primarily to confirm reserve potential and the appropriate well density (spacing and pattern). Drilling results in the field have demonstrated that there can be significant variability in the resource quality between adjacent quarter sections. There are many un-drilled quarter sections within the Core area.

In areas outside, but adjacent to the Core area that have not been drilled, delineation activity will be required. It is anticipated that there will be areas adjacent to the Core that will require sufficient development activity (as a result of successful delineation activity) that, in order to deliver the benefits included in the Proposed Action, these areas should be included in the DAs. In these cases, the Core would be expanded to accommodate the efficient development of these areas in the DA development process.

Delineation activity is also used to determine depth of economically recoverable gas.

Specific Description of Delineation during First 5 Years of Project:

The purpose of this section is to describe delineation activities that will occur in the first five years of the Project—specifically delineation in DA-3. It is estimated that approximately five years after the ROD, most delineation activities will be completed. However, this is subject to actual drilling times and results as well as access limitations where delineation access is restricted because of wildlife restrictions under seasonal stipulations.

The Proponents are proposing lease suspensions on the flanks of the Anticline to provide certainty regarding the spatial extent of delineation and development activities during the first five (5) years of the project. The delineation activities for Ultra, Shell and Questar conducted within the first 5 years of a ROD will be confined to the Core and within a half-mile buffer as shown above on the map, p. 20. Note, this commitment to the half-mile buffer is contingent upon approvals of lease suspensions and term NSO commitments in exchange for increased access in DA-3 as described below as well as increased access to an expanded DA-5. This process provides certainty of needed access to the Proponents in these areas and term certainty of no activity on the flank leases for BLM and Game and Fish within the first 5 years. The length of suspensions and NSOs on the flanks will be evaluated each year after the initial five years by the Proponents, BLM and Game and Fish for the need to extend commitments in order to provide necessary mitigation success. For further clarity, specifically within DA-3, in exchange for Proponents' commitments to flank acreage suspensions and term NSOs, the Proponents will have the ability to conduct delineation activities without seasonal antelope (big game) restrictions inside the Core of DA-3 as specifically described below beginning immediately after the ROD and ultimately in the half-mile buffer as needed depending on future results of delineation.

After the ROD, delineation activities would begin in DA-3 in the center portion of the DA immediately to the east of the Riverside-Boulder Township boundary. Delineation would occur on a north-south line in the western-most section of Boulder and would extend from the south boundary of DA-3 to the north boundary of DA-3 with the east-west width of the activity generally occurring within an estimated one and a half section width within any given year. The Proponents would adhere to the revised guiding principles (please see pp. 3-5) to limit the annual extent of this delineation activity (likely 2-4 rigs during the allowed times). This access will enable the Proponents to better plan future development activities in this sparsely drilled area. Specific locations of delineation activities would be discussed as part of the annual planning process with the BLM and Game and Fish. Delineation would proceed on the boundary of the western part of the Boulder Township moving to the east along a north to south line as much as possible and moving toward the east boundary of the Core and ultimately the half-mile buffer boundary on the

east side of DA-3. These delineation activities would continue until the development activities in DA-2 move sufficiently to allow development activities to begin in the southern part of DA-3 (as described above, pp. 15-16). Once development activities begin in DA-3, the delineation activities would cease on the east side and would resume again near the middle of DA-3 and move westward in the opposite direction from that as described above. This will allow delineation to occur sufficiently in advance of development as it moves westward.

In instances where delineation activities substantiate the need for development, the development will be coordinated as part of the Core development using the guiding principles during the annual planning process with BLM and Game and Fish to establish the timing for further development. In these cases, the Core outline would be expanded to include these areas within the half-mile buffer as warranted by delineation activity results. Ultimately, if delineation activities within the half-mile buffer warrant additional development and consideration for delineation outside the half-mile buffer after five years, this will be considered as appropriate during the annual planning process with the BLM and Game and Fish. Due to the large amount of delineation yet to take place within the currently defined Core development area, the situation also exists where the Core may be contracted due to delineation results.

The FSEIS and ROD need to clarify and in some cases define processes. For example, there needs to be a process in place which allows for DA boundary changes based on field performance and emerging technologies and methods; however, Proponents cannot adapt to changing conditions without a defined process. In addition to not having a defined process to change specific DA boundaries, the DSEIS does not contain a process that allows consideration of Core boundary changes based on field performance or other changing conditions. The ability to change both DA and the Core area boundaries is central to being able to manage the development of the Core based on new information, technology, wildlife and other environmental conditions.

The Proponents recommend that the ability to change the DA and Core boundaries should be acknowledged in the FSEIS and ROD, and further Core boundary discussions should be part of the annual meetings of the Performance Based Planning discussed below.

Reclamation:

Discussions on reclamation need to be fortified and in some cases corrected. The Reclamation Plan in Appendix E should more accurately reflect the operational requirements of pad activities, construction, operations and reclamation activities. For example, it is not practical to require immediate reclamation of all pads within a very narrow timeframe. In addition, as currently written, it will be impossible for the Proponents to comply with the specific language contained in DSEIS Appendix E. Please see Appendix C to these comments for recommendations to improve the Reclamation Plan. The coverage requirements in the DSEIS' Appendix E would introduce non-native grass species that are incompatible with the BLM's State and Regional Sage Grouse restoration goals.

For the reasons enumerated above, Proponents recommend that the Reclamation Plan contained in Appendix E of the DSEIS incorporate Proponents' attached Appendix C in the FSEIS and ROD.

The DSEIS treats surface disturbances inconsistently in the document. For example, charts and text in Chapter 2 of the DSEIS include reclamation activities and pipeline corridors as temporary disturbances. Charts and text in Chapter 4 of the DSEIS, however, do not. BLM should treat these surface disturbances consistently throughout the DSEIS. Areas such as pipeline corridors that are reclaimed immediately should be considered temporary surface disturbance for the purposes of this analysis and mitigation.

RC-2
BI-1-21

Proponents recommend that any disturbances, which receive immediate or interim reclamation and thereby retain habitat function, should not be considered as permanent surface disturbances requiring compensatory mitigation as was incorrectly done in Chapter 4 and Appendix E.

Performance Based Planning:

The description of the Performance Based Planning for Alternative C and subsequent monitoring should be expanded in the FSEIS so that the description presents a more complete picture of how Performance Based Planning and checks and balances will work over time in the PAPA. The Proposed Action Alternative B's ten-year rolling plan, fine tuned in annual multi-agency meetings, is not referenced in the description of the Performance Based Planning in Alternative C, which leaves the Proponents to assume that there is no long-term plan that can be modified in annual meetings. In addition, the Performance Based Planning does not reference any other agency's involvement in the annual meetings. Proponents assume this will be clarified in the FSEIS.

The intent of the annual meetings is to assess operations, emerging wildlife trends, environmental factors and other issues relevant to the Proponents' activities and to adjust operations as necessary. The Performance Based Planning needs to define the annual meeting process. In addition, it is recommended that scientific and measurable monitoring and mitigation components for the major species (mule deer, pronghorn and sage grouse) be added to and articulated in the description of Performance Based Planning. Proponents fully support monitoring and mitigation based on measurable impacts directly attributable to gas development, based on verifiable wildlife data that can be replicated and reviewed by an independent panel. Performance Based Objectives (PBOs), as introduced in the DSEIS Appendix E, is a new concept, and while Proponents support this principle, they recommend caution with its implementation. As the details of implementation of PBOs were not clearly defined in the DSEIS Appendix E, Proponents are concerned that any effort to pre-determine and prescribe mitigation responses, prior to sufficient data and analysis being available, will be subject to varying interpretation, and likely lead to a mitigation plan that does not deliver its objectives. As such, Proponents are committed to working with BLM and Game and Fish to develop a monitoring and mitigation plan, based on verifiable wildlife data that can be replicated, which can unambiguously determine impacts related to gas development activities.

It will be at the annual meetings where Proponents, BLM, DEQ, Game and Fish, and other appropriate agencies review and refine Proponents' annual and 10-year plans for development and delineation activities and discuss mitigation and monitoring needed to offset impacts to air quality, wildlife, and/or grazing.

As outlined earlier, neither the process for the annual meetings nor the actual performance-based objectives have been clearly defined. The participants in the annual meetings will need to review

the Proponents' upcoming annual plan specifically in context of the overriding 10-year plan. The components of the operational plan, which will need to be reviewed, are rig locations / movement, pad construction and facilities construction and expansion, reclamation, well spacing update and the status of APDs. In addition to the Proponents' development and operation plan, other issues which will need to be addressed at the annual meeting include air quality (e.g. DEQ would share monitoring and modeling results, impacts and mitigation, rig permitting and compression), wildlife (review of research results and data, review of emerging population trends and discussion on performance-based mitigation measures), and agriculture and livestock grazing (discussion on location of activity relative to livestock, water and forage availability). The FSEIS and ROD should include a process to efficiently reach resolution in the event that consensus cannot be reached by the participants in the annual meeting.

Elements of 2000 PAPA EIS and ROD:

The DSEIS is silent on which components and requirements of the July 2000 PAPA ROD and other PAPA EAs will migrate to the SEIS and ROD. It is Proponents' understanding that the new ROD will be a stand-alone document superseding and supplanting the previous decision documents. This should be clarified, and those components from previous NEPA decision documents which migrate to the new ROD should be clearly articulated. Appendix B of this letter provides Proponents' recommendations on which previous requirements should migrate to the FSEIS and ROD from the PAPA ROD and other DRs.

Reduction of Drill Rig NOx Emissions:

Proponents recommend that three paragraphs at pages 4-74 - 4-75 of the DSEIS be replaced with the language set forth in paragraphs 1 through 7 at pp. 28-30 below. The three paragraphs to be replaced would be the last paragraph beginning on page 4-74, which begins "Predicted impact reduction by modeling is based on . . .," and the two paragraphs that follow. The replacement language would be followed by the last paragraph in Section 4.9.5 of the DSEIS, which begins, "At any time, BLM and/or the Operators may run air dispersion models . . ." The Proponents believe that this language would be a more appropriate approach to meet the BLM's goals regarding visibility in Class I Areas in light of ongoing consultations and new information as it becomes available.

The Proponents recommend drill rig NOx emissions be reduced to 2005 levels and then an additional 80% over the next forty-two months after BLM issues the ROD. These emission reductions demonstrate compliance with all federal and state air quality requirements and reduce visibility concerns.

Alternative C in the DSEIS, Phase II mitigation also requires that in addition to an 80% drill rig NOx emissions reduction, the Proponents will use "any and all available means" to ensure that visibility impacts will not exceed 1.0 deciview on any day. *See* Chapter 4, p. 4-75. Proponents have many concerns with this requirement.

This language could result in the Proponents having to reduce activity levels or take other drastic measures if there are no technologically and economically feasible or reasonable means to further reduce drill rig emissions, despite the very significant investment in drill rig emissions reduction

equipment and methods to achieve the 80% reduction level. In addition similar to never allowing new development in reclaimed areas in DAs, this type of absolute statement is contrary to Performance Based Planning.

NEPA does not require that BLM adopt a full-blown mitigation plan to address each and every impact identified in the DSEIS. BLM need only identify the impacts and provide reasonable mitigation for such impacts, as the 80% reduction requirement does. “Any and all available means” (Chapter 4, p. 4-75) is an absolute mandate that leaves no room for balanced or reasoned judgment based on the facts.

The WDEQ is the appropriate regulatory entity to address any additional concerns with visibility from the project. Any remaining concerns with visibility can be assessed once the 80% reduction is achieved.

The modeling in the DSEIS demonstrates a wide range of predicted visibility impacts depending on the model used and the assumptions incorporated into the model. The visibility monitoring results reported at pages 3-58–3-59 of the DSEIS indicate no degradation in visual range during periods of large-scale oil and gas development in the PAPA and surrounding areas. The variation in the modeling results, coupled with the monitoring data, suggest it would be premature at this time to try to define what additional mitigation, if any, might be necessary or appropriate beyond the 80% reduction. The WDEQ should assess modeling alternatives, in light of visibility monitoring data, and address any remaining visibility concerns after the 80% reduction is achieved.

More refined modeling may even demonstrate that visibility is adequately protected and that no further emission reductions are necessary.

The Proponents commit to the additional following air mitigation measures to Alternatives B and C which can be undertaken without creating unacceptable air quality impacts.

1. To provide more predictability during the development phase, Proponents will annually develop a ten-year rolling forecast or development plan for submission to BLM and WDEQ Air Quality Division (AQD). The forecast or development plan should report the anticipated activity levels and projected air emissions from all significant emitting units including compression for each year during the upcoming ten-year period. This annual forecast should continue through the end of the development period. Proponents will meet annually with BLM and AQD to review monitoring data and evaluate alternate ways to achieve the visibility impact reduction goal specified in paragraph 4, beyond the 80% rig engine NOx emission reductions specified in paragraph 3.
2. No later than one year after signing of the ROD, Proponents will adopt air emission strategies reducing predicted visibility impacts to 2005 predicted levels which are modeled to result in no more than 45 days greater than 1.0 deciview of visibility impairment. This would provide an almost immediate reduction of predicted visibility impacts from current development.

3. Proponents will accelerate the use of advanced technologies to reduce drill rig engine NOx emissions to reduce predicted visibility impacts to the 80% drill rig engine NOx emissions reduction scenario as described in the DSEIS, which is modeled to result in no more than 10 days greater than 1.0 deciview of visibility impairment. Such reductions shall occur no later than the end of year 2010 (or 42 months following signing of the ROD) instead of the five-year period proposed under the DSEIS. To ensure that such drill rig emission levels are enforceable, Proponents understand WDEQ-AQD would establish permitting requirements for all rig engines operating in PAPA.
4. During annual planning sessions as specified in paragraph 1, Proponents, AQD and BLM will collaboratively identify methods to reduce air emissions beyond the 80% drill rig engine NOx emissions goal. No later than the fifth annual planning session following signing of the ROD, Proponents will submit to the collaborative group an evaluation of alternatives and recommend a plan that addresses all sources from project activities and whose aim is to meet a predicted visibility impact objective of no more than zero days greater than 1.0 deciview of visibility impairment. The Proponents' evaluation will identify the expected reduction in predicted visibility impairment which can be achieved by each alternative as well as an implementation schedule. No later than the sixth annual planning session following signing of the ROD, the collaborative group, with input from Game and Fish will select and Proponents will begin to implement a plan which minimizes any adverse wildlife or other impacts, is technically and economically practicable, and is as close as is reasonably possible to the goal of zero days greater than 1.0 deciview of predicted visibility impairment. The collaborative group will also specify a schedule for completely implementing the plan.
5. All operators will comply with AQD permitting regulations to establish emission limitations for production equipment and compression facilities and will voluntarily institute any other emission reduction measures that have been proposed as part of the alternate method selected by the collaborative group.
6. The Proponents will fund the following additional activities, to be carried out by AQD:
 - a. Supplement AQD's existing Jonah Interagency Office (JIO) field inspection staff by adding an inspector dedicated to monitoring compliance in the PAPA for a period of five years at a cost not to exceed \$400,000 for the five-year period.
 - b. AQD will conduct a formal "network assessment" of the adequacy of the existing ambient monitoring network in southwest Wyoming. Based on the results of the "network assessment," Proponents will provide a funding contribution to AQD not to exceed \$1,250,000 over a five-year period to establish and/or operate monitors recommended by the network assessment for pollutants of interest from the PAPA project. AQD will, to the extent practicable, use monitor data collected by any new and all existing local monitors in performing future air quality modeling. AQD and the Proponents will cooperate to collect ambient ammonia data for use in modeling, including modeling to evaluate the adequacy of alternate emission reduction options required under paragraph 4.

- c. Supplement AQD's existing capability to analyze and report on ambient monitoring data by funding an analyst (1) in AQD's monitoring group for a period of two years at a cost not to exceed \$160,000 for the two-year period, and providing \$200,000 as a contribution to the expected costs of \$400,000 to allow AQD to upgrade its ambient air quality data management systems. AQD would agree to use such staff and funds to improve its ability to analyze data to more effectively disseminate those data to the general public and to use ambient monitor data in future air quality modeling associated with the project.
7. A DSEIS ozone air quality analysis was conducted under NEPA for the purposes of allowing BLM to evaluate and disclose potential environmental impacts from the project. AQD has embarked on further evaluation of ozone formation in the Upper Green River Basin, including the PAPA, through a field study and modeling project to understand previously monitored elevated ozone events and gather additional information. It should be noted that to date, there is no finding of an ozone air quality standard violation at the monitoring sites adjacent to the PAPA. The results of the field study and modeling project will form the basis for AQD to develop strategies to manage ozone formation in the Upper Green River Basin to ensure that the area remains in compliance with current and future Wyoming Ambient Air Quality Standards for ozone.

Proponents recommend that Alternative C, Phase II mitigation should be revised to require reduction of emissions to 2005 levels in year one, 80% reduction within 42 months after BLM issues the ROD and continued collaboration thereafter between Proponents, BLM and AQD on visibility protection. It is further recommended that the absolute statement "any and all available means" be deleted and replaced with language from paragraph 4 above that "No later than the sixth annual planning session following signing of the ROD, the collaborative group, with input from Game and Fish will select and Proponents will begin to implement a plan which minimizes any adverse wildlife or other impacts, is technically and economically practicable, and is as close as is reasonably possible to the goal of zero days greater than 1.0 deciview of predicted visibility impairment from project sources. The collaborative group will also specify a schedule for completely implementing the plan."

Proponents also recommend that future modeling incorporate available measured data.

Electrification:

The Proponents anticipate that future operational changes may be instituted to further reduce environmental impacts of development activities in the PAPA. For example, the use of electrical power or other alternative power sources, such as yet-to-be developed combustion engines with reduced emissions, may be desired. Alternatively, the Proponents may need to employ additional natural gas-powered compression or electric-powered compression to assist in production. Whether, when, or where such additional or new power supplies might be employed is unknown.

Under either scenario, however, the impacts to air quality and to the environment would be minimal. While neither the possibility of additional future compression or potential power sources

is sufficiently concrete nor certain to support detailed analysis in the SEIS, the Proponents recommend that BLM disclose the potential for such future operational developments in the FSEIS, and, to the extent possible, discuss generally the types of potential impacts that natural gas-powered and electric-powered compression may cause. In the alternative, if BLM regards the likelihood of such activities as too speculative to support reasoned analysis of environmental effects, that conclusion should be stated in the FSEIS and ROD. Moreover, BLM should note that if in the future it becomes desirable or necessary to employ such power sources, further NEPA analysis will be conducted to determine the environmental effects of those activities. *See Scientists' Inst. For Pub. Info. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973) (noting that "one of the functions of a NEPA statement is to indicate the extent to which environmental effects are essentially unknown.").

Mitigation:

NEPA requires a reasonably complete discussion of possible mitigation measures. *See Robertson*, 490 U.S. at 351. The CEQ regulations require that an EIS address mitigation measures in evaluating the proposed action, alternatives to the proposed action, and environmental consequences, and to "include appropriate mitigation measures not already included in the proposed action or alternatives." 40 C.F.R. 1502.14(f). Furthermore, "[a]ll relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside of the jurisdiction of the lead agency." *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18,026, 18,031 (1981).

In keeping with these principles, Proponents have voluntarily proposed numerous on-site and off-site mitigation measures to avoid, minimize and mitigate impacts from natural gas development and production activities in the PAPA. These are detailed in Proponents' attached Appendix D, which is a letter submitted to BLM by the Proponents outlining both the Proponents' original "Proposed Action Operators Committed Measures," and additional voluntary measures developed by the Proponents to address potential resource impacts identified during the SEIS process. These mitigation measures should be identified and considered in the FSEIS and ROD.

Transition from PAPA ROD to the SEIS ROD:

It is expected that it will take approximately 24 months to fully transition from PAPA ROD operations to operations detailed in the FSEIS and ROD. This is due to a number of factors, including lead time for APDs, construction/reclamation, acquisition of new equipment and delineation/down hole well density. This transition discussion does not alter the specific time commitments made by the Proponents in the Proposed Action or the Proponents' recommended changes to the Preferred Alternative.

The specific pads and wells that rigs will occupy for winter 2007-08 and summer 2008 must be identified, permitted, and constructed before the SEIS ROD is expected to be final. This is an 18-24 month process that includes surveying and staking locations, performing multiple onsite inspections with regulatory agencies, designing down hole well paths and anti-collision planning, allowing processing time for regulatory agencies and construction time. This long lead time will result in some development operations occurring outside of the concentrated areas through summer

2009 even though the planning, design, and permit process for DAs will begin immediately upon the issuance of the ROD. Dirt work (including both pad construction and reclamation) will not be performed during times of frozen soil which can delay activity by up to 6 months and must be accounted for in the well planning lead time. Following SEIS ROD, pads which require interim reclamation will be identified by the Proponents based on which areas are to be occupied at what times. As delineation wells are drilled, this reclamation requirement will increase. Pad reclamations will begin as soon as possible after the SEIS ROD and will be ongoing throughout the development phase of the project. Due to the limited number of companies providing this service and the fact that work is limited to about half of each year due to soil conditions, it is anticipated that the initial phase of reclamation will be lengthy. The exact amount of time required is not easily predicted due to the process of voiding pits, weather impacts, and other variables. The activity plan for each construction and reclamation season will be part of the annual planning process.

Designing, planning, permitting and constructing the LGS to collect liquids from Shell and Ultra wells is expected to take approximately 24 months. Questar will also need to expand its existing LGS including line loops and additional or expanded central gathering facilities (CGFs) so that the system can handle year-round drilling in small, concentrated areas which it was not originally designed to do. The Questar system will remain operational during these expansion activities. Expansion to LGS will be ongoing through the LOP.

A component of the Proponents' plan is to move rigs onto pads in concentrated areas and to drill all the necessary wells for that pad before moving the rig off (to the extent possible). Factors impacting the ability to accomplish that goal include timely drilling on delineation pads where well/resource quality is undetermined and timely evaluation of ultimate down hole well density for different areas of the PAPA. On delineation pads, multiple wells may be required, and then the rig will move off while production data is obtained that will determine how many more wells, if any, should be drilled. This type of situation often occurs on the edges of the field as the aerial extent of the gas resource is being determined but also includes determining commercial viability for deeper gas-bearing zones. The process to determine well spacing includes permitting and drilling a pilot project, gathering production and pressure data from those pilot wells and offset wells, modeling the results of the pilot wells and applying for a spacing hearing with the Wyoming Oil and Gas Conservation Commission (WOGCC) and having a successful decision from that hearing. This process can take several years, and the result is that certain pads may have all of their currently spaced wells drilled, their rigs moved, and the pad reclaimed on an interim basis before the denser well spacing is understood, applied for, and approved. This could result in Proponents needing to temporarily reoccupy certain pads to drill the higher density wells. Knowing the ultimate well density is one requirement for the Proponents to be able to place a rig on a pad and keep it there until all wells for that pad are drilled and will be part of the annual planning discussion.

III. Specific Comments

Executive Summary:

The Executive Summary misrepresents some of the data in the body of the document. The Executive Summary needs to be reviewed and revised in the FSEIS and ROD after recommendations are incorporated in the body of the document.

Chapter 2:

The discussion of rig count in the Proposed Action implies a rig limit, which Proponents have not proposed. The language needs to be clear that the rig numbers are provided for purposes of analysis only and are not a limit. DSEIS Chapter 2 2.4.2.3, at 2-27.

Alternative C proposes that only one well pad would be allowed in each quarter section without BLM case by case consideration. Proponents recommend that this statement be revised to state: “Unless there are topographic constraints which limit pad size, or as specifically addressed in detailed DA development description, Operators will be allowed only one pad per quarter section. Other justification for more than one well pad per quarter section, e.g. safety, will also be considered.” See DSEIS Chapter 2 2.4.2.4, at 2-33; see also additional discussion under General Comments, p. 22.

The statement “Most new producing wells would be required to be connected to a LGS” should be clarified so that is it clear that geography and/or economic or technical feasibility are considerations that BLM will allow as exceptions. DSEIS Chapter 2 2.4.2.4, at 2-33.

Chapter 3:

The discussion on bald eagles does not mention that the Proponents have voluntarily agreed to utilize Best Management Practices along the New Fork Corridor for eagles and raptors. The list of Best Management Practices was developed in concert with the U.S. Fish and Wildlife Service (USFWS).

The voluntary subscription to Best Management Practices for Bald Eagles and raptors is germane to this section. Reference to the Best Management Practices should be included. See DSEIS 3.21.1.1 Federally Listed, Proposed and Candidate Species Bald Eagles, at 3-97, 3-98.

The discussion of wildlife and wildlife behavior in the affected environment portion of the DSEIS (Section 3.22.1) does not identify movement patterns of pronghorn or mule deer in detail. This makes it difficult to assess either the impact of development to date on migration and movement or the impacts of future concentrated development aligned along the spine of the PAPA. This discussion should be bolstered.

“Pronghorn fawn production within the entire herd unit increased during 2004, a likely response to increased precipitation during water year 2003-2004.” While this is a true statement, it is significant to note that even though the fawn production in the entire herd unit dropped in 2005, the 2005 fawn production is still the second highest fawn production since 2000 and this statement

W-6
BI-1-31 should be put into perspective by noting in the FSEIS and ROD that it is the second highest fawn production since 2000. DSEIS Big Game Pronghorn, at 1-106, 3-105, 3-107.

W-7
BI-1-32 “Pronghorn Sublette Herd Unit Population, Productivity, and Harvest” shows that the 2005 post hunting season population estimate is 47,930 pronghorn. This is a significant number since it represents the highest pronghorn population estimate since before 1999. In order to give the reader an accurate picture of population trend since 1999 it should be referenced in the narrative that the population estimate for pronghorns in 2005 is the highest since 1998. DSEIS Chapter 3 3.22.1.1 Big Game Pronghorn, at 1-106, 3-105, 3-107; *see also* Table 3.22-1.

W-8
BI-1-33 “Pronghorn Northern Sublette Herd Unit Population, Productivity, and Harvest” shows that the 2005 post hunting season population estimate is 27,537 pronghorn. This is a significant number since it represents the highest pronghorn population estimate since before 1999. In order to give the reader an accurate picture of population trends on the PAPA portion of this herd unit since 1999 it should be referenced in the narrative that the population estimate for pronghorns in 2005 is the highest since 1998 (Chapter 3, 3.22.1.1 Big Game Pronghorn 3-105, 1-106, 3-107 Table 3.22.2).

W-9
BI-1-34 “Pronghorn Northern Sublette Herd Unit Population, Productivity, and Harvest” shows that the pronghorn fawn production in 2005 is the second highest since 1999. It also shows that the 2005 fawn production for the Northern Sublette Herd Unit is smaller but not substantially different than the fawn production in the entire herd unit (0.652 fawns per doe on the northern herd unit vs. 0.688 on the entire herd unit). These are significant numbers since they represent the second highest pronghorn fawn population estimate since 1999 and because Northern Sublette Herd Unit contains the PAPA. In order to give the reader an accurate picture of population trend on the PAPA portion of this herd unit since 1999 these figures should be referenced in the narrative. *See* DSEIS Chapter 3 3.22.1.1 Big Game Pronghorn, at 1-106, 3-105, 3-107; *see also* Table 3.22-2.

W-10
BI-1-35 “Preliminary study results suggest that continual fragmentation of previously undisturbed land is leading to reduced use by pronghorn. Pronghorn appear to abandon habitat in parcels with patch sizes at or about 600 acres (Berger et al., 2006).” This is a preliminary finding which has neither been substantiated by the Game and Fish, nor has it been subjected to any form of peer review. At this stage of the research study, this figure is unverifiable. This paragraph should be eliminated, and any analysis and conclusions based on this figure should also be eliminated. *See* DSEIS Chapter 3 3.22.1.1 Big Game Pronghorn, at 3-108.

W-11
BI-1-36 While no decreasing trend in mule deer density was noted in the Pinedale Front Complex control area in the Sublette Mule Deer Study, the comparison cannot be made with the Mesa since the control area location shifted and was expanded throughout the duration of the study. As such, BLM should delete the sentence “No such trend was observed on crucial winter ranges unaffected by natural gas developments that were used as a control in the study (Pinedale Front Complex).” Emigration rates in the control area were not consistently used. DSEIS Chapter 3 3.22.1.1 Mule Deer, at 3-111. While the current mule deer study shows only limited emigration of deer from the Mesa during winter, it was not designed to identify or track emigration, and, therefore, reference to “extremely limited emigration” is not warranted.

W-12

W-13
W-14
BI-1-37
BLM should delete the sentence “Although the wintering mule deer population on the Pinedale Mesa has declined each year from 2001 to 2005, available information indicates deer are not using alternative habitats, since emigration to other winter ranges is extremely limited.” The study is not designed to measure whether the mule deer utilize alternative habitats because it does not look outside the test area. DSEIS Chapter 3 3.22.1.1 Mule Deer, at 3-111. It should be noted that the years quoted represent summer drilling and completions during seasonal restrictions as well as year-round trucking of produced liquids. Questar’s LGS was not approved and in place until the winter of 2005-2006.

W-15
BI-1-38
For an unknown reason, fawn mortality rates were much higher than expected in the control group while they were lower than expected in the treatment group (Mesa). The conclusion drawn from this is that it is all the more important that all winter ranges be protected. Unknown factors that cause high fawn mortality rates in areas without natural gas development should not be used as a reason for restrictions on areas with natural gas development.

C-1
BI-1-39
The programmatic agreement on the Lander Trail included in Appendix H of the DSEIS is not discussed within Chapter 3 to the degree needed to allow the reader to understand the context of the agreement and how it facilitates development within certain parameters along the Trail. The FSEIS and ROD should disclose and discuss the objectives of the agreement.

Chapter 4:

“These habitats would be physically eliminated through implementation of alternatives until surface disturbances have been reclaimed. However, revegetation of surface disturbances within native vegetation will alter wildlife habitats for the life of the project, especially habitats defined by shrub and tree species.” This is only true if the revegetation within the native vegetation is with non-native plant species. The Proponents have committed to utilizing native species for revegetation so that habitat function is restored as quickly as possible. *See* Proponents’ included Appendix C Proponent Committed Measures for Reclamation (Proponents will return as much of the disturbed acreage as possible to its pre-disturbed state as quickly as possible). Final revegetation will begin when the last of the wells on the pad is completed. Drilling and completing all wells on a pad sequentially results in earlier final revegetation and a smaller disturbed area. Proponents propose to use a variety of options and methods, such as the new habitat seed mixture of grasses, shrubs, and forbs and a new application method, which is in its second year of demonstration. This expedited reclamation will increase habitat patch sizes and will reduce habitat fragmentation for sagebrush-obligate species. Proponents estimate that on the larger consolidated pads, approximately 70% of the pad will be reclaimed if reserve pits were on the pad, and if there are no reserve pits, the surface disturbance area is smaller, and about 50% of that smaller pad would be reclaimed. DSEIS Chapter 4.20.4 Cumulative Impacts, at 4-144.

W-16
BI-1-40
While there will likely be reduced levels of mule deer use in areas proximal to field developments, these areas are only ineffective if they are not used, and existing data reveal that they are used in all years by some animals and in some years by most animals. It is suggested that the words “remain ineffective” be replaced with the words “less effective” on line 6. DSEIS 4.20.3.1 Big Game Chapter 4, Mule Deer, at 4-132.3.

W-17 BI-1-41 “Available information, since 2002, indicates that the mule deer population on the Pinedale Mesa steadily declined from more than 5,000 animals in 2002 to less than 3,000 animals in 2004-2005 (Sawyer et al., 2005a).” The decline was never “steady,” which might indicate a single cause. In addition, since this DSEIS went to the printer, the 2006 Mule Deer Study has shown no further decline and that the numbers are beginning to increase. The mule deer population showed no further decline in the latest annual report by the researcher. This statement should be updated to reflect the newest findings. DSEIS 4.20.3.1 Big Game Mule Deer, at 4-131. It should be noted that the years quoted represent summer drilling and completions during seasonal restrictions as well as year-round trucking of produced liquids. Questar’s LGS was not approved and in place until the winter of 2005-2006.

W-18 BI-1-42 “After the first year of the study, none of the study animals utilized the Jonah Field Project Area. Analyses of preliminary results indicate that habitat patches of less than about 600 acres are under-utilized or abandoned by wintering pronghorn (Berger et al., 2006).” Although the first year of the report stated that none of the study animals utilized the Jonah field, that finding was nullified a few months later when the same researchers located animals in the Jonah field. The 600 acre fragmentation figure is a preliminary finding, which has neither been substantiated by the Game and Fish nor has it been subjected to any form of peer review. At this stage of the research study this figure is unverifiable. This paragraph should be rewritten to accurately portray the situation with pronghorn in the Jonah field. The reference to the 600 acre habitat fragmentation threshold should either be qualified or eliminated, and any analysis and conclusions based on this figure should also be eliminated. DSEIS 4.20.3.1 Big Game Pronghorn, at 4-130.

W-19 BI-1-43 “Each well pad could be considered as a patch of altered or unusable wildlife habitat.” The way this reads it suggests permanent disturbance and infers permanent loss to wildlife. This is not accurate; the loss is only for that span of time between excavation and reclamation. This statement should be deleted. DSEIS Chapter 4.20.3.1 Habitat Fragmentation and Effectiveness, at 4-128.

W-20 BI-1-44 “Declines of greater sage-grouse are expected to be more rapid and more extensive under the Proposed Action Alternative than by the No Action Alternative because winter drilling would generate noise and considerably more traffic (due to drilling and completions). This would occur even if development activities are restricted within 2-mile buffers around leks between March 15 and July 15 (BLM, 2004c).” The Proponents have funded a five-year sage grouse research project to determine the impact of their operations on sage grouse. At this point in time this statement is speculative. BLM should rewrite this statement and should reference the study that it is being conducted to answer these questions. DSEIS 4.20.3.3 Alternative B Proposed Action Alternative, at 4-139.

PA-16 BI-1-45 “Under this alternative, the distribution of disturbance includes the liquids gathering system proposed for the central and southern portions of the PAPA, and all pipelines and ancillary facilities identified in Table 2.4-8 (through 2011) and Table 2.4-9 (through 2023).” The LGS presents a very temporary disturbance since it is reclaimed shortly after it is built. The bigger issue is calling the LGS a “disturbance” when in fact, it is a mitigation measure volunteered by the Proponents to reduce human disturbance to wildlife by substantially reducing truck traffic.

PA-17 BI-1-45
 In fact, in Chapter 4 Environmental Consequences 4.7.3.1 Summary of Impacts Common to All Alternatives, Pipeline and Gas Sales Pipelines on page 4-51 it is stated: “Reclamation of the disturbed construction rights-of-way for each pipeline would allow for overall retention of the landscape’s existing character. Within a short period of time (3 years), apparent changes in landscape character within the construction rights-of-way should not be readily noticeable to a casual observer.” Please see Appendix C Shell and Ultra Liquid Gathering System page C-5: “Shell and Ultra plan to install liquids gathering systems to collect condensate and water from existing and future well pads. The piping right-of-way disturbance would be a short-term impact during piping construction and burial. Following installation of the piping, reclamation and seeding of right-of-ways would take place to restore the disturbed areas to a native state.” BLM should either discuss the temporary disturbance caused by implementing this mitigation measure so that the reader has the proper perspective, or it should eliminate the disturbance from the corresponding analysis and charts. DSEIS 4.1.2.2 Alternative B (Proposed Action), at 4-6.

PA-18 BI-1-46
 “The areas of initial surface disturbance have not been adjusted for reclamation efforts because it is impossible to predict when and where reclamation would occur over the landscape by the end of 2006. Likewise, there have been no attempts to model how reclamation would offset initial wellfield surface disturbance in the future for each of the alternatives analyzed, below.” It is not impossible to predict when and where reclamation would occur over the landscape by the end of 2006 or other years. In fact, in Chapter 2, disturbance tables for all Alternatives include reclamation projections. These reclamation projections are readily available. Without these data being entered into the model, the initial well field surface disturbance is inaccurate. These statements should be rewritten based on figures provided by the Proponents and as projected in Chapter 2. BLM should also use this data in the models (Chapter 4 4.1.2 Spatial Analysis of Future Surface Disturbance 4-4, 4-6, 4-12 throughout the rest of Chapter 4 and Appendix F).

PA-19 BI-1-47
 PA-20
 The maps concerning the spatial analyses of future disturbance in Section 4.1.2 of the DSEIS are inaccurate and do not illustrate the actual nature or extent of surface disturbance. As a result, they do not provide the public with an adequate visual image of the relationship between spatial disturbances and potential impacts but instead overstate the extent of such impacts. *See* DSEIS maps 4.1-1 – 4.1-6, at 4-5 – 4-11. An accurate depiction of future surface disturbance necessarily must reflect the anticipated timing of future-disturbance activities in light of restoration obligations (reclamation and temporary surface disturbance measures) which are an essential element of the Proposed Action. Furthermore, rather than depicting the general areas within which isolated surface disturbance and development activities will occur, BLM should use illustrations that show the actual pattern and footprint of surface-disturbing activities, contrasted with the areas which will be left undisturbed so that the public can accurately assess the nature and extent of surface disturbances. In the FSEIS, BLM should provide maps that properly reflect the spatial density of all existing wellfield disturbances and that illustrate the likely future temporal and spatial density of anticipated wellfield disturbances as the maps provided in the DSEIS do not adequately reflect surface disturbance and show affected areas to be much larger than what will actually be disturbed. *See* p. 17 in Proponents’ included Appendix A.

Comments by Topic

Development:

Throughout the DSEIS, the word “drilling” is used to explain year-round activity (e.g. winter drilling, year-round drilling, etc.). The Proponents have requested year-round development in specified areas which includes simultaneous operations such as drilling, completions, construction, etc. The Preferred Alternative in the FSEIS and ROD with Proponents’ recommended changes should use “year-round development” as defined above instead of “year-round drilling” or “year-round drilling and completions,” or “drilling”.

Wildlife and Habitat:

Although revegetation mitigation measures would likely also apply to mitigate damage to grazing resources, the mitigation measures listed in DSEIS Appendices A, C §§ 1-4, and E are not specific in dealing with protection of grazing resources. Further, the FSEIS needs to explain how, and to what extent, minimization or mitigation measures (here and more generally) will reduce otherwise-expected impacts.

The DSEIS is inconsistent in identifying and discussing development-related wildlife impacts other than those attributable to habitat destruction/degradation and, to a lesser degree, transportation activity. For example, there is little discussion of “secondary” indirect impacts of development such as poaching, hunting, domestic pets, etc. Nor does the draft discuss such impacts as vehicle-related injury or death of bald eagles or other raptors feeding on roadkill, which usually is a concern to USFWS at least. Although these impacts are expected to be minimal, they should be identified.

The cumulative impact area must be defined for each species, and summer ranges for mule deer and other big game animals should be included. Impacts of other projects occurring in both summer and winter ranges should be considered in the cumulative impact analysis.

Wildlife-protective minimization and mitigation measures need to be addressed explicitly, and the FSEIS needs to explain how, and to what extent, such minimization or mitigation measures will reduce otherwise-expected impacts.

Socioeconomics:

The scoping concerns include boom / bust development and the impacts of continued seasonal stipulations (that lead to fluctuations in employment and attendant disruptions). The negative impacts of continued seasonal stipulations on employment, small businesses, schools, etc., however, are not addressed in the socioeconomics analysis. Chapter 4.3 should include discussion of the many socioeconomic benefits to employment, small businesses, schools and families that can be realized by the lifting of seasonal restrictions and allowing year-round development.

The analysis includes unsupported assumptions and conjecture that should be either removed from the text or supported and documented.

Transportation:

The scoping concerns include the need to evaluate busing to reduce traffic and increased safety risks with winter development and increased winter traffic. The DSEIS does not mention the PAPA July 2000 Transportation Plan or the Proponents' proposed Transportation Plan attached as Appendix C to the DSEIS, which would supplement the 2000 PAPA ROD Transportation Plan. Chapter 4.4 needs to be revised in the FSEIS to present a more balanced picture of the traffic planning done annually in the Technical Support Document and the mitigation built into the Proponents' Transportation Plan in Appendix C, which will supplement the original Transportation Plan.

Cultural Resources:

The DSEIS does not indicate whether BLM intends to conduct a Class III inventory, which is the most thorough inventory, or a lesser inventory. This is addressed through the Wyoming Protocol Agreement in Appendix G of the DSEIS. In Section 4.8 of the DSEIS, BLM should clarify the level of inventory it plans to conduct on the PAPA. It is considered appropriate to inventory only those areas that will be disturbed, and, therefore, BLM should clarify the scope of the area that it intends to inventory. Finally, BLM does not indicate whether an inventory will be needed for all of the Alternatives or whether an inventory will be needed only for Alternatives B and C.

Paleontological Resources:

The DSEIS notes on page 4-81 that "discovery of fossils during construction would result in the suspension of construction activities to prevent further disturbance and/or damage to fossils." The Wyoming Protocol does not apply to paleontological resources. BLM should propose mitigation measures designed to protect paleontological resources and should have a system in place to deal with inadvertent discoveries. Such specific mitigation measures should be included in the FSEIS.

Air Quality:

No mention is made of Ultra's \$2.86 million investment to offset emissions at the Naughton plant in this area of air-related mitigation. It is mentioned later in the document in a scoping question, but that question is ignored in the air section of the DSEIS. This effort should be referenced in the air section of the FSEIS and ROD.

The Proponents support reducing drill rig engine NOx emission by 80% from 2005 levels. Modeling of this scenario predicts no exceedance of Prevention of Significant Deterioration (PSD) increment, so there is no reason for additional mitigation to address PSD increment consumption. This leaves only visibility in Class I Areas as a possible air quality concern. As further discussed below, visibility in Class I Areas is an environmental impact that is properly evaluated in the DSEIS. The recently completed ozone modeling analysis predicts no violation of the ozone NAAQS despite the fact that the emissions used in the modeling are far greater than the emissions from any of the action Alternatives in the DSEIS and is also greater than the combined emissions from the action alternatives in the DSEIS and RFD. BLM correctly identified in the ozone modeling analysis that the Western Regional Air Partnership (WRAP) Oil and Gas 2018 inventory that was used in the ozone impact model overestimated the emissions from PAPA and other

projects in the area. The WRAP inventory used conservative factors and limit control mechanisms that are either currently now used in PAPA or planned to be used. See pp. H-4 - H-5. and Table 2.1. Even with the overestimate for the emission inventory, no exceedance of the regulatory limit was modeled. However, Proponents are concerned about the additional provisions in the DSEIS that appear to characterize zero days of modeled visibility impairment in Class I areas greater than 1.0 deciview (dv) as a mandatory regulatory standard that must be achieved using, if necessary, “any and all available means.” DSEIS, at 4-74 – 4-75. These provisions misconstrue the nature of the visibility protection requirements under the Clean Air Act and the nature and extent of the BLM’s responsibility and authority regarding visibility in Class I areas. The provisions also fail to recognize the limitations on the capacity of modeling to accurately describe and predict visibility impairment.

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BI-159

Protection of visibility in Class I areas is an important factor that must be fully discussed in the FSEIS. Further, BLM has an important interest in the protection of visibility in Class I Areas. However, the 1.0 dv level is not a regulatory standard. It is only one criterion in a guideline used by Federal Land Managers (FLMs) to evaluate visibility impacts. WDEQ has the primary authority regarding visibility protection under the Clean Air Act. For purposes of NEPA and a ROD, the BLM should consider the FLM guideline to balance visibility considerations with the Proponents’ rights to develop the PAPA under their leases and the public’s need for affordable sources of clean energy. Once oil and gas leases have been issued, BLM may not later impose mitigation measures on development operations that unreasonably condition or take away the right to develop the leases. *Conner v. Burford*, 848 F.2d 1441, 1449-50 (9th Cir. 1988) (“on land leased without a No Surface Occupancy Stipulation the Department *cannot* deny the permit to drill; it can only impose ‘reasonable’ conditions which are designed to mitigate the environmental impacts of the drilling operations.”). NEPA, while it requires thoughtful consideration of environmental impacts and alternatives, does not compel substantive outcomes. *Robertson*, 490 U.S. at 350 (“it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.”).

The Air Quality Impact Analysis Technical Support Document (TSD) acknowledges that 1.0 dv is not a binding requirement: “[t]he BLM considers a 1.0 dv change as a perceptible significant threshold; *however, there are no applicable local, state, tribal, or federal regulatory visibility standards.*” (Emphasis added.) DSEIS TSD, at 51. The DSEIS also acknowledges that “WDEQ has the regulatory authority for air quality in Wyoming.” DSEIS, at 4-62.

The 1.0 deciview threshold is derived from the Federal Land Managers’ Air Quality Related Values Work Group (FLAG), Phase I Report (2000). Its purpose was to set out a more consistent approach for FLMs to use in assessing visibility impacts. FLAG, at iii. It is not a regulation and does not have the force of law. It includes “guidelines” and “does not provide a universal formula that would, in all situations, allow one to determine whether a source of air pollution does, or would, cause or contribute to an adverse impact.” *Id.* “It is important to emphasize that the FLAG report is only a guidance document that explains factors and information the FLMs expect to use when carrying out their consultative role. It is separate from Federal regulatory programs.” *Id.* at 5. FLAG sets forth “decision thresholds” which are “strictly a guideline.” *Id.* at 27. A 10% change in light extinction (equated in the DSEIS with 1.0 deciview) is such a decision threshold. Even if a project is predicted to exceed the 10% threshold, any determinations in that regard must

be made “on a case-by-case basis.” *Id.* Ultimately, visibility determinations are aimed at identifying visibility impairment which interferes with the management, protection or enjoyment of the visitor’s visual experience of Federal Class I areas. Such determinations must be made on a case-by-case basis “taking into account the geographic extent, intensity, duration, frequency, and time of visibility impairment, and how these factors correlate with: (1) times of visitor use of the Federal class I areas, and (2) the frequency and timing of natural conditions that reduce visibility.” *Id.* at 15-16 (quoting 40 C.F.R. §51.301(a)).

The U.S. Supreme Court has made clear that an agency preparing an EIS, while obligated to take a hard look at environmental consequences of a proposed action and discuss mitigation of consequences, is not obligated to formulate a complete mitigation plan and may rely on other agencies, including non-federal agencies, to address environmental effects over which they have authority. *See Robertson*, 490 U.S. at 350-53. “There is a fundamental distinction between . . . a requirement that mitigation be discussed in sufficient detail that environmental consequences have been fairly evaluated, on the one hand, and a substantive requirement that a complete mitigation plan be actually formulated and adopted, on the other.” *Id.* at 352. “In this case, the off-site effect on air quality and on the mule deer herd cannot be mitigated unless non-federal government agencies take appropriate action. Since it is those state and local governmental bodies that have jurisdiction over the area in which the adverse effects need to be addressed and since they have authority to mitigate them, it would be incongruous to conclude the Forest Service has no power to act [to grant a special use permit] until the local agencies have reached a final conclusion on what mitigating measures they consider necessary.” *Id.* at 352-53. What was true in *Robertson* holds true in this case.

Therefore, the FSEIS and ROD need not define a comprehensive plan to protect visibility in Class I areas throughout the life of this project. BLM must adequately discuss visibility impacts and consider mitigation of those impacts. However, it may rely on and collaborate with other agencies with jurisdiction and authority, and it may utilize adaptive management techniques and allow for ongoing collection and analysis of information to inform future actions. Protection of visibility is an ongoing concern under the Regional Haze program, and the WDEQ will be developing a State Implementation Plan (SIP) in 2007, which will implement the requirement of the Regional Haze Rule to make reasonable progress toward achieving improvement of visibility in Class I areas. In the future, air quality modeling methods will evolve, and new visibility monitoring information will be gathered. Evaluation of what future mitigation, if any, may be needed to protect visibility in Class I areas should be informed by all of these factors. Mitigation required by the BLM at this time should allow for the fact that the WDEQ, with EPA oversight, is the agency with direct and ongoing statutory responsibility for protecting visibility in Class I areas.

Sections 169A and 169B of the Clean Air Act establish the Regional Haze program and require states to adopt SIPs to protect visibility in Class I areas. EPA has adopted regulations to implement the Regional Haze program. 40 C.F.R §§51.308-309. Under these regulations, States, including Wyoming, must submit Regional Haze SIPs by December 17, 2007, which include measures designed to achieve reasonable progress toward attaining the national visibility goal to remedy existing and prevent future impairment of visibility in Class I areas. 71 Fed. Reg. 60,612, 60,633 (October 13, 2006). Under the Regional Haze program, States must consult with FLMs and must obtain EPA approval. Primary responsibility and jurisdiction resides with the States and EPA,

with FLMs playing a supporting role. The WDEQ has authority under the Regional Haze Rule, to regulate emissions of sources outside the PAPA that contribute to visibility impairment, and thus is better positioned than is BLM to address visibility concerns.

Proponents do not argue that the FLAG guideline should be ignored, that visibility impacts in Class I areas are not important, or that mitigation of such impacts should not be taken seriously. The Proponents are prepared to invest tens of millions of dollars within a few years to substantially reduce their emissions, thereby avoiding modeled exceedances of PSD increments and greatly reducing modeled visibility impacts. The 80% drilling rig engine NO_x emission reduction scenario is a concrete objective that the Proponents can assess based on available emission control techniques. However, the Proponents are concerned that the further requirement to achieve zero days of visibility impact above 1.0 dv in Class I areas, no matter what, using any and all available means, would prematurely mandate an outcome that is more stringent than required by law when it remains uncertain whether there are reasonable technical and economic means to achieve that outcome. Such a mandate is particularly questionable in light of uncertainties associated with visibility modeling.

Modeling of the 80% emission reduction scenario was performed by the BLM using five different methods. Three methods used FLAG and IMPROVE (Interagency Monitoring of Protected Visual Environments) background data. Two methods followed recent CALPUFF modeling guidance for Best Available Retrofit Technology (BART) analyses under the Regional Haze program. *See* DSEIS TSD, at 48. The latter uses the 98th percentile of modeled values to assess visibility impacts rather than using the maximum predicted impacts. DSEIS TSD, at 51-52. As stated in EPA's Guidelines for BART Determinations, "we believe it is appropriate to use the 98th percentile—a more robust approach that does not give undue weight to the extreme tail of the distribution." 70 Fed Reg. 39104, 399121 (July 6, 2005). The results from the various methods diverge greatly. Although BLM favors the method that predicts visibility impacts greater than 1.0 dv on 10 days, with a maximum daily impact of 2.62 dv, modeling with the BART methodology predicts impacts greater than 1.0 dv on only 3 days, with a daily maximum 98th percentile value of 1.16 dv. The DSEIS gives no explanation why the BLM's favored method should be viewed as more accurate than the BART method. The DSEIS also does not discuss all factors listed in the FLAG guideline—geographic extent, intensity, duration, frequency, time of visibility impairment and visitor use, or natural conditions that reduce visibility. As noted above, the visibility monitoring data reported in the DSEIS indicates that between 1999 and 2003, a time of rapidly growing oil and gas development in the PAPA and surrounding areas, visibility was not degraded in Class I areas. These factors call into question whether, in fact, once the 80% rig engine NO_x emission reductions are in place, PAPA activities will impair visibility in Class I areas.

The Proponents have performed preliminary modeling to determine how the results would be affected by altering modeled assumptions about background levels of ammonia. When modeled background ammonia levels are adjusted to conform more closely to actual background levels, visibility impacts are predicted to be significantly less than impacts reported in the DSEIS. Modeling predictions should be understood as an imperfect tool to be used in conjunction with other tools such as monitoring for purposes of visibility protection.

BLM should defer to WDEQ, which will develop and implement its Regional Haze SIP and determine what, if any, further emission control requirements might be needed in the PAPA in order to demonstrate reasonable progress toward the national visibility goal, in accordance with the Clean Air Act. This approach is consistent with the Clean Air Act and accords visibility protection in Class I areas appropriately high importance. At the same time, this approach recognizes that there is no legal or regulatory requirement to achieve zero days over 1.0 dv in Class I areas and that WDEQ has primary responsibility to regulate and protect air quality.

Noise:

BLM should clarify in its discussion that noise impacts will be mitigated by the Proposed Action to concentrate drilling in core areas, leaving the surrounding habitat undisturbed by noise impacts. BLM should also acknowledge additional mitigation measures currently employed by the Proponents to protect sage grouse leks from noise disturbances, including flareless completions and use of hospital grade mufflers on drilling rigs. Finally, the FSEIS and ROD should include a clear statement of the mitigation measures BLM may use to maintain or further reduce noise generated by oil and gas activity.

Cumulative Impacts:

An EIS must include a cumulative impact discussion for each environmental resource. 40 C.F.R. § 1508.25(c). The CEQ Regulations define a cumulative impact “as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. *Id.* § 1508.7.

The cumulative impact discussion presented in the DSEIS needs further refinement. As an initial matter, BLM should explain the rationale for its delineation of the cumulative impact areas chosen for each resource. For some resources, it may be necessary to expand the impact area unless BLM can provide a reason for limiting the scope of analysis to the PAPA. For example, in light of BLM’s identification of potential surface water impacts downstream of the PAPA BLM should explain why the DSEIS limits the cumulative impact area to the PAPA. Further, the impact area for migratory wildlife may require expansion to include summer range for the species. For those resources where expansion of the cumulative impact is not necessary, BLM should clearly explain why the resource area is limited to the PAPA. BLM should also prepare a list of projects with potential to cause cumulative impacts for each resource, or at least reference such a list.

Additional detail should be included in the impact analyses. Most discussion of cumulative impacts amounts to a general acknowledgement that they may occur. Where quantitative data is available, or BLM has the ability to indicate where and when the most impacts might occur, it should include that information. For example, the discussion of cumulative traffic impacts should include reference for which communities or transportation corridors will be most impacted by the Proposed Action along with other projects. This degree of detail will assist the agency in determining how impacts can best be mitigated.

IV. Conclusion

Although the DSEIS provides a well-reasoned and thorough analysis of the environmental impacts of natural gas development on the PAPA and complies with the requirements of NEPA, the Proponents ask that BLM consider implementing the suggestions raised in this comment letter and the included Appendices when preparing the FSEIS and ROD. The Proponents thank BLM and appreciate the opportunity to submit these comments.

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Respectfully submitted,



W. R. Picquet
Vice President - Operations
Ultra Resources, Inc.



JR Justus
Manager - US Onshore Assets
Shell Exploration & Production Co.



J. P. Matheny
Vice President
Questar Market Resources

**APPENDIX A
ERRATA**

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
Exec Summary	Subheading Title	p. iii	<i>"LIMITS BY THE PAPA ROD"</i>	There is an inconsistency in that sometimes they are referred to as "limits" and elsewhere they are called "components."	Re-title the subheading to mirror the subheading title in the 2000 PAPA ROD (p.5) PAPA ROD "Project Components."
Exec Summary	Limits by the PAPA ROD	p. iv	<i>"It was not the intent of the PAPA ROD to limit wells but rather to limit well pads..." P.5 of ROD.</i>	The issue of wells versus pads is clarified here and should be expanded through the rest of the DSEIS for better public understanding.	Clarify and reinforce wording on intent of PAPA ROD language regarding limiting pads versus limiting wells. It should also be clarified that the PAPA ROD well pad numbers were not an absolute limit but rather an "analytical" upper limit beyond which additional analysis would be required. (PAPA EIS pg. 2-6)
Exec Summary	Existing Development	p. iv	References that there were <i>"twenty-three rigs ... operating in Dec 2005"</i> without commenting that activity does occur under existing development during the winter.	It should be explained that winter development is occurring on state lands, federal lands and private lands outside of the winter stipulations areas and with production repairs and maintenance activities are not restricted	The FSEIS should rectify the misconception that no winter activity occurs except for recent exceptions. FSEIS should also make clear that access for production, repairs, routine maintenance, emergency conditions are not restricted.
				In addition, PAPA ROD, p. A-53 addresses another misconception regarding the notion that "crucial winter ranges are off limits to any activity."	Explain under what circumstances BLM, in consultation w/ Game and Fish, can and will grant exceptions.
			The statement regarding NOx levels for compression is not correct.	472 tons is an estimated number based on estimated emission factors and used in permit conditions (see Table F.1.28 in TSD), which are known to exceed actual, tested emissions.	Correct and clarify by using the following language: "Total estimated NOx emissions may exceed the analysis threshold."

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 G-7 BI-1-68
 G-8 BI-1-69
 G-9
 AQ-14 BI-1-70

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
Exec Summary	Environmental Impacts: Transportation	p. vi	<i>"Each alternative would require construction of additional roads to support increased wellfield traffic. Traffic Levels would increase during winter with year-round drilling. Increased traffic would increase road maintenance costs and could lead to increased vehicular accident rates."</i>	This statement does not acknowledge the fact that the Liquid Gathering System (LGS) and Computer Assisted Operations (CAO) will decrease traffic substantially. NOTE: This is referenced in Alternative C on page 4-140: <i>"Most producing wells would be connected to a liquids gathering system in DA-3 within 2 years of issuance of the ROD, further reducing winter traffic."</i>	The FSEIS should state that the LGS and CAO in the Proposed Action will decrease traffic in the PAPA.
Exec Summary	Environmental Impacts: Air Quality	p. vi	<i>"impacts... are anticipated..."</i>	This statement is not entirely accurate.	The text should be clarified by using the language: "...air quality models predict 'just barely noticeable' visibility impacts."
Exec Summary	Environmental Impacts: Paleontological Resources	p. vii	There is no mention of the potentially beneficial discovery of fossils.		The FSEIS should acknowledge the possibility of fossil discovery (as was done for cultural resources) and that the discovery of fossils will benefit the public by adding to our knowledge base of archaeology.
Exec Summary	Environmental Impacts: Vegetation Resources	p. vii	<i>"Unsuccessful revegetation with increased presence of noxious weeds (Canada Thistle, perennial pepperweed) is expected on unclaimed bare ground."</i>	This presupposes that the reclamation will not be successful.	The last sentence, which is subjective, should be deleted or modified to more accurately portray the concern regarding the potential for increased presence of noxious weeds.

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Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
Exec Summary	Environmental Impacts: Wildlife and Aquatic Resources	p. viii	<i>“Decreased raptor nesting habitat effectiveness is likely within 1 mile of New Fork River riparian zone. Decreased reproductive success in spring-spawning native salmonid species is possible from increased sedimentation in aquatic habitats and loss of forest-dominated riparian and shrub vegetation by each alternative.”</i>	The Proponents have voluntarily subscribed to Bald Eagle and raptor Best Management Practices (BMPs) for the New Fork River riparian area in Alternative B. These practices were developed in concert with USFWS and will minimize disturbance to raptors. In addition, oil and gas development in the riparian area is virtually non-existent and therefore, there should be no loss of fishery habitat due to sedimentation. Also there is no forest dominated habitat type NOTE: See 3.7.1.1 Land Use/Land Cover page 3-32.	Incorporate by reference the voluntary BMPs for Bald Eagles and Raptors and mention that these practices were established to minimize disturbance to eagles and raptors. These BMPs are not mentioned as being part of Alternative C, which should be clarified. It should also be mentioned that the BMPs are not part of the No Action Alternative.
Chapter 1	1.1	p. 1-4 first paragraph	“Analysis thresholds associated with air quality....”	There was only one air-related threshold, for NOx, not thresholds.	Correct in the FSEIS by substituting “threshold” for “thresholds.”
Chapter 1	1.3 PAPA EIS and ROD	p. 1-6, First full sentence on page	<i>“The air quality impact assessment for the PAPA EIS assumed that there would be 700 producing wells in the PAPA.”</i>	Contradicts statement in PAPA ROD p. 43: “The cumulative impact analysis contained in this EIS, which assumed the implementation of over 8,450 wells and associated compression....”	Use the figure 8,450 wells in the FSEIS.
Ch. 1	1.6	p. 1-8	Two gas sales pipelines are proposed....	Three lines are proposed: TEPPCO 36”, R6 and R7.	Confirm and clarify in FSEIS that three gas sales pipelines are proposed in the same corridor.
Ch. 1	1.7 Purpose and Need	p. 1-9	<i>“allow the operators to develop an <u>additional</u> 20 – 25 TCF.”</i>	20 – 25 TCF is the total that includes what is developed to date and what will be recovered in the	This should be corrected in the FSEIS with the following language: “The Proponents

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
				future based on Proponents' current understanding of the resource.	proposed to fully develop the 20-25 TCF estimated recoverable reserves as efficiently as possible while reducing impacts where possible."
Chapter 2		pp. 2-8 vs. 2-4		Inconsistency on mileage numbers in cross reference – the text vs. tables (Table 2.3.4).	Confirm and correct for FSEIS.
Chapter 2	2.3.3 Drilling Rigs	p. 2-11, 2nd paragraph under section	This section lacks the clarity needed to convey an accurate message of what activities will be allowed on crucial winter ranges.	PAPA ROD, p A-53, explained the misconception that the public sometimes had that "crucial winter ranges are off limits to any activity" as being incorrect and explains under what circumstances BLM, in consultation w/ Game and Fish, can and will grant exceptions.	<p>Rewrite to acknowledge PAPA ROD allowed BLM winter development and insert explanation that explains under what circumstances BLM, in consultation w/ Game and Fish can and will grant exceptions.</p> <p>It should also be explained that winter development is occurring on state lands, federal lands and private lands outside of the winter stipulations areas and that production, operations, maintenance, repairs and emergency activities within crucial winter range are not restricted.</p>

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Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
Chapter 2	2.4.2.1 Components Common to All Alternatives: Transportation Requirements	p. 2-13	<i>“summer traffic would be much greater in summer than in winter, due to traffic required for construction of roads, pads and pipelines.”</i>	<p>The text does not point out the substantial (41%) reduction in traffic in summer under Alt B and Alt C as compared to Alt A. Text also only alludes to traffic differences as a result of LGS and the significant decrease in road, pad and pipeline construction needed as a result of using multiple well pads and the associated reduction in traffic numbers (approximately 1.6 miles or 12 acres of roadway and flowline easement per section).</p> <p>This section does not differentiate between alternatives regarding traffic and season of use.</p>	Given the substantial difference in traffic loading among the Alternatives, this portion should not be considered as a common component and should be addressed separately under each Alternative. The statement that “summer traffic would be much greater in summer than winter” is confusing.

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Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
Chapter 2	2.4.2.1 Components Common to All Alternatives	pp. 2-14, 2-16 Gas Sales Pipelines Table 2.4-3	Includes construction of 30” gas pipeline (R6) within Bird Canyon Corridor and Blacks Fork Granger Corridor.	R7 is not discussed.	Confirm and clarify in the FSEIS that the text and table include second 30” gas pipeline (R7) in same corridor.
Chapter 2	2.4.2.1 Components Common to All Alternatives: Pipeline Corridors	p. 2-16	<i>“The entire permanent right-of-way and the construction right-of-way would be revegetated.”</i>	This is a good statement, which is accurate.	This statement should be included throughout the FSEIS in the analysis of Alts B and C for consistency and accuracy purposes.
Ch. 2	Table 2.4-3	p. 2-16		There is some inaccurate wording in this table.	R6 temporary extra work areas are listed as 168 miles when it should read 168 sites. The table should be adjusted by adding the R7.
Chapter 2	2.4.2.1 Components Common to All Alternatives	p. 2-17 Compressor Stations Table 2.4-4 Table 2.4.5 Table 2.4.8 Table 2.4.9 Table 2.4.11 Table 2.4.12		Additional compression and LOP disturbance at Gobbler Knob is incorrect.	The FSEIS should confirm and clarify whether this includes the additional 40 acres of disturbance for Pinedale/Gobblers Knob (20 acres in 2009 and 20 acres by 2014) and the total 65,000 hp.
Ch. 2	Paragraph 3	p. 2-17			For accuracy in the FSEIS should state there will be two 7.5 mile 30”-42”pipelines from Stewart Point to the four-way area both located in the same right of way.
Chapter 2	2.4.2.2 Alternative A (No Action Alternative)	p. 2-20	LOP is 2011 for Alt A and Table 2.4-5 heading of LOP	Using “life of project” for Alt A is not accurate because Alt A does not acknowledge “reasonably foreseeable development” such as how much mineral is available to be recovered (20-25 TCF on p.1-9 DSEIS.	Confirm and clarify in FSEIS that Alt A to 2011 is not LOP, and provide amount of minerals expected to be recovered by 2011. FSEIS Alt A should acknowledge that additional environmental

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
			HP per rig (mentions PAPA DEIS assumption of 1,000 HP per rig then later refers to analysis using 3,875 HP per rig).		analysis would take place to address continued development to recover full mineral resource. Need to be consistent in use of defined terminology LOP defined in definitions.
				This stated assumption should be included for emissions discussions as well. The analysis for the No Action plan assumed 3875 HP for each rig.	These figures should be reviewed and if in error should be corrected in the FSEIS.
			Table 2.4-5; suggests that Alt A has only 245 pads	245 pads represents only new pads and does not include existing pads. Alt A should be consistent with other alternatives and include all pads.	Clarify in FSEIS.
	Table 2.4-5 (See also Table 2.4-13)	pp. 2-21, column 2, row 6; 2-38, column 2, row 12	The estimate of 6.0 miles for QGM liquid gathering pipelines is incorrect.	This figure is actually 226 miles.	Confirm and correct in the FSEIS using the 226 mile figure.
				The following components are common to all alternatives and should be moved from the discussion of separate alternatives to Section 2.4.2.1 Components Common to All Alternatives: Liquid gathering pipelines – QGM 30-inch Mesa Loop Lines 10-inch water line 12-inch gas pipelines Compressor sites (expansion) Central Gathering Facilities (6 sites) Water trucking facility Falcon truck unloading Expand stabilizer site.	Confirm and correct in the FSEIS by moving those components common to all alternatives to Section 2.4.2.1.
				Table 2.4-5 has some inaccuracies in it that needs to be corrected	Confirm and correct in FSEIS.

PA-28
AQ-18
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				when the data is transferred to Section 2.4.2.1. These are: <ul style="list-style-type: none"> • Liquid gathering pipelines – QGM 6.0 miles is incorrect – change to 226 miles • 30-inch Mesa Loop Lines 15.3 miles is incorrect – change to 30.6 miles • 12-inch gas pipelines change to “liquid” pipelines • Footnote 5 change to two 30-inch gas pipelines from Stewart Point area (7.5 miles each) • Footnote 7 change to match footnote 7 on Table 2.4-8 	
Chapter 2	2.4.2.2 Alternative A (No Action Alternative)	pp. 2-21 vs. 2-22	There are contradictions in Table 2.4-5 and Table 2.4-7 regarding number of pads in the No Action Alternative.		This needs to be confirmed and clarified in the FSEIS.
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)		<i>“Reclamation of well pads would be similar to current reclamation practices.”</i>	There is no discussion in this section that many pads are left open (not reclaimed) longer to allow rigs to be moved there in the event sage grouse may be found 2 weeks before drilling on another pad. In some cases, pads could remain open up to 8 – 10 years, which will be beyond the 2011 LOP for the Alt A as currently written.	Confirm and clarify in the FSEIS that 1,023.6 estimated disturbed acres by the year 2011 is accurate.
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)		<i>“It is estimated that rigs would move to a new pad on average of once per year.”</i>	The text states that the Proponents will typically complete development of a pad within a year and that most rigs will average at least one move per year. It will be unlikely that 16 well pads will be fully developed in a year and, further, that many of the pads will	Revise and clarify for FSEIS by noting that for this statement to be correct more than one rig must be used on a pad to accelerate the development. Also, to clarify for readers, insert “development” before rigs.

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				have more than 16 wells under a 5-acre spacing scenario.	
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-24	Map 2.4-3.	This map shows the entire area the CDAs occupied over 5 years, rather than annual movement of CDAs. A more accurate map would have allowed for comparison w/ maps on Alt C. pp. 2-34, 2-35	Revise map to more accurately depict annual movement of CDAs rather than a five year total or delete.
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-25	Paragraph 2 on delineation states that there is a 5-year limit on delineation drilling.	This is not accurate as the Proponents' Proposed Action stated that proponents <u>estimated</u> that 5 years would be required to fully delineate the resource as we currently understand it.	Revise and correct in FSEIS by using language indicating that the 5-year period for delineation is an estimate and not a limit.
			Regarding delineation paragraph 2 states <i>"this would require an exception from BLM for temporary relaxation of seasonal stipulations."</i>	This statement needs clarification in order to more accurately portray Proponents' Proposed Action as it relates to delineation activities. In addition the current description of delineation implies that all delineation will occur in the CDAs.	Reword to more accurately describe that the proposal is that delineation would occur both inside and outside the CDAs and would comply with existing wildlife stipulations; however, there may be times where it may be necessary to request relief from seasonal wildlife stipulations.
Chapter 2	2.4.2.3	pp. 2-26, 2-29	As currently written there is a contradiction regarding total CGFs between the table and the text.	Confirm total number of CGFs for all operators. Table 2.4.8 (2-26) shows 15, whereas the text refers to 9 CGFs (2-29).	Change text in the FSEIS to include 15 USQ CGFs and LOP disturbance to 102 acres.
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-27	4399 total wells.	The statements on number of wells are not accurately stated - 4399 <u>total</u> wells. It should be 4399 <u>additional</u> wells on page 2-27.	Revise in the FSEIS by changing the word "total" with the word "additional."
			"number of proposed wells is an estimate based on estimated proposed rigs and current drilling."		This should be revised in the FSEIS to read: "proposed rigs and current drilling <i>rates</i> ."

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Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-27	There appears to be a discrepancy between Table 2.4-9, which is LOP disturbance for the Proposed Action, and Table 2.4-5, which is LOP disturbance for the No Action Alternative.	Table 2.4-9(Alt B) shows 250 pads with 8112 acres of disturbance while Table 2.4-5 (Alt A) shows disturbance of 2559 acres for 245 pads. The number of disturbed acres for essentially the same number of pads should be the same.	Accurately portray disturbance numbers in the FSEIS
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-28	Table 2.4-10.	This table should have an additional column for "Pads," which would add perspective for the plan components.	For clarity and proper perspective add "Pads" column to table in the FSEIS.
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-28	<i>"Liquids gathering system would connect to the pipeline that delivers...."</i>	The Proponents' Proposed Action was very clear relative to the LGS being connected to the pipeline that delivers crude petroleum to the processing facilities. It is the Proponents' intent to do this if suitable commercial terms can be reached.	The FSEIS should clarify this by adding the following sentence to the text – "It is planned that condensate gathering pipe be connected... if suitable commercial terms between the producers and pipeline can be reached."
			States QGM is proposing additional 15,500 hp at Pinedale/Gobblers Knob in 2015.	This is inaccurate.	This should be revised in the FSEIS by using the correct figures of an additional 40,000 hp in 2009 and additional 25,000 hp by 2014.
			Compression number is wrong.		The correct number, which should be used in the FSEIS, is 65,000 hp.
Chapter 2	2.4.2.3 Alternative B (The Proposed Action)	p. 2-29	Discussion on trunk pipelines. <i>"Total estimated initial disturbance for these pipelines is 203.0 acres."</i> Alt A has language about the initial disturbance being revegetated.	This doesn't reflect that these right-of-ways would be revegetated.	This can be corrected in the FSEIS by adding the following sentence: "The entire permanent right-of-way and the construction right-of-way would be revegetated."
Chapter 2	2.4.2.4 Alternative C	pp. 2-31-32, Map 2.4-4, 2.4-5	Shows RMG identified areas of Very High, High, Moderate and Low O&G	RMG identified areas are based on 2003 data and don't reflect recent drilling.	Confirm and correct in FSEIS using the results from recent drilling.

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			potential and new core.		
Chapter 2	Table 2.4-11	p. 2-37	Table 2.4-11 uses the word “wells” instead of “pads,”	This should be 179 pads and not wells.	Correct in FSEIS by changing “wells” to “pads.”
Ch. 3	3.5.1	pp. 3-9	PAPA production is 5.96% of WY gas production and third largest field in WY.	It is the third largest field in the country, not just Wyoming unless BLM is only considering current production. If that’s the case, BLM should mention what this field will be at full production and its reserve comparison to the rest of the state fields.	Confirm and clarify in the FSEIS.
Chapter 3	3.6.1.1 Traffic Volume	p. 3-29	<i>“Average daily traffic to well pads with liquid gathering pipelines is half the traffic to pads without.”</i>	The LGS should be considered, based on this tracking, as mitigation – not as a disturbance as it is in most of the document.	In the FSEIS language should be used where appropriate to include LGS as mitigation for Alt B and C.
Ch. 3	3.6.2	p. 3-31	Pipeline Corridors...		The FSEIS needs to add a R7 project that would be similar to the R6 pipeline and Condensate Loop.
Chapter 3	3.8.1.1 Recreational Activities	p. 3-40	<i>“The U.S. Fish and Wildlife Service (FWS) collects state-level data on fishing, hunting, and wildlife-viewing every 5 years. The most recent surveys, in 1996 and 2001, were used to estimate the rate of change in recreation demand for Wyoming (Table 3.8-3). Hunting and wildlife viewing decreased while fishing increased.”</i>	The decrease in hunting as shown by the USFWS 5-year surveys is a national trend based on aging population (no analysis of population age and trends in DSEIS in the 3 county area considered) of hunters and non-recruitment of new hunters and is not peculiar to Wyoming or Sublette County.	Confirm and clarify FSEIS to more accurately portray the possible reasons for the changes in these figures.
Chapter 3	Map 3.10-1 Lander Trail	p. 3-51	Map shows 3 mile Lander Trail buffer extending beyond Hwy 351 to the south of the trail.	Text on page 3-52 indicates that the buffer extends to Hwy 351 as it is in the PAPA ROD.	The map should be corrected in the FSEIS by eliminating the shading south of highway 351.

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Chapter 3	3.11.1 Air Quality Monitoring	p. 3-54	There are inaccuracies in the text.	1) Daniel monitoring site is southwest of Pinedale, not northwest. 2) Boulder site has been in operation since Jan. 2005, not Sept. 2004.	Confirm and clarify in the FSEIS.
				Fails to recognize all sites that are monitoring pollutants nearby (although as addressed later in the text, some are making indirect measurements). Focuses only on Jonah, Boulder and Daniel monitoring stations but not on those shown on Map 3.11.1. Should describe the long history, including since Pinedale/Jonah have been developing of no impact or declining concentrations of pollutants. Correctly describe location of Boulder Station.	Clarify long history of no impact or declining concentrations of pollutants. Text should fully develop what sites are in operation, how long, what they are saying, etc. (Much of this is included in the May 2006 report by the PAWG's AQTG).
Chapter 3	Figures 3.11-1, 3.11-2	pp. 3-58, 3-59	Regional visibility graphs indicate a generally improving trend at Bridger.		This significant trend should be noted in the FSEIS because it has occurred during the time when Jonah and the Anticline have been developing. The trend should be identified in the Chapter 4 air quality impact analysis, particularly under the No Action Alternative.
Chapter 3	3.11.1 Air Quality Monitoring: Discussion on Deposition	p. 3-60	<i>"The USFS has indicated that the current green line values are set too high and do not adequately protect ecosystems from N and S deposition."</i> Svalberg personal communication with Edge Env.	Total sulfur deposition is within the current thresholds used by BLM.	This statement does not belong in a technical document and should be deleted from the FSEIS.
Ch. 3	3.11.2	p. 3-63, paragraph 1	2005 AQ analysis used "actual emissions estimates."	It is either actual or it is an estimate, but by definition it can't be an actual estimate	State in the FSEIS whether this is actual emissions or estimated emissions.

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			Mid page: Need to emphasize predicted vs. actual		Text should be revised in FSEIS to read: "Predicted changes in regional haze...were estimated using CALPUFF..." "Predicted visibility impacts were compared..." The same revision should be applied to the next paragraph on nitrogen and sulfur deposition.
			Table 3.11-5 has incorrect labels.	First column heading should be "Air Quality Measure," and the topics should be as listed but with the word "Increased" dropped in all cases.	Confirm and correct in FSEIS.
Chapter 3	3.12 Noise	p. 3-65	The discussion on the placement of the noise monitoring equipment on the pad edge versus near the drilling rig, compressor is incomplete.	Shell and Ultra both followed the direction of BLM to monitor noise from the edge of the pad, and drilling operations were the only activity ongoing on these locations.	Confirm and clarify in the FSEIS that this was done at BLM's direction and the rationale for that direction.
Ch. 3	3.15.1.4	p. 3-75, paragraph 1	Water used for dust control is 10,000 to 200,000 bpd.	Bpd volume appears to be a typo.	Confirm and correct in FSEIS.
Ch. 3	3.15.1.4	p. 3-75, paragraph 4	Water supply wells vary in depth 300-1000'.	Earlier in 3.15.1.1, p3-71 said 200'-1000'.	Confirm and correct in FSEIS.
Chapter 3	3.22.1.1 Big Game Pronghorn	pp. 3-105, 1-106, 3-107	<i>"Pronghorn fawn production within the entire herd unit increased during 2004, a likely response to increased precipitation during water year 2003-2004"</i> .	While this is a true statement it is significant to note that even though the fawn production in the entire herd unit dropped in 2005 it is still the second highest fawn production since 2000.	The 2005 fawn production should be put into perspective by noting that it is the second highest fawn production since 2000.

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Chapter 3	3.22.1.1 Big Game Pronghorn	pp..3-105, 1-106, 3-107	Table 3.22-1 <i>“Pronghorn Sublette Herd Unit Population, Productivity, and Harvest”</i> shows that the 2005 post season population estimate is 47,930 pronghorn.	This is a significant number since it represents the highest pronghorn population estimate since before 1999.	In order to give the reader an accurate picture of population trend since 1999 it should be referenced in the narrative that the population estimate for pronghorns in 2005 is the highest since 1998.
Chapter 3	3.22.1.1 Big Game Pronghorn	3-105, 1-106, 3-107	Table 3.22-2 <i>“Pronghorn Northern Sublette Herd Unit Population, Productivity, and Harvest”</i>	Most of the readers will be interested in what is going on with population trends of pronghorn on the PAPA itself. This table represents the portion of the Sublette Herd Unit which contains the PAPA.	Although that fact appears in the narrative it should also be referenced in the table title.
Chapter 3	3.22.1.1 Big Game Pronghorn	pp. 3-105, 1-106, 3-107	Table 3.22-2 <i>“Pronghorn Northern Sublette Herd Unit Population, Productivity, and Harvest”</i> shows that the 2005 post season population estimate is 27,537 pronghorn.	This is a significant number since it represents the highest pronghorn population estimate since before 1999 and because Northern Sublette Herd Unit contains the PAPA.	In order to give the reader an accurate picture of population trend on the PAPA portion of this herd unit since 1999 it should be referenced in the narrative that the population estimate for pronghorns in 2005 is the highest since 1998.

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Chapter 3	3.22.1.1 Big Game Pronghorn	pp. 3-105, 1-106, 3-107	Table 3.22-2 <i>“Pronghorn Northern Sublette Herd Unit Population, Productivity, and Harvest”</i> shows that the pronghorn fawn production in 2005 is the second highest since 1999. It also shows that the 2005 fawn production on Northern Sublette Herd Unit contains the PAPA the PAPA, although smaller is not substantially different than the fawn production in the entire herd unit (0.652 fawns per doe on the northern herd unit vs. 0.688 on the entire herd unit.	These are significant numbers since they represent the second highest pronghorn fawn population estimate since 1999 and because Northern Sublette Herd Unit contains the PAPA.	In order to give the reader an accurate picture of population trend on the PAPA portion of this herd unit since 1999 these figures should be referenced in the narrative.
Chapter 3	3.22.1.1 Big Game Pronghorn	p. 3-108	<i>“Preliminary study results suggest that continual fragmentation of previously undisturbed land is leading to reduced use by pronghorn. Pronghorn appear to abandon habitat in parcels with patch sizes at or about 600 acres (Berger et al., 2006).”</i>	This is a preliminary finding which has neither been substantiated by the Wyoming Game and Fish Department nor subjected to any form of peer review. At this stage of the research study this figure is unverifiable.	This paragraph should be eliminated and any analysis and conclusions based on this figure should also be eliminated.
Chapter 3	3.22.1.1 Mule Deer	p. P 3-111, para. 4	While no decreasing trend in mule deer density was noted in the Pinedale Front Complex control area, the comparison should not be made with the Mesa since, the control area location shifted throughout the duration of the study.		Delete the sentence “No such trend was observed on crucial winter ranges unaffected by natural gas developments that were used as a control in the study (Pinedale Front Complex).”

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Chapter 3	3.22.1.1 Big Game Mule Deer	p. 3-112	<i>"Most of the PAPA (54,242 acres) coincides with mule deer crucial winter range (Table 3.22-5). In the PAPA DEIS (BLM, 1999a), all mule deer crucial winter range defined by Game and Fish and winter/yearlong range defined by BLM were included in the Mule Deer SRMZ."</i>	The crucial mule deer winter range is 54,242 acres, which is 27% of the PAPA. The total acres of all winter range designations in the PAPA are slightly over 48% of the total acres in the PAPA. Thus, 27% and 48% cannot be defined as "most" of the PAPA coinciding with mule deer crucial winter range.	Confirm and correct the FSEIS.
Chapter 3	3.22.2 Pipeline Corridors and Gas Sale Pipelines	p. 3-124	<i>The proposed corridor/pipeline alignments would cross yearlong, winter/yearlong, and winter ranges for mule deer (Fralick, 2005). Approximately 2 miles of elk severe winter relief area would be crossed on the south side of the Green River, within the BFGC and the OPC.</i>	The term "elk severe winter relief area" is confusing. It is not clear how elk winter relief differs from winter range or crucial winter range or feed ground.	Confirm and clarify what elk severe winter relief area is. The FSEIS should also point out that the corridor/pipeline development is temporary surface disturbance.
Chapter 3	3.22.2 Pipeline Corridors and Gas Sales Pipelines	p. 3-124, paragraph 5	<i>"...riparian habitats are not present at the proposed crossing locations" of the Green and Blacks Fork Rivers.</i>	Most, if not all of the Green and Black's Fork Rivers are considered to contain riparian habitat.	Confirm and clarify in the FSEIS.

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Chapter 4	Table 4.3-2	p. 4-19	"...the total economic impact generated by one MMCF of PAPA natural gas from drilling..."	The word "drilling" should actually be "production" so that the phrase reads- "the Total economic impact generated by one MMCF of PAPA natural gas from production..."	Confirm and correct for FSEIS.
		pp. 4-33, 4-37	It is stated that level of traffic related to drilling <u>far exceeds</u> any reduction realized by installation of LGS.	The numbers in tables 4.4-1 and 4.4-2 indicate differently between winter and all seasons.	Confirm and correct in FSEIS by changing the wording to differentiate between winter and all-seasons situations, and BLM should be more accurate as to what the numbers indicate.
Chapter 4	4.4.3.3 Alternative B (Proposed Action)	p. 4-35	The comment that no new pads are built after 2017 is in error, and there are additional incomplete statements in this section.	Pads and roads will continue to be constructed through 2023.	Confirm and correct in FSEIS.
				Second paragraph should say "well drilling, completions and production operations would occur."	Confirm and clarify in FSEIS.
				Last paragraph under "Proposed Action" should also say "well drilling, completions and production operations would occur."	Confirm and clarify in FSEIS.
Chapter 4	4.4.3.4 Alternative C	p. 4-36	There are inconsistencies in wording relative to new road construction.	First paragraph should say 'throughout DA-2' rather than within to make it consistent with DA-4.	Confirm and clarify in FSEIS.
				No new roads in DA-3 is incorrect, as there will be delineation roads.	Confirm and clarify in FSEIS.

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				The statement regarding installation of an LGS to each producing well in DA-3 should be qualified by stating "where feasible."	Confirm and clarify in FSEIS.
Chapter 4	4.6.3.1. Summary of Impacts Common to All Alternatives	p. 4-42	Top of page.	It is incorrect to state that interim and final reclamation is not possible with regard to the Proposed Action.	Confirm and correct for the FSEIS.
		pp. 4-42, 4-142	"with all development completed in specific areas before new areas can be developed."	This implies that all DAs cannot move until all development is completed in current area.	Clarify in FSEIS that DAs will roll forward as development progresses
Chapter 4	4.6.3.1. Summary of Impacts Common to All Alternatives	p. 4-46	<i>"Implementation of the alternatives would continue to change the characteristics of most of the PAPA to a landscape where 'one is constantly aware that extensive development activities are ongoing.'"</i>	Without a citation, this statement is subjective.	Confirm statement with a cite, or delete in FSEIS.
Chapter 4	4.6.3.3	p. 4-47, 4-48	The reference to year-round drilling in Alternatives B and C is incomplete.		Confirm and correct in FSEIS. The statement should be expanded to include drilling, completions, and production.
Chapter 4	4.7.3.1 Summary of Impacts Common to All Alternatives Visual Resources	p. 4-51	<i>"Depending on the success of future revegetation efforts, the PAPA may not appear as an industrialized landscape such as it is in 2006."</i>	Without a citation, this statement is subjective.	Confirm statement with a citation or delete in FSEIS.

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Chapter 4	4.7.3.4 Alternative C	p. 4-52	The statement that there will be no new disturbance in DA-3 under Alternative C until activity is complete in the DA-2 is not accurate. It is not accurate to state that there is more opportunity to reclaim under Alternative C vs. Alternative B	Proponents are allowed to conduct delineation activities in DA-3 under non-restricted dates.	Confirm and correct for FSEIS by referencing delineation activities.
Chapter 4	4.8.3.1	p. 4-54	States in last paragraph that significant impacts will occur within the .25 mile buffer zone adjacent to the Lander Trail for all Alternatives.	This is inaccurate.	Confirm and correct in FSEIS.
Chapter 4	4.8.3.3 Alternative B (Proposed Action Alternative)	pp. 4-57–4-58	Concern stated w/ Alt B that salvage excavations for artifacts cannot take place during winter months when the ground is frozen/snow-covered. Artifacts could be damaged during that period.	Assumption seems to be that construction of pads, roads, pipelines would take place year round. Proponents committed to non-frozen ground conditions (modeled at 183 days) for construction. Chapter 2 traffic discussion explains this. Construction for pads, roads, pipelines take place during non-frozen ground climatic conditions as Proponents' proposed.	Revise for FSEIS
		p. 4-59	The paragraph on Alternative C states that disturbance would exceed 50% in many of the ¼ sections	This figure seems very unlikely.	Verify and correct in FSEIS.
			Under Cumulative Impacts the word "wander" is misspelled.		Correct in FSEIS.
Chapter 4	4.9.3.2 Alt. A, 4.9.3.3 Alt. B, and 4.9.3.4 Alt. C – In-field Impacts Sections	p. 4-67–4-69	It is repeatedly stated that PSD demonstrations are for information purposes only.	The predicted annual NO2 concentrations above applicable PSD Class II increments will likely eventually lead to a legally mandated increment consumption analysis.	In the FSEIS, it should be noted that a formal PSD Increment Consumption analysis is unnecessary for this project and that these types of analyses are performed as required by WDEQ.

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Chapter 4	4.9.3.4	p. 4-69	Reference to “actual” emissions is not accurate.	The emissions are estimates and not actual emissions.	Revise text in FSEIS addressing Phase I and Phase II to read “...Year-2005 estimated emissions...”
Ch. 4	4.9.3.2	p. 4-69	Phase 1 is based on 2005 actual emissions.	This is referred to as actual “estimated” emissions in other sections of the DSEIS.	Confirm and clarify in FSEIS; if the emissions are calculated or not and based on that finding use either “actual” or “estimated.”
Chapter 4	4.10.3.3 & 4.10.3.4	pp. 4-77, 4-78	References in all sections refer to winter drilling only without mentioning completions.	For a more complete understanding of winter development, activities, drilling and completions should also be referenced.	Confirm and correct in FSEIS to read “winter drilling and completions.”
Ch. 4	Next to last paragraph	p. 4-100			Need to add disturbance of R7.
Chapter 4	4.19.13.1 Summary of Impacts Common to All Alternatives Federally Listed Species	pp. 4-113, 4-114	<i>“To address potential conflicts between wellfield developments on private lands and bald eagles, Ultra, Shell, Questar, and JGGC consulted with FWS for conservation approaches to minimize impact to bald eagle habitats along the New Fork River.”</i>	This does not completely describe the approach the Proponents voluntarily took relative to Bald Eagles. More than just a consultation with USFWS, the Proponents actually agreed to a set of Best Management Practices (BMPs) for Bald Eagles and Raptors. This multi-faceted list of BMPs actually mirrors to a great extent the draft BMPs, which accompanied the petition by USFWS to down-grade the eagle from threatened status. In addition the BMPs listed in this section represent only a partial list.	Confirm and clarify in FSEIS to better explain the approach the Proponents took with the USFWS on eagles, and include the entire list of measures the Proponents agreed to as options to provide protection to eagles and raptors.
		p. 4-117		Numbers are transposed in Groundwater Withdrawal line of chart.	Confirm and correct in FEIS.
Chapter 4	4.19.13.1 Summary of Impacts Common to All Alternatives Federally Listed	p. 4-118, paragraph 2	States that pygmy rabbits will probably be more impacted with increased traffic under Alternatives B&C.	The use of LGS and Computer Assisted Operations will substantially reduce traffic, thereby reducing impact to pygmy rabbits.	The FSEIS should state that impacts to pygmy rabbits due to traffic will decrease as a result of the LGS and Computer Assisted Operations.

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	Species				
Ch. 4	Table 4.19-4 4.19-5	p. 4-124	This table is incomplete.		Confirm and clarify in FSEIS and update table to reflect R7, Mesa loop lines, and Condensate Loop.
Chapter 4	4.20.3.1 Habitat Fragmentation and Effectiveness	p. 4-128	<i>"Each well pad could be considered as a patch of altered or unusable wildlife habitat."</i>	The sentence suggests permanent disturbance, and by inference, permanent loss to wildlife. The loss is only for that span of time between disturbance and reclamation.	Provide clarification in the FSEIS to more accurately depict that the loss is only for that span of time between disturbance and reclamation.
		p. 4-128, paragraph 3	Discussion of "edge."	It is unclear how it is calculated.	Clarify in FSEIS how "edge" is calculated.
Chapter 4	4.20.3.1 Big Game Pronghorn	p. 4-130	<i>"After the first year of the study, none of the study animals utilized the Jonah Field Project Area. Analyses of preliminary results indicate that habitat patches of less than about 600 acres are under-utilized or abandoned by wintering pronghorn (Berger et al., 2006)".</i>	The first part of this statement is not accurate; the second part is premature. Although the first year of the report did state that none of the study animals utilized the Jonah field, that finding was nullified a few months later when the same researchers located animals in the Jonah field. The 600 acre fragmentation figure is a preliminary finding, which has neither been substantiated by the Game and Fish, nor has it been subjected to any form of peer review. At this stage of the research study this figure is unverifiable.	This paragraph should be rewritten in the FSEIS to accurately portray the situation with pronghorn in the Jonah field. The reference to the 600 acre habitat fragmentation threshold should either be qualified or eliminated and any analysis and conclusions based on this figure should also be eliminated.

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Chapter 4	4.20.3.1 Big Game, Pronghorn	pp. 4-33, 4-35, 4-37, 4-130, 3 rd paragraph	Several references in document that “although LGS reduce traffic, the reduction is insignificant compared to impact of winter drilling activity.”	While it may be true that the volumes are not equal, this statement does not recognize that winter drilling traffic is short-term and is concentrated in one area while the traffic, which is eliminated with LGS, is spread across the entire field for the LOP.	Confirm and clarify in FSEIS to more accurately reflect the reduction in traffic as a result of LGS.
Chapter 4	4.20.3.1 Big Game Mule Deer	p. 4-131	<i>“Available information, since 2002, indicates that the mule deer population on the Pinedale Mesa steadily declined from more than 5,000 animals in 2002 to less than 3,000 animals in 2004-2005 (Sawyer et al., 2005a).”</i>	The decline was never “steady,” which might indicate a single cause. In addition, since this DSEIS went to the printer, the 2006 Mule Deer Study has shown no further decline and that the numbers slightly increased.	Confirm and update this statement in the FSEIS with the newest findings.
Chapter 4	4.20.3.1 Big Game, Mule Deer	p. 4-132, 3 rd paragraph	While there will likely be reduced levels of mule deer use in areas proximal to field developments, these areas are only ineffective if they are not used, and existing data reveal that they are used in all years by some animals and in some years by most animals.	To be more accurate, the words “remain ineffective” should be replaced with the words “less effective” on line 6.	Confirm and correct in FSEIS so that the words “remain ineffective” are replaced with the words “less effective.”
Chapter 4	4.20.3.1 Upland Game Birds	p. 4-134, 4 th paragraph	Discussion on lek	The assumption that highly impacted leks are very likely to be totally abandoned is not warranted.	Clarify in FSEIS by replacing the words “are very likely to” with the word “may” on line 12.
Chapter 4	4.20.3.1 Aquatic Resources	p. 4-136, last paragraph	Discussion on sediment yields	The statement that up to a 20% increase above current conditions in annual sediment yields to surface waters are expected is an over estimate since no reclamation or sediment control measures were assumed in the modeling.	Confirm and clarify in FSEIS, and correct if this is an over estimate.

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Chapter 4	4.20.3.2 Alternative A (No Action Alternative)	p. 4-138	<i>"Mule deer would continue to avoid habitats adjacent to roads with higher traffic volumes resulting from drilling (North Anticline Road, local roads, and resource roads) by up to 3 or 4 miles."</i>	This statement requires a data citation.	Cite the source of this statement in the FSEIS or delete it.
Ch. 4	4.20.3.3	p. 4-139, paragraph 2	States traffic during winter would be substantially greater through 2011 under Alt B than Alt A because of CDA winter drilling.	To be accurate, the traffic reduction benefits beyond 2011 that occur due to LGS under Alt B should be referenced.	Confirm and clarify in FSEIS recognizing the LOP role the LGS will have in traffic reduction.
Chapter 4	4.20.3.3 Alternative B Proposed Action Alternative)	p. 4-139	<i>"Declines of greater sage-grouse are expected to be more rapid and more extensive under the Proposed Action Alternative than by the No Action Alternative because winter drilling would generate noise and considerably more traffic (due to drilling and completions). This would occur even if development activities are restricted within 2-mile buffers around leks between March 15 and July 15 (BLM, 2004c)."</i>	The Proponents have funded a five-year sage grouse research project to determine the impact of their operations on sage grouse. At this point in time, this statement is speculative and premature.	Confirm and clarify in FSEIS by referencing that the research project is being conducted to answer these questions..
Chapter 4	4.20.3.3 Alternative B Proposed Action Alternative)	p. 4-139	<i>"Under the Proposed Action Alternative, drilling and completions within CDAs would continue to occur year-round within big game crucial winter ranges. However, the Operators have not defined CDAs through 2023. Year-round drilling could occur anywhere within the core area as defined for</i>	The Operators have not defined the CDAs through 2023 because an Adaptive Management philosophy will be used including a 10-year rolling plan with annual adjustments made in concert with Game and Fish, which will define the CDAs in relation to changing wildlife and environmental issues. Under the guiding principles document that operators submitted	Confirm and clarify in FSEIS that Proponents have committed to work with BLM and Game and Fish on a ten-year plan to identify CDAs through 2023 (See Chapter 2, p. 2-23). CDAs for first five years are for illustrative purposes only as CDAs will always be

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			<i>the Proposed Action Alternative (Map 4.1-5)."</i>	to BLM, this statement is not accurate.	determined through annual planning meeting process.
Chapter 4	4.20.3.3 Alternative B Proposed Action Alternative)	p. 4-139	<i>"Consequently, vehicular traffic related to drilling and completions during winter would continue to be substantial as long as year-round."</i>	This statement needs to be clearer. As part of the relaxation of stipulations within the CDAs, the Proponents have proposed as mitigation LGSs, which will substantially reduce traffic. Contradicted by chart on p. 2-13.	Confirm and clarify in FSEIS by referencing the LGS mitigation measure. This is referenced in Alternative C on page 4-140: <i>"Most producing wells would be connected to a liquids gathering system in DA-3 within 2 years of issuance of the ROD, further reducing winter traffic."</i>
Chapter 4	4.20.3.3 Alternative B Proposed Action Alternative)	p. 4-139	Paragraph on habitat fragmentation.	This statement does not clarify that it includes temporary pipeline disturbance and doesn't include reclamation which infers much greater disturbance than will occur.	Confirm and clarify in FSEIS, referencing the immediate reclamation of pipeline disturbance which reduces over all size of disturbance.
Ch. 4	4.20.3.4	p. 4-140, paragraph 6	No new roads will be constructed during winter in DA-3 until DA-2 is complete.	Similarly, no winter road construction will occur under Alts A & B.	Confirm and clarify in FSEIS by incorporating Alts A and B into the statement regarding DA-3 and DA-2
Chapter 4	4.20.2.4	p. 4-140, last paragraph	Under Alternative C, 2011 traffic related to drilling and completions during the winter would be reduced through 2011 in northern portion of DA-1.	Traffic related to drilling and completions during the winter would be eliminated through 2011 in northern portion of DA-1. This is the same as under the Proposed Action.	Confirm and clarify for FSEIS by incorporating the statement that elimination of traffic in the northern portion DA-1 also occurs under Proponents Proposed Action (Alt B).
Chapter 4	4.20.3.3 Alternative C	p. 4-142, 4 th paragraph.	Alternative C indicates that development in DA-1 would proceed from south to north, and that reclamation would occur prior to northward movement. Indicates that habitat will remain more effective and functional under Alt C than under the Proposed Action.	The text in paragraph 4, in particular the first two sentences is misleading. Development would proceed from south to north with reclamation occurring as development progresses northward. Cite basis for this conclusion.	Revise wording in this paragraph to indicate that development will proceed from south to north with reclamation occurring as development progresses northward. Cite basis for this conclusion or eliminate the statement.

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Chapter 4	4.20.3.4 Alternative C through 2011	p. 4-142	<i>“Alternative C does not specify that new surface disturbance would occur, from south to north in DA-1 and from DA-2 to DA-3 before reclamation in those areas would be initiated. However, with all development completed in specific areas before new areas can be developed, the potential for focal points of reclamation is possible under Alternative C. That possibility does not exist under the Proposed Action Alternative.”</i>	This is not accurate. The possibility for focal points of reclamation does exist under the Proposed Action Alternative and was submitted by the Proponents to BLM. As the development moves within the CDAs, reclamation takes place. Based on Adaptive Management, the CDAs will be defined by a 10-year rolling plan fine-tuned in annual planning meetings with the Game and Fish. It will be at those meetings that CDA activity is defined, and consequently, the focal points of reclamation.	Confirm and clarify in FSEIS by using the wording on page 6 (Guiding Principles) of the Proponents’ comment letter to the BLM: “Reclamation will proceed as soon as practical after development drilling, completion, and construction activities are completed on individual pads, reducing net disturbance as development proceeds. Beginning in 2008, the Parties forecast that 70% of the pad will be reclaimed if pits are on the pads and 50% reclaimed if there are no reserve pits on the pad. Parties will also temporarily reclaim pads when no drilling or completion activity is expected within two years.”
Chapter 4	4.20.4 Cumulative Impacts	p. 4-143, Table 4.20-6		The road length ROW does not match information provided in Table 4.20-1.	Confirm and correct table in FSEIS.
Chapter 4	4.20.4 Cumulative Impacts	p. 4-144	<i>“These habitats would be physically eliminated through implementation of alternatives until surface disturbances have been reclaimed. However, revegetation of surface disturbances within native habitats will alter wildlife habitats for the life of the project, especially habitats defined by shrub and tree species.”</i>	This is only accurate if the revegetation within the native vegetation is with non-native plant species. The Proponents have committed to utilizing native species for revegetation so that habitat function is restored as quickly as possible.	Confirm and clarify by referencing the Proponents’ commitment to utilizing native species for revegetation as shown in Appendix C of the Proponents Comment Letter: <i>“Proponent Committed Measures for Reclamation: Proponents will return as much of the disturbed acreage as possible to its pre-disturbed state as quickly as possible. Final revegetation will begin when the last of the wells on the pad is completed. Drilling and completing all wells on a</i>

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					<p><i>pad sequentially results in earlier final revegetation and a smaller disturbed area. Proponents propose to use a variety of options and methods, such as the new habitat seed mixture of grasses, shrubs, and forbs and new application method which is in its second year of demonstration. This expedited reclamation will increase habitat patch sizes and reduce habitat fragmentation for sagebrush-obligate species. Proponents estimate that on the larger consolidated pads, approximately 70% of the pad will be reclaimed if pits were on the pad. If there are no reserve pits, the surface disturbance area is smaller and about 50% of that smaller pad would be reclaimed."</i></p>
Appendix A	Table 2	p. A-2, 3	Management Area Description, Area and Objectives show allowable level of development basically 0 for MA-2 breaks; however, no reference that under No Action, the BLM can approve locations in the breaks upon economic and technical data submission.	The 2000 PAPA ROD envisioned there would be pads within the Breaks. Page 29 of the 2000 PAPA ROD states that well pads and roads will avoid being placed within the Breaks unless "BLM determines that the consequential environmental impacts would be less within the Breaks than outside" or "where the width of the Breaks may exceed the technological and economic feasibility of directional drilling." Page 29 states further that "planning for wells within this MA will require additional public involvement and monitoring" and "will require site-specific NEPA analysis."	Clarify in the FSEIS that the 2000 PAPA ROD envisioned pads and roads within the Breaks if the consequential environmental impacts are less within the Breaks than outside, and where the width of the Breaks precludes economic and feasible directional drilling.

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Appendix A		p. A-5, Table 4	Approved Components in Decision Record number 5 States: Tier II or equivalent, or better for Questar YRD rigs.	This is not accurate. It was specifically Tier II engines – not equivalent or better.	Confirm and correct in FSEIS.
Appendix C	Development Procedures for Well Field Activities	p. C-3, paragraph 2	In general, multi-well pads would require 6 to 28 acres.	This is a contradiction with Appendix L, which says 30 acres.	Make consistent in FSEIS that multi-well pads are estimated to require from 6 to 30 acres.
Appendix C	Development Procedures for Well Field Activities	p. C-3, paragraph 3	Erosion control through revegetation and berms, ditches and sediment ponds.	There are safety issues associated with zero water run off pad designs due to standing water on active drilling pads. These include instability under the substructure and during skidding operations.	The conflicting regulations should be acknowledged in the FSEIS, and it is suggested that the following language from Proponents' comment letter Appendix C (DEIS Appendix E Recommended Revisions) be used instead: "Erosion control measures shall be met as indicated by State of Wyoming Department of Environmental Quality's Storm Water Discharge Permit. Techniques used but not limited to achieve erosion control are installation of barrier silt fencing, riprap, planting of topsoil spoil piles with annual native grasses/forbs, planting cut/fill areas of pads with soil stabilizing native plants."
Appendix C	Development Procedures for Well Field Activities	p. C-3, paragraph 8	Says initial and LOP disturbance for consolidated pads is increased over that for a single well, but less pads for a given number of wells.	To make this statement accurate it should be noted there is also less total disturbance per well with consolidated pads.	Confirm and clarify in FSEIS by noting there is also less total disturbance per well with consolidated pads.
Appendix C	Development Procedures for Well Field Activities	p. C-5	<i>"More or larger tanks would be required at multiple well pads."</i>	This is not accurate. Utilization of an LGS in the Proposed Action would reduce the number of tanks at multiple well pads.	Confirm and correct in FSEIS. By noting that Proponents Proposed Action calls for utilization of an LGS, which will actually reduce the

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					number of tanks at multiple well pads.
Appendix D		p. D-1			FSEIS needs to discuss R7 within same ROW corridor.
Appendix D	Fourth paragraph	p. D-1			RGS drawings will be kept at RGS Salt Lake City facility.
Appendix D	Table 1	p. D-2	Missing lines.		Need to add disturbance of R7, Mesa Loop Lines, and Condensate Loop.
Appendix D	2 nd paragraph	p. D3	No mention of Blacks Fork plant expansion.		Add Blacks Fork/Emigrant Trail Processing Plant Expansion should be discussed.
Appendix D	Trenching	p. D-5	Trenching language is too specific.		Suggest following language: Trenching: A wheel trencher would be used to dig an adequate trench, stacking the dirt beside the ditch. In rocky areas or in areas where the pipeline changes direction, an excavator would be used. The ditch would be excavated to an adequate depth of cover of the pipeline. Soil and topsoil would be windrowed and stockpiled separately along the nonworking side of the trench.
Appendix D	Bending, Welding, and Coating	p. D-5	Language is too specific.		Suggest following language: Bending, Welding, and Coating: A bending machine would be used to bend the pipe to fit the trench and contour of the land. Induction bends (prefabricated bends) would be used as required.
Appendix D	Lowering in Padding and Backfilling	p. D-6	Eliminate language that refers to four-inch berm.		Delete: "leaving a berm of four inches to accommodate settling."
Appendix D	5.0 Hydrostatic Testing	p. D-6	Language too specific.		.First sentence should read: "Pipelines would be pressure tested as per ASME Standard B31.8."

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					Eliminate second paragraph regarding water usage as amounts are specific to the different pipelines being tested.
Appendix D	6.0 Special Construction Techniques	p. D-8	Language too specific.		Change 1 st sentence of 2 nd paragraph to: "Cathodic test stations would be installed as required to maintain pipeline integrity."
Appendix D	Cultural Resources	p. D-11	Requires open ditch inspection.		.Suggest first sentence of 2 nd paragraph to read: "An open trench inspection would be conducted on the pipeline if required by agency with regulatory jurisdiction."
Appendix E	Performance Based Objectives Planning Process	p. E-1	<i>"Perform Preapplication Consultation. The Operators would present preliminary plans to BLM on about January 1 of each year for activities that would occur during the following field season. During the preapplication consultation, the Operators would be informed of BLM procedures and operating requirements, including any other federal, state, or local permit requirements so that inadequacies and deficiencies in the verbal proposal can be addressed with the submittal of the application. The BLM, the Operators, and other affected parties may visit the proposed site to identify unknown issues during the preapplication consultation."</i>	This process is an annual review/approve/deny process, which provides and almost guarantees the uncertainty that the Proposed Action Alternative attempted to eliminate. Without a long-term plan that is fine tuned every year, adaptive management will not work.	The FSEIS should refer to the annual meetings where Operators, BLM and Game and Fish review plans for the coming year and discuss plans for the following year, and to Proponents 10-year rolling plan which is fine-tuned annually in consultation with BLM and Game and Fish as shown in the Proposed Action alternative as explained on page 26-27 of Proponents General Comments.
Appendix E	Performance	p. E-1	Evaluate Application	This section does not define what	BLM should clarify what

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	Based Objectives Planning Process			the “application” is.	“application” means in the FSEIS.
Appendix E	Performance Based Objectives Planning Process	p. E-1	<i>“Based on additional analysis (e.g., environmental assessment - EA, or environmental impact statement - EIS), identify any new mitigation that may be required based on site and project specific information, including new issues identified throughout this process.”</i>	This would promote uncertainty by leaving the NEPA process for this project open-ended and continuous. BLM should specify what new EA or EIS they would use for imposing new mitigation. The Proponents will not know from year-to-year if additional environmental analyses need to be conducted and if operations are held in continuance pending the outcome.	The FSEIS should refer to the annual meetings where Operators, BLM and Game and Fish review plans for the coming year and discuss plans for the following year, and to Proponents 10-year rolling plan which is fine-tuned annually in consultation with BLM and Game and Fish as shown in the Proposed Action Alternative as explained on page 26-27 of Proponents General Comments and in Proponents’ Appendix C (DEIS Appendix E Recommended Revisions).
Appendix E	Performance Based Objectives Planning Process	p. E-1, paragraph 6	BLM, operators and “other affected parties” may visit the proposed site to identify unknown issues during the preapplication consultation.	BLM does not identify who are “other affected parties,” and what would prompt a site visit. The identification of issues etc. is meant to occur at the annual planning meetings with the various agencies.	Confirm and clarify in FSEIS that site visits would be limited to BLM and Game and Fish. The FSEIS should eliminate the need for public participation in individual site visits. . The FSEIS should refer to the annual meetings where Operators, BLM and Game and Fish review plans for the coming year and discuss plans for the following year, and to Proponents 10-year rolling plan which is fine-tuned annually in consultation with BLM and Game and Fish as shown in the Proposed Action alternative as explained on page 26-27 of Proponents General Comments and in Proponents’ Appendix C

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					(DEIS Appendix E Recommended Revisions).
Appendix E	Performance Based Objectives Planning Process	p. E-1, bullet 2	Consultation will identify any new mitigation requirements.	This is a primary function of the annual planning meetings.	The FSEIS should refer to the annual meetings where Operators, BLM and Game and Fish review plans for the coming year and discuss plans for the following year, and to Proponents 10-year rolling plan which is fine-tuned annually in consultation with BLM and Game and Fish as shown in the Proposed Action alternative as explained on page 26-27 of Proponents General Comments and in Proponents' Appendix C (DEIS Appendix E Recommended Revisions)
		p. E-2, last paragraph	Operators would fully develop each existing or new pad in one continuous time span.	Language must be flexible to allow for circumstances where it would be unwise or unrealistic to develop in one continuous time span.	Revise in FSEIS that to the extent practical, pads will be developed in one continuous time span.
Appendix E	PBO – Temp Site Stabilization	p. E-3 ,#2	<i>“During the period when an existing well pad is not being fully developed, there would be no runoff of water or sediment from existing pad. Operators would modify all existing pads to achieve zero sediment discharge for a 25-year storm or snowmelt event within 1 year of following authorization by BLM in the SEIS ROD.”</i>	Prescribing zero water runoff is unsafe and is not prudent. This would cause safety issues with standing water and with standing water leaking into subsurface trenches. Access to the wellbores would be impeded due to flooding or the requirement of permanent retention pond increasing the disturbed areas. Flooding of cellars is a safety risk. This has already been demonstrated in Vermillion basin where the locations are built to this standard and no retention pond is put in place. Operators have installed silt fence and other erosion control devices to contain sediment at all warranted sites. This practice has been quite	Confirm and clarify in FSEIS as explained in Proponents' Comment Letter Appendix C (DEIS Appendix E Recommended Revisions) by deferring to Section 405 of the Clean Water Act (40 C.F.R. Parts 122, 123, and 124) and WDEQ Water Quality Rules and Regulations Ch. 1, 2, 7 & 8. Proponents shall comply with State and Federal policies by obtaining the required permits. Storm Water Discharge permits regulate off-site storm water runoff from construction activities with one acre or more of disturbance. Regularly scheduled site

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				<p>successful at reducing the vast majority of the sediment from pads. Where practical, some operators have initiated revegetation efforts on the slopes of well pads with mixed results to date. Proponents are continuing to find practical and reasonable means to minimize the adverse impacts of surface run-off from well pads. It is physically unrealistic and unworkable and in some cases unsafe to have the agency stipulate “no runoff” and to make modifications to have “zero runoff” from a 25-year storm event one year after construction. Appropriate technologies do not exist from engineering and revegetation perspectives to meet this requirement.</p> <p>It is not feasible to modify all existing locations to achieve zero sediment discharge for a 25-year storm or snowmelt event within one year.</p>	<p>inspections must be done, with additional inspections when above average precipitation amounts occur.</p> <p>Revise language to allow 2-3 years from ROD to modify all existing locations to achieve zero sediment discharge for a 25-year storm or snowmelt event.</p>
Appendix E	PBO – Temp Site Stabilization	p. E-4, #3	<i>“During the period when an existing well pad is not being fully developed, the well pad would be vegetated prior to the first winter after the ROD to achieve at least 50% vegetative cover of desirable herbaceous species by the following spring.”</i>	<p>Coverage requirements in the DSEIS are extremely high given the cold, dry environment of the Pinedale Anticline. The only way to achieve the stated percent cover figures would be to introduce non-native grass species that are incompatible with the BLM’s State and Regional Sage Grouse restoration goals.</p> <p>It should be noted in the FSEIS that it will take time to determine which pads definitely have to have interim reclamation and to dewater pits.</p>	<p>Confirm and clarify in FSEIS with the following suggested language from Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions): Within a reasonable time period after the ROD SEIS takes effect, operators will identify pads that will not be used within 2 years. The timetable for reclamation in any given year will be established at the annual planning meeting. Operators</p>

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				The amount and availability of construction equipment available must also be assessed.	will return as much of the landscape as possible to a condition usable by wildlife and livestock as quickly as possible. All areas to be seeded must be composed of native species and be site-specific.
Appendix E	PBO – Temp Site Stabilization	p. E-4, #5	<i>“Reserve pits on existing pads that would not be fully developed in 2 or more years after the ROD would be reclaimed prior to the first winter after the ROD.”</i>	A grace period is needed to understand the implications of the SEIS and ROD prior to knowing which pads will not be used within 2 years for pits to be closed. This is due to uncertainty of access and the associated development planning sequence. In addition, it takes several months to either evaporate or haul the fluids/cuttings to disposal so that the pit is not too wet to close. Pits that are closed when they are too wet will create unstable soils for future activities.	Clarify in FSEIS with the following suggested language from Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions): <i>“During the annual meeting, Proponents will determine which reserve pits will not used within 2 years and a schedule will be established for interim reclamation.”</i>
Appendix E	PBO – Temp Site Stabilization	p. E-4, #6	<i>“Access road(s) leading to the temporarily stabilized well pads would be revegetated to the same levels required on the well pad.”</i>	Nearly every road in the PAPA has been designed for heavy truck traffic, which includes water control and road base. There are safety issues related to well control, spills or injuries that require the ability to access all pads during all seasons. Revegetating the roads would require ripping to reduce compaction. This cannot be done for safety reasons. Proponents must be able to handle emergency situations which may require mobilization of rigs, cranes and other heavy equipment. This is for LOP.	Clarify in FSEIS with the following suggested language from Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions): <i>“Due to the need for heavy truck traffic to access locations for general maintenance, emergencies, loading of produced water and condensate, it is advised that these roads be maintained. Once the pad is at full reclamation (all well on the pad are plugged and abandoned) or heavy truck traffic is no longer needed to</i>

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					<i>the site, the road can be reconstructed to allow for a two-track access or complete reclamation.</i>
Appendix E	PBO – Reclamation	p. E-4, #7	<i>“Vehicular access on the revegetated road(s) would be on two-tracks established during road revegetation. Two-track access would be sufficient for use by only one vehicle at a time.”</i>	<p>This should only apply to plugged and abandoned pads. There are safety issues related to well control, spills or injuries that require the ability to access all pads during all seasons. Revegetating the roads would require ripping to reduce compaction. This cannot be done for safety reasons. Proponents must be able to handle emergency situations which may require mobilization of rigs, cranes and other heavy equipment. This is for LOP.</p> <p>Roads suitable for work-over rigs and other large vehicle access under all weather conditions must be retained for the life of all wells on a pad.</p> <p>There should be specific parameters for road reclamation (e.g., reclamation of surface to allow for a single-lane road). Two-tracks will be unacceptable in many areas.</p>	<p>Clarify in FSEIS that this only applies to plugged and abandoned wells, otherwise it is recommended that the following suggested language from Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions) be used: <i>“Due to access of heavy truck traffic to locations for general maintenance, emergencies, loading of produced water and condensate, it is advised that these roads be maintained. Once the pad is at full reclamation (all wells on the pad are plugged and abandoned) or heavy truck traffic is no longer needed to the site, the road can be reconstructed to allow for a two-track access or complete reclamation.”</i></p>
Appendix E	PBO – Reclamation	p. E-4, Items 10 and 11	Full site reclamation is not adequately defined.	In order to have adequate pad acreage, it will be necessary to accommodate work-overs and that cut and fill slopes will remain for the life of the wells (i.e., post-development pads will not always conform to original contours).	Confirm and clarify in FSEIS by referring to Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions).
Appendix E	PBO – Reclamation	p. E-4, Item 13	Vegetation protection is not defined.	Full site restoration would require protection of vegetation until herbivory by wildlife and livestock can be sustained. To clarify the intent, fencing should be specified	Confirm and clarify in FSEIS by referring to Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions) that

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				if that is the requirement.	full-site restoration would require fencing around reclamation vegetation area until herbivory by wildlife and livestock could be sustained.
Appendix E	PBO – Reclamation	p. E-4, Item 14	Access road to fully restored pads would be reclaimed to conform to the original contours.	Clarification of wording would assist in understanding at what point this would occur as Proponents assume it would be after all wells on a pad have been plugged and abandoned as producing pads require access at all times to address emergencies.	Confirm and clarify in FSEIS by referring to Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions) that Access road(s) leading to the fully restored well pad and after all wells on the pad had been plugged and abandoned would be reclaimed to conform to the original corridor contours.
Appendix E	PBO – Reclamation	p. E-5, #15	Access road to fully restored pads would be revegetated to the same levels required on the pads.	Clarification of wording would assist in understanding at what point this would occur, as Proponents assume it would be after all wells on a pad have been completely plugged and abandoned as producing pads require access at all times to address emergencies.	Confirm and clarify in FSEIS by referring to Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions) that Access road(s) leading to the fully restored well pad and after all wells on the pad had been plugged and abandoned would be reclaimed to conform to the original corridor contours.
Appendix E	PBO – Reclamation	p. E-5, #16	Revegetated roads to fully reclaimed pads would serve as 2 tracks.	There are safety issues related to well control, spills or injuries that require ability to access all pads in all seasons and, possibly, by multiple vehicles at a time.	Clarify in FSEIS that this only applies to plugged and abandoned wells, otherwise it is recommended that the following suggested language from Proponents’ comment letter Appendix C (DEIS Appendix E Recommended Revisions) be used: “ <i>Due to access of heavy truck traffic to</i>

PA-112
BI-1-194
PA-113
BI-1-195
PA-114
BI-1-196
PA-115
BI-1-197

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
					<p><i>locations for general maintenance, emergencies, loading of produced water and condensate, it is advised that these roads be maintained. Once the pad is at full reclamation (all wells on the pad are plugged and abandoned) or heavy truck traffic is no longer needed to the site, the road can be reconstructed to allow for a two-track access or complete reclamation."</i></p>
Appendix E	PBO – Reclamation	p. E-5, #19	<p><i>Vehicular access on the reclaimed, revegetated pipeline corridors would be on two-tracks only if there is no adjacent road. No vehicular access would be allowed along reclaimed, revegetated pipeline corridors. Two-track access, if allowed, would be sufficient for use by only one vehicle at a time."</i></p>	<p>There are safety issues related to well control, spills or injuries that require ability to access all pads in all seasons and, possibly, by multiple vehicles at a time.</p>	<p>Language should be added in the FSEIS stating that revegetated roads would serve as two tracks to plugged and abandoned well pads.</p>
Appendix E	PBO – Reclamation	p. E-5, #20	<p>Says it is operator’s responsibility to determine if reclamation criteria are being met, develop and implement remedial action.</p>	<p>#22 says it is BLM’s responsibility to provide Proponents with remedial actions. #21 says it is BLM’s responsibility to evaluate whether success standards are being met. These are conflicting.</p>	<p>Reconcile and correct for the FSEIS.</p>
Appendix E	PBO – Reclamation	pp. E-5 to E-6, # 23 and 24	<p>Whereas reclamation monitoring is appropriate, some of the methodologies provided are overly rigorous.</p>	<p>The document should indicate that alternate BLM-approved monitoring methodologies may be employed.</p>	<p>Language should be added in the FSEIS stating that alternate BLM-approved monitoring methodologies may be employed.</p>
Appendix E		p. E-7, #27	<p><i>"During the period when an</i></p>	<p>It may not be economically feasible</p>	<p>Confirm and clarify for FSEIS</p>

PA-115
BI-1-197
PA-116
BI-1-198
PA-117
BI-1-199
PA-118
BI-1-200
PA-119
BI-1-201

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
			<i>existing well pad is not being fully developed and is subject to temporary site stabilization measures, all existing producing wells on the pad would be connected to the Operator's liquids gathering system."</i>	for Proponents to connect all producing wells on a pad to an LGS. There may be some pads that are not positioned such that they may be connected to an LGS due to operational, topographical, geographical and vegetative reasons.	that during the period when an existing well pad is not being fully developed and is subject to temporary site stabilization measures, all existing producing wells on the pad where feasible, would be connected to the Proponents' LGS.
Appendix E	PBO – Limitation of Human Presence	p. E-7, #32	<i>" limit all noise associated with production activities to less than 10 dBA above background noise."</i>	The FSEIS should be specific as to how this measure will be monitored and must allow for upset conditions. How does the "10 decibels above background noise levels, measured 250 feet from the outer edge of each well pad" compare to recent BLM DR to "[M]aintain noise levels at 75dBa or less measured 30 feet from noise source (drilling pad, compressor, etc.)["? (Source: the ASU Year-Round Drilling Demonstration Project (BLM, 2005b), Appendix A.) Or how does it compare to the current PAPA ROD language: "... and shall not result in an increase greater than 10 Decibels (dBA) above background (i.e. 39 dBA background + 10 dBA = 49 dBA) at the edge of a sage grouse lek["? (PAPA ROD, p. 21).	For consistency with recent BLM RDs, the FSEIS should confirm and clarify that noise levels will be maintained at 75dBa or less measured 30 feet from noise source (drilling pad edge, compressor, etc.).
Appendix E	PBO – Limitation of Human Presence	p. E-7, #33	Use flareless completions for all wells unless proven on a case-by-case basis that it would be unsafe.	The Wyoming Department of Environmental Quality (WDEQ) regulates flareless completions in the PAPA, and any BLM comments on flareless completions should reflect the WDEQ's jurisdiction over this issue.	Confirm and clarify in FSEIS that Proponents would utilize flareless completions for all wells within their leasehold under the WDEQ's permitting regulations for flareless completions in the PAPA.
Appendix E	PBO –	p. E-7, #34	<i>"Operators would require</i>	The data used to support this	Confirm and clarify in FSEIS

PA-119
BI-1-201
N-4
BI-1-202
PA-120
BI-1-203
N-5
BI-1-204

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
	Limitation of Human Presence		<i>all vehicles used, including those of all sub-contractors and vendors, to have fully functional hospital-grade mufflers. "</i>	<p>requirement should be cited. This requirement may not be feasible given that trucks are delivering goods to the PAPA are from all over America.</p> <p>Hospital-Grade mufflers are not available for light trucks and cars. Changing the back pressure in the exhaust system may have unknown and unwarrantable changes to the manufacturer's product. It is unreasonable to place a requirement that requires voiding the warranty of a brand new truck or car.</p>	the data used to support this requirement, or substantially refine or delete this comment.
Appendix F		p. F-2, Cult. Res.	Says Proposed Action has "potential destruction of archaeological resources from new surface disturbance in frozen soils."		Confirm and clarify in FSEIS that the Proposed Action excludes surface disturbance when soil is frozen. This should be referenced in the FSEIS
Appendix K		p. K-2, paragraph 1	Says BLM 2005 DR for an addendum to Questar's YRD "allowed for accelerated winter development on the Mesa, including well completions and the addition of a third rig."		Confirm and clarify in FSEIS That this should state that this was a one-time exception due to concern about gas supplies due to Gulf Coast hurricanes' impacts.
Appendix K	Mule Deer Technical Report	p. K-12 Conclusion	The report analyzes fawn survival rates and seems to indicate that weather (snowfall, precipitation and minimum temperature) account for nearly 88% of variation in fawn mortality. Yet the report concludes that deer were probably "escaping from vehicular traffic and other natural gas activities within crucial winter range."	Conclusions should be based on facts and not unsubstantiated opinions. In addition the emigration rates in control area resulted in increasing the size of the control area.	The FSEIS should either provide a data citation for the statement, or it should be deleted.

N-5 BI-1-204
 C-5 BI-1-205
 PA-121 BI-1-206
 W-46 BI-1-207

Section of DSEIS	Subsection	Page number(s)	Issue	Response	Final SEIS Recommendation
Appendix M	M.8, M.22	p. M-5 and M-19	Summary of Max Modeled NO2....Alt C 80% drill rig mitigation. Modeled impacts are reduced by 80% but not the background even though the background is made up of emissions from what is being mitigated.	The Boulder station provides downwind data instead of Daniel, which provides up wind data. This is inaccurate.	Confirm and clarify in FSEIS by correcting windage station, which is Daniel.
AQ Vol 1	1.1	.p. 4, paragraph 3	QGM plans to add 31,000 hp in 2009 and 15,500 hp in 2015.	These are not correct.	Confirm and correct in FSEIS
AQ Vol 1	1.2	p. 5, paragraph 2	Says Questar would utilize Tier II engines or alternate fuels on all drilling rig engines by 2007 per 2004 EA.	There was no commitment to alternate fuels in 2004 EA.	Confirm and correct in the FSEIS.
AQ Vol 1	1.2	p. 6, paragraph 2	November 2005 DR that allowed Questar to have one additional drilling rig and 4 winter completions.		Confirm and clarify in the FSEIS by noting that this DR was for winter 2005-06 only due to concern over gas shortages related to Gulf Coast hurricanes.
AQ Vol 1	4.2	p. 36, paragraph 1	Says Alt C is similar to Alt B, but includes mitigation options.	This is an incomplete statement.	Clarify in FSEIS by including the word "additional" before mitigation options.

AQ-29
 BI-1-208
 AQ-30
 BI-1-209
 AQ-31
 BI-1-210
 AQ-32
 BI-1-211
 AQ-33
 BI-1-212

APPENDIX B RECOMMENDED PAPA ROD AND SUBSEQUENT RD COMPONENTS TO TRANSITION TO FSEIS AND ROD

	DOCUMENT	TOPIC	ACTIVITY	CITATION
G-11 BI-1-213	2000 PAPA ROD	Seasonal Road Closure	Retain closure of Mesa Road to public from January 15 to April 30.	p. 12
G-12 BI-1-214	2000 PAPA ROD	Road Maintenance Agreement	Retain requirement for road maintenance agreements among all operators using specific roads.	p. 16
G-13 BI-1-215	2000 PAPA ROD	Exception Requests	Retain process for requesting exceptions.	p. 27, p. A-19
G-14 BI-1-216	2000 PAPA ROD	Watering Roads	Retain ability to use treated produced water for watering roads.	p. A-10
G-15 BI-1-217	2000 PAPA ROD	Reclamation	Continue to allow operators to use their own expertise in recommending and implementing construction and reclamation projects.	p. A-14
G-16 BI-1-218	2000 PAPA ROD	Surface pipelines	Retain the ability to use surface pipelines where steep slopes are traversed.	p. A-26
G-17 BI-1-219	2000 PAPA ROD	Mitigation Guidelines and Standard Practices	Surface occupancy within 0.25 mile of an active lek	p.19, Appendix A, p. A-19
G-18 BI-1-220	2000 PAPA ROD	Minimize Wildlife Mortality	Retain education of workers, to minimize poaching including prohibition of dogs on location, disciplinary laws against those who violate the laws.	p. A-18

G-19

BI-1-122

<p>2004 Questar Year-Round Drilling Proposal</p> <p>2005 Questar Condensate Pipeline Modification</p> <p>2005 Questar Year-Round Drilling Addendum</p>	<p>Habitat Improvement</p>	<p>Questar understands that the habitat improvement commitments under the PAPA SEIS will replace Questar's commitments made in previous documents. Questar requests that its current habitat improvement projects (totaling approximately 300 acres) be credited towards its obligation under the PAPA SEIS.</p>	<p>p. 2-13</p> <p>p. 2</p> <p>p. 12</p>
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APPENDIX C
DSEIS APPENDIX E RECOMMENDED REVISIONS

The Proponents are recommending some general and specific changes to Appendix E on Performance Based Objectives (PBOs).

General Recommendations:

— G-20 —
— BI-1-222 —
The planning process described in Volume 2 of 2, Appendix E, p. E-1 through E-2 should be replaced with the ten-year rolling plan, fine tuned in annual multi-agency meetings as described in the Proponents' General Section, pp. 26-27. Rationale for using the longer-term planning process with annual meetings to assess operations, review monitoring information and adjust operations as necessary is explained on those pages and the Performance Based Planning needs to define this process as outlined.

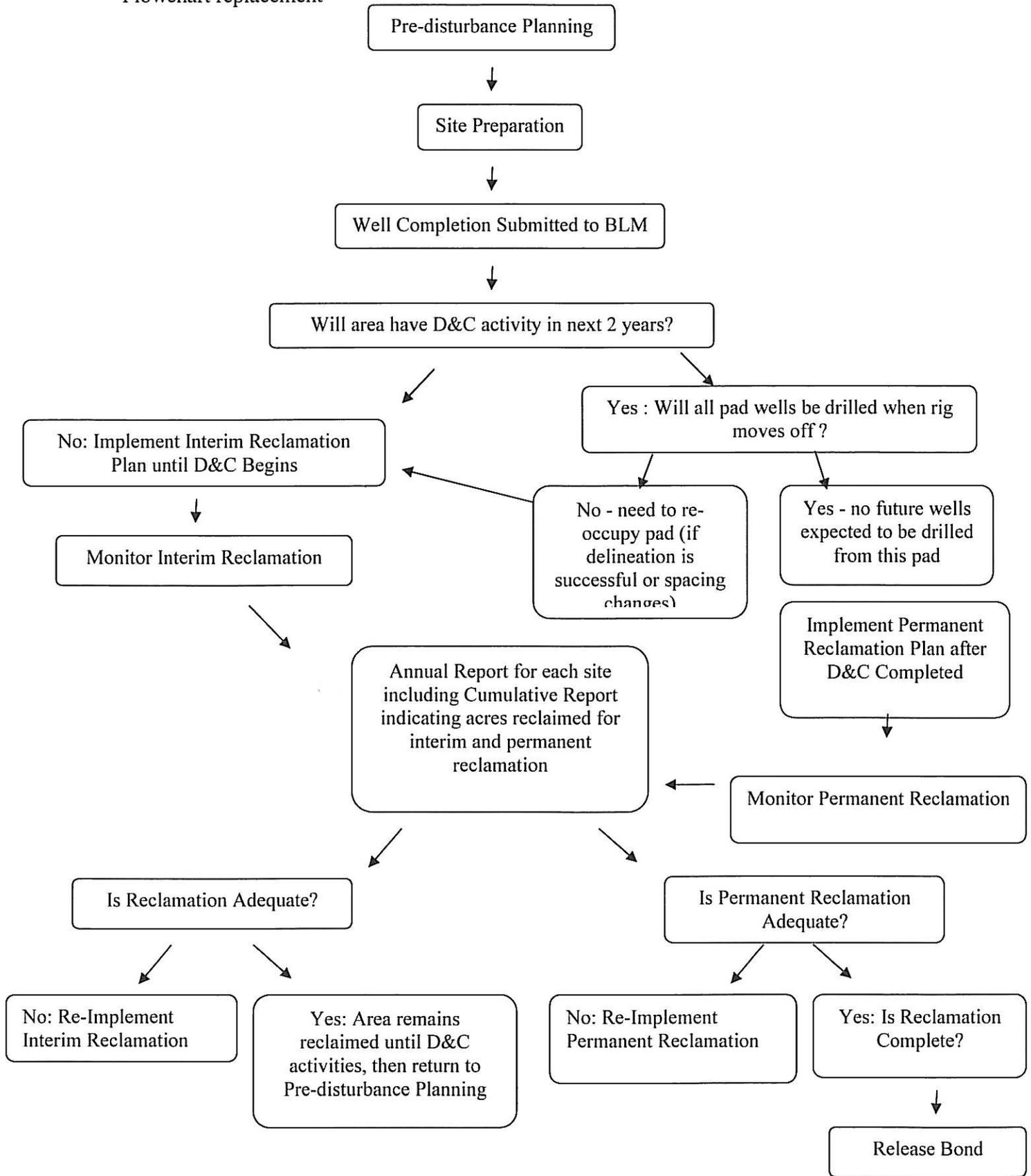
— G-21 —
— BI-1-223 —
Under "Planning" on p. E-2, the phrase, "... Operator(s) would not reinitiate development on the pad...,contradicts the intent of adaptive management planning that Performance Based Objectives are based on and should be deleted and replaced with language cited and explained in the Proponents' General Section, pp. 22-23,,: "*Pads will be reused expanded to the extent possible. Pad issues will be discussed and resolved in annual planning with the BLM and Game and Fish .*"

— G-22 —
— BI-1-224 —
Appendix E of the DSEIS has numerous instances where the phrase "a pad is being (or not being) fully developed" and this language is confusing to the Proponents. In some instances it appears to mean "no drilling activity is currently happening on the pad" and in other instances the same phrase appears to mean "all wells on this pad will be drilled before the rig leaves the pad." Proponents recommend that the phrase "a pad is being (or not being) fully developed" be deleted from the document and more detailed, accurate language be used.

Proponents fully support monitoring and mitigation based on measurable impacts directly attributable to gas development, based on verifiable wildlife data that can be replicated and reviewed by an independent panel. Performance Based Objectives (PBOs), as introduced in the DSEIS Appendix E, is a new concept, and while Proponents support this principle, they recommend caution with its implementation. As the details of implementation of PBOs were not clearly defined in the DSEIS Appendix E, Proponents are concerned that any effort to pre-determine and prescribe mitigation responses, prior to sufficient data and analysis being available, will be subject to varying interpretation, and likely lead to a mitigation plan that does not deliver its objectives. As such, Proponents are committed to working with BLM and Game and Fish to develop a monitoring and mitigation plan, based on verifiable wildlife data that can be replicated, which can unambiguously determine impacts related to gas development activities.

Specific Recommendations:

— G-23 —
— BI-1-225 —
The Proponents recommend that the diagram on p. E-3 be replaced with the following diagram that provides a better explanation of the process.
PG E-3



Within one year of the Record of Decision the operators, BLM, and appropriate state agencies will develop options for the reclamation implementation plan and evaluation criteria for determining successful reclamation for release of the bond.

RC-5

BI-1-226

RC-6

Appendix E discussions on reclamation need to be fortified and in some cases corrected. The Reclamation Plan in Appendix E should more accurately reflect the operational and safety requirements of pad activities. For example, it is not feasible to require immediate reclamation of all pads within a very narrow timeframe. In addition, as currently written it will be virtually impossible for the Proponents to comply with the specific language contained in Appendix E. The only way to meet the stated percent cover figures would be to introduce non-native grass species that are incompatible with the BLM’s State and Regional Sage Grouse restoration goals. The focus for reclamation should be wildlife habitat restoration created through vigorous site-stabilizing plant growth, with a native plant community that is ecologically comparable to the approximate surrounding landscape. This community should be diverse in species composition, age classifications and productivity approximately equal to pre-disturbance levels. Should available seed mixtures, techniques and other applications be available to enhance the productivity and diversity of the reclaimed area used by wildlife, these methods should be pursued.

p. E-3. Under Temporary Site Stabilization

1. “On existing well pads that would not be fully developed within the upcoming annual cycle, all bare ground would have at least a 75 percent protective cover that may include but not be limited to organic mulch, herbaceous vegetation, jute matting, or other erosion-preventative fabric. Protective cover may be excluded on active work sites (up to the wellhead with production equipment) if justified by the Operator and the concurrence of the BLM.”

PA-122

BI-1-227

Comment: Should said methods of protective cover be implemented, this would be in violation of OSHA statute which requires a buffer zone around operating areas. 1910.106(h) (8) (iv) "Clear zone." Ground area around buildings and operating areas shall be kept free of tall grass, weeds, trash, or other combustible materials. If the purpose of the clause is to prevent soil erosion, there are already regulations in place to address these issues. The phrase “would not be fully developed” is confusing.

SW-1

BI-1-228

Suggested Language: Erosion control measures for pads with no current drilling activity shall be met as indicated by State of Wyoming Department of Environmental Quality’s (WDEQ’s) Storm Water Discharge Permit. Techniques used but not limited to achieve erosion control are installation of barrier silt fencing, riprap, planting of topsoil spoil piles with annual native grasses/forbs, planting cut/fill areas of pads with soil stabilizing native plants.

p.E-3 – E-4

2. “During the period when an existing well pad is not being fully developed, there would be no runoff of water or sediment from existing pad. Operators would modify all existing pads to achieve zero sediment discharge for a 25-year storm or snowmelt event within 1 year of following authorization by BLM in the SEIS ROD.”

Comments: Proponents have installed silt fence and other erosion control devices to contain sediment at all warranted sites. This practice has been quite successful at reducing the vast majority of the sediment runoff from pads. Where practical, some

Proponents have initiated revegetation efforts on the slopes of well pads with mixed results to date. Proponents are continuing to find practical and reasonable means to minimize the adverse impacts of surface run-off from well pads. It is physically unrealistic and unworkable and in some cases unsafe to have the agency stipulate “no runoff of water” and to make modifications to have “zero sediment discharge” from a 25-year storm event one year after construction. Appropriate technologies do not exist from engineering and revegetation perspectives to meet this requirement. The phrase “is not being fully developed” is confusing.

SW-2
BI-1-229

Suggested Language: Pursuant to Section 405 of the Clean Water Act (40CFR Parts 122,123, and 124) and WDEQ Water Quality Rules and Regulations Ch. 1, 2, 7 & 8, operators shall comply with State and Federal policies by obtaining the required permits. Storm Water Discharge permits regulate storm water runoff from construction activities with one acre or more of disturbance. Regularly scheduled site inspections must be done, with additional inspections when above average precipitation amounts occur.

p. E-4 (#3-#9)

- 3. “During the period when an existing well pad is not being fully developed, the well pad would be vegetated prior to the first winter after the ROD to achieve at least 50% vegetative cover of desirable herbaceous species by the following spring.”

RC-7
BI-1-230

Comments: Coverage requirements in the DSEIS language are unrealistically high given the cold, dry environment of the Pinedale Anticline. The only way to achieve the stated percent cover figures, would be to introduce non-native grass species that are incompatible with the BLM’s State and Regional Sage Grouse restoration goals. The phrase “is not being fully developed is confusing”.

Suggested Language: It will take a time to determine which pads will need interim reclamation and to dewater pits. The amount and availability of construction equipment available must also be assessed. Within a reasonable time period after the ROD SEIS take effect, operators will identify pads that will not be used within 2 years. The timetable for reclamation in any given year will be established at the annual planning meeting. Operators will return as much of the landscape as possible to a condition usable by wildlife and livestock as quickly as possible. All seed used must be composed of native species and be site-specific. The introduction of non-native species into natural ecosystems is restricted by Executive Order 11987 and BLM manual 1745. A representative reference site would be identified for comparison to measure success of reclamation. The reference site must be undisturbed, similar in vegetative composition, soil structure, slope, and aspect. If possible, the reference site would be adjacent to the reclamation site. (Source: JIO) Should the success criteria stated below not be met, the operators would be responsible for implementing additional measures that may include but not be limited to: soil amendments, reseeding, inter-seeding, providing precipitation, installing fences to isolate plantings from ungulates, creating snow fences to increase snowfall depth.

- 4. “If an existing well pad would not be fully developed in 2 or more years after the ROD, desirable vegetation growth of the well pad would be at least 80 percent cover within three growing seasons.”

S-1

BI-1-231

Comments: The language is out of accord with soil engineering required to construct stable pads, and unrealistic in that the leaseholder must have access to the pads during interim phases of development. Also, the language “would not be fully developed” is confusing.

RC-7

BI-1-232

Requiring 80 percent vegetative cover would mandate re-engineering of pads such that they would be safe. There are safety issues related to well control, spills or injuries that require the ability to access all pads during all seasons. Revegetating the roads would require ripping to reduce compaction. This cannot be done for safety reasons. Proponents must be able to handle emergency situations which may require mobilization of rigs, cranes and other heavy equipment. This is for life of project. Staying off these sites completely is the net effect of this language, as any access would disrupt vegetative cover and prevent reaching the mandated 80 percent requirement. This language is incompatible with responsible and safe operations of gas well companies on the Anticline.

Suggested Language: Delete language due to safety issues.

5. “Reserve pits on existing pads that would not be fully developed in 2 or more years after the ROD would be reclaimed prior to the first winter after the ROD.”

PA-123

BI-1-233

Comments: A transition period is needed to understand the implications of the SEIS and ROD prior to knowing which pads will not be used within 2 years for pits to be closed. This is due to uncertainty of access and associated development planning sequence. In addition, it takes several months to either evaporate or haul the fluids/cuttings to disposal so that the pit is not too wet to close. Pits that are closed when they are too wet will create unstable soils for future activities. The phrase “would not be fully developed” is misleading and probably is referring to whether any drilling activity would occur during the 2 years after a ROD.

PA-124

Suggested Language: During the annual meeting, Proponents will determine which reserve pits will not used within 2 years and a schedule will be established for closing and reclaiming the pits. These areas will be reseeded according to #3 above.

6. “Access road(s) leading to the temporarily stabilized well pad would be revegetated to the same levels required on the well pad.”

PA-125

BI-1-234

Comments: There are safety issues related to well control, spills or injuries that require the ability to access all pads during all seasons. Revegetating the roads would require ripping to reduce compaction. This cannot be done for safety reasons. Proponents must be able to handle emergency situations which may require mobilization of rigs, cranes and other heavy equipment. This is for life of project.

Suggested Language: Due to the need for heavy truck traffic to access locations for general maintenance, emergencies, loading of produced water and condensate, it is mandatory that these roads be maintained. Once the pad is at full reclamation (all wells

on the pad are plugged and abandoned) the road can be reconstructed to allow for a two-track access or complete reclamation. BI-1

7. “Vehicular access on the revegetated road(s) would be on two-tracks established during road revegetation. Two-track access would be sufficient for use by only one vehicle at a time.”

Comments: This is true, and Proponents recommend no changes to this language as long as the Suggested Language of #6 is incorporated.

8. Comments: Proponents have no changes to this language.
9. Comments: Proponents have no changes to this language.

p. E-4

Add the following before “Full Site Reclamation”:

Vegetative Criteria for Interim Site Stabilization

- a. Native Forbs:** The average density or frequency of forbs must be a minimum of 75 percent of the reference site. Diversity of forbs on a reclaimed site must be equal to or greater than the reference site.
- b. Native Shrubs:** The average density or frequency of the shrub component must be at least 50 percent of the reference site. This includes both shrubs and half shrubs (e.g. winterfat, fringed sage, etc.). At least 15 percent density or frequency of the shrub component must be by the dominant species from reference site. The diversity of shrubs must be equal to or greater than the reference site.
- c. Native Grasses:** Reclaimed sites must have a minimum of 3 native perennial grass species present, 2 of which must be bunch grass species. These are to be planted at rates appropriate to achieve abundance and diversity characteristics similar to those found on the reference site.
- d. Non-Native Weeds:** Sites must be free from all species listed on the Wyoming or Federal noxious weed list. All state and federal laws regarding noxious weeds must be followed. Other highly competitive invasive species such as cheatgrass and other weedy brome grasses are also prohibited.
- e. Plant Vigor:** Plants must be resilient as evidenced by well-developed root systems, flowers, and seed heads. All sites must exhibit the sustainability of the above desired attributes after the removal of external influences. A minimum of 1 growing season without external influences (irrigation, mat pads, fences, etc.) may satisfy this requirement.

p. E-4 – E-5. Under Full Site Reclamation

Add to the current section and change specific numbered objectives as outlined:

RC-8

BI-1-235

1. Ground Cover & Ecological Function:

To ensure soil stability and nutrient cycling, ground cover must be equal to or greater than the reference site and vegetative litter must be decomposing into the soil

2. Vegetative Criteria:

a. Native Forbs: The average density or frequency and total diversity of forbs must be equal to or greater than the reference site.

b. Native Shrubs: The average density or frequency of the shrub component must be at least 50% of the reference site. This includes both shrubs and half shrubs (e.g. winterfat, fringed sage, etc.). At least 25% density or frequency of the shrub component must be the dominant species from the reference site. The diversity of shrubs must be equal to or greater than the reference site.

c. Native Grasses: Reclaimed sites must produce equal to but not excessive grass production compared to the reference site. A minimum of 3 native perennial species must be included with at least 2 bunch grass species.

d. Non-Native Weeds: Sites must be free from all species listed on the Wyoming or Federal noxious weed list. All state and federal laws regarding noxious weeds must be followed. Other highly competitive invasive species such as cheatgrass and other weedy brome grasses are also prohibited.

e. Plant Vigor: Plants must be resilient as evidenced by well-developed root systems and flowers. Shrubs will be well established and in a “young” age class at a minimum (e.g. not comprised of seedlings that may not survive until the following year).

p. E-4.

10. “Once a well pad has been fully developed, full site restoration and reclamation would begin as soon as the ground is not frozen and would be completed before the onset of winter.”

11. “Full site restoration would require re-grading the pad to conform to the original contours.”

Comments: The language should be clear that adequate pad acreage will be necessary to accommodate work-overs, and that cut and fill slopes will remain for the life of the wells (i.e., producing pads will not always conform to original contours however for final reclamation the site will be recontoured as close to original contours as possible).

12. Comments: Proponents have no changes to this language.

13. “Full site restoration would require protection of vegetation until herbivory by wildlife and livestock can be sustained.”

BI-1-235

PA-126
BI-1-236

RC-9
BI-1-237

Comments: Proponents understand #13 if the vegetation criteria above are included. To clarify the intent of #13, fencing should be specified if that is the requirement.

Suggested Language: Full site restoration would require fencing around reclamation vegetation area until herbivory by wildlife and livestock could be sustained.

14. "Access road(s) leading to the fully restored well pad would be reclaimed to conform to the original corridor contours."

Comments: Clarification of wording would assist in understanding at what point this would occur as Proponents assume it would be after a well pad has been completely plugged and abandoned as producing pads require access at all times to address emergencies.

Suggested Language: Access road(s) leading to the fully restored well pad and after all wells on the pad had been plugged and abandoned would be reclaimed to conform to the original corridor contours.

p. E-5

15. "Access road(s) leading to the fully restored well pad would be revegetated to the same levels required on fully reclaimed well pads."

Comments: Proponents have the same concerns as listed for #14.

Suggested Language: Access road(s) leading to the fully restored well pad and after all wells on the pad had been plugged and abandoned would be revegetated to the same levels required on fully reclaimed well pads. For temporary reclamation, vegetation requirements will be as noted in the Vegetative Interim site stabilization criteria referenced on p. 7 of this document. All access roads and pad contours will be left in a usable state for the interim site stabilization period. Upon plugging and abandoning the wells on the site, the pad and access road will be recontoured as much as practical to the original contours of the site and lands adjacent.

16. "Vehicular access on the reclaimed, revegetated road(s) would be on two-tracks established during road revegetation. Two-track access would be sufficient for use by only one vehicle at a time."

T-7
BI-1-238

Comments: There are safety issues related to well control, spills or injuries that require ability to access all pads in all seasons and, possibly, by multiple vehicles at a time.

Suggested Language: Two-track roads are not sufficient for emergency access to pads until the pad has had all wells plugged and abandoned and has been fully reclaimed.

- 17. Comments: Proponents have no changes to this language.
- 18. Comments: Proponents have no changes to this language.
- 19. “Vehicular access on the reclaimed, revegetated pipeline corridors would be on two-tracks only if there is no adjacent road. No vehicular access would be allowed along reclaimed, revegetated pipeline corridors. Two-track access, if allowed, would be sufficient for use by only one vehicle at a time.”

Comments: Proponents have no changes to this language

p. E-5. Under Reclamation Monitoring: Monitoring Responsibilities
20, 21, and 22.

G-24
BI-1-239

Comments: The language should be reviewed for inconsistency among the responsibilities as written.

p. E-5 – E-6. Under Reclamation Monitoring: Monitoring Methods

G-25
BI-1-240

General Comments on the Section: Provide an adequate description of the purpose and timing for full site reclamation (e.g., after pad development or after well abandonment). Monitoring methods/sample size needs to be practical for the size site that is being evaluated. Types of monitoring should be discussed and decided in the first annual meeting between BLM, Game and Fish and Proponents

23 and 24.

G-26
BI-1-241

Comments: The document should indicate that alternate BLM-approved monitoring methodologies may be employed.

25. Comments: Proponents have no changes to this language.

26. Comments: Proponents have no changes to this language.

p. E- 6 Under Limitation of Human Presence

27. “During the period when an existing well pad is not being fully developed and is subject to temporary site stabilization measures, all existing producing wells on the pad would be connected to the Operator’s liquid gathering system.”

Comments: It may not be economically feasible to connect all pads to a LGS. There may be some pads that are not positioned such that they may be connected to a LGS due to operational, topographical, geographical and vegetative reasons. Phrase “is not being fully developed” is confusing and appears to really refer to “has no drilling activity”.

G-27
BI-1-242

Suggested Language: During the period when an existing well pad has no drilling activity and is subject to temporary site stabilization measures, existing producing wells on the pad as feasible would be connected to the Operator’s liquid gathering system.

- 28. Proponents have no changes to this language.
- 29. Proponents have no changes to this language.
- 30. Proponents have no changes to this language.
- 31. Proponents have no changes to this language.
- 32. Operators would limit all noise associated with production activities to less than 10 decibels above background noise levels, measured 250 feet from the outer edge of each well pad.

N-6
BI-1-243

Comments: Specify how this measure will be monitored and allow for upset conditions. How does the “10 decibels above background noise levels, measured 250 feet from the outer edge of each well pad” compare to recent BLM RD to “[M]aintain noise levels at 75dBa or less measured 30 feet from noise source (drilling pad, compressor, etc.)[.]”? (Source: the ASU Year-Round Drilling Demonstration Project (BLM, 2005b), Appendix A.) Or how does it compare to the current PAPA ROD language: “... and shall not result in an increase greater than 10 Decibels (dBA) above background (i.e. 39 dBA background + 10 dBA = 49 dBA) at the edge of a sage grouse lek[.]”? (PAPA ROD, p. 21)

Suggested Language: Maintain noise levels at 75dBa or less measured 30 feet from noise source (drilling pad edge, compressor, etc.).

- 33. “Operators would utilize flareless completions for all wells within their leasehold unless proven on a case-by-case basis that flareless completions would be unsafe.”

PA-127
BI-1-244

Comments: The WDEQ regulates flareless completions in the PAPA and any BLM comments on flareless completions should reflect the WDEQ’s jurisdiction over this issue.

Suggested Language: Operators would utilize flareless completions for all wells within their leasehold under the WDEQ’s permitting regulations for flareless completions in the PAPA.

- 34. “Operators would require all vehicles used, including those of all sub-contractors and vendors, to have fully functional hospital-grade mufflers.”

Comments: Hospital Grade mufflers are not available for light trucks and cars. Changing the back pressure in the exhaust system could result in unknown and

unwarrantable changes to the manufacturer's product. It is unreasonable to place a requirement that requires voiding the warranty of a brand new truck or car.

Suggestion: Delete #34.

35. Proponents have no changes to this language.

Suggested Language:

Glossary

Annual: Completing the life cycle in one growing season or single year.

D&C: Drilling and Completions Operations.

Decomposition: The breakdown of dead plant material.

Density: The number of individual plants per unit area.

Diversity: Composed of different plant species.

Erosive Features: Pedestals, flow patterns, rills, gullies, and soil movement.

Erosion: The wearing away of the land surface by rain or irrigation water, wind, ice or other natural or anthropogenic agents that abrade, detach and remove soil from one point on the earth's surface and deposit it elsewhere.

Frequency: The abundance and distribution of plants.

Functioning Ecosystem: The complex of a community of organisms and its environment functioning as an ecological unit.

Ground Cover: The soil cover of plant, litter, rocks, and gravel on a site.

Invasive Species: A species introduced by human action to a location, area, or region where it did not previously occur naturally (i.e., invasive), that becomes capable of establishing a breeding population in the new location without further intervention by humans, and spreads widely throughout the new location.

Litter: Dead plant material that may consist of leaves, twigs, and bark that has fallen to the ground.

Nutrient Cycling: In general, a plant using nutrients in the soil to grow, the plant dies over time and decomposes adding nutrients back into the soil for other plants to use repeating the cycle.

Perennial: Plants persisting for several years usually with new herbaceous growth from a perennating part.

Production: Plant biomass above ground present during a given year.

Reference Area: Areas where natural biological and physical processes are functioning normally.

Representative Reference Site - Each reclamation site will utilize a representative reference site for comparison to measure success of reclamation. A reference site must be undisturbed, similar in vegetative composition, soil structure, slope, and aspect. If possible, the reference site should be adjacent to the reclamation site.

Resilience: Plasticity or able to withstand change. The capacity to absorb shocks from environmental factors while maintaining function.

Stable State: Resistant to erosion.

Sustainability: Capable of being sustained. Two key related concepts are resilience and resistance. Resistance is the likelihood that a system will respond to a disturbance such as drought or pest invasion. A stable system resists large fluctuations in productivity, nutrient losses and other responses to stress. Systems with greater resilience return rapidly and reliably to the original conditions.

Viability: Persistence of a population or species into the future.

Vigor: Active healthy well-balanced growth.

APPENDIX D
PROPONENTS' MITIGATION LETTER TO BLM

April 4, 2007

Dennis Stenger, Field Manager
Bureau of Land Management (BLM)
Pinedale Field Office
P.O. Box 768
Pinedale, Wyoming 82941

Re: Draft Supplemental Environmental Impact Statement (DSEIS) for the Pinedale Anticline Oil and Gas Exploration and Development Project (PAPA), Sublette County Wyoming, Dec. 2006

Dear Mr. Stenger,

Ultra Resources, Inc. (Ultra), Shell Exploration & Production Company (Shell), and Questar Market Resources (Questar), collectively referred to as the "Proponents", propose the following on-site and off-site mitigation components, as commitments to avoid, minimize and mitigate impacts from natural gas development and production activities in the Pinedale Anticline Project Area (PAPA) in accordance with the National Environmental Policy Act (NEPA), 40 CFR 1508.20. This proposal includes and summarizes both the Proponents' original mitigation commitments and additional mitigation including a \$36 million dollar mitigation and monitoring fund. The net costs to operators for implementing these combined measures will exceed \$1 billion. Proponents' ability to fulfill these commitments is directly tied to surface access and pace of development as described in the Proponents' Proposed Action.

Proponents' primary emphasis is on avoidance of impacts and *on-site* mitigation of any unavoidable impact and Proponents also commit to off-site mitigation. This proposal is unlike any other onshore natural gas development proposal in its effort to minimize on-site disturbances to wildlife, livestock, habitat and air while providing benefits to local and state communities.

Proponents' Original Mitigation Commitments:

- Directional drilling - 600 pads to drill over 5,000 total wells (100 fewer pads than the No Action)
- Year-round concentrated drilling and completion activity
- Interim reclamation of well pads
- Liquids Gathering Systems to reduce traffic
- Computer Assisted Operations
- Tier 2 equivalent rig engine emissions by 2009
- 10-year plan and annual meetings with BLM and appropriate state agencies

Proponents' Additional Mitigation Commitments:

- Mitigation and monitoring fund
- Mitigation, monitoring, continued research, and Performance Based Objectives with threshold
- Voluntary suspension of certain leases on the flanks of the Pinedale Anticline
- 80% rig engine NOx reduction from 2005 levels by year end 2010 with a Q3 2007 ROD

Mr. Stenger

Benefits:

- Minimizes surface disturbance and habitat fragmentation
- Preserves large, contiguous undisturbed blocks of habitat and migration corridors
- Provides interim, and earlier, well pad reclamation
- Substantially reduces air emissions
- Substantially reduces traffic and human activity for the Life of Project
- Stabilizes development activity and year-round workforce
- Facilitates community forecasting for planning purposes
- Develops fully the natural gas resource

The benefits to wildlife, livestock, habitat, air quality and local communities of this proposal are substantial. The Proponents' comprehensive long-term development plan will result in the most beneficial long-term protection of the wildlife and habitat while enabling the efficient, full development of the PAPA natural gas resource.

In order to mitigate potential impacts identified during the NEPA process, and in addition to the net cost Proponents will incur by implementing the Proponents' committed mitigation, Proponents have committed to establishing the Pinedale Anticline Operators' Mitigation and Monitoring Fund (Fund). This Fund will provide assurance that financial support is available for mitigation and monitoring for the life of the project. The sole purpose of the Fund is to provide funding for monitoring and mitigation impacts directly related to Proponents' activities in the PAPA SEIS project. Proceeds from the Fund can be used both on-site and off-site in the general PAPA area for air quality monitoring, wildlife, livestock, vegetation and reclamation research, analysis, monitoring, mitigation and agencies' PAPA-project essential full time equivalent (FTE) positions as a result of PAPA activities. Proponents envision that the Fund will support as components of wildlife mitigation:

- basic habitat enhancements for improvement of habitat function both on-site and off-site and
- protection of key migration routes and / or acreage that directly benefit wildlife.

The funds referenced in this correspondence are aimed at mitigation and monitoring activities. It is impossible to accurately predict what types of actions would warrant the use of these monies, but compliance activities do not fit the intended purpose of the fund.

Proponents will provide \$4.2 million as the initial contribution after BLM issues the SEIS Record of Decision (ROD) to begin mitigation and monitoring efforts immediately. Proponents would make future annual contributions to the Fund based on the pace of development. Estimated annual average contribution based on the Proposed Action is \$1.8 million per year with an expected total contribution based on the Proposed Action of approximately \$36 million. This offer is the only commitment for Proponents' contributions to the Fund.

Please find attached a more detailed explanation of these committed measures.

Respectfully submitted,



W. R. Picquet
Vice President - Operations
Ultra Resources, Inc.



JR Justus
Manager - US Onshore Assets
Shell Exploration & Production Co.



J. P. Matheny
Vice President
Questar Market Resources

Attachment

Detailed Explanation of Committed Measures

Background

According to the Energy Information Administration, the PAPA is the second largest natural gas field in the nation with an estimated 20 to 25 trillion cubic feet (TCF) of recoverable natural gas. Unlike Jonah, or any other natural gas project at this stage of development in Wyoming or on-shore in the western continental United States, the Proponents have intentionally designed the PAPA comprehensive development and production proposal to avoid, or in the alternative lessen and minimize, any on-site impacts to wildlife, livestock, habitat and air while improving the socio-economic health of the local and state communities.

The Proponents have developed this plan based on recommendations from federal and state agency wildlife biologists. Year-round access lessens both the development period by up to 50% in areas with seasonal restrictions and impacts of human presence on wildlife populations over the life of the project. Temporary year-round access is necessary for this Proposal to be economically feasible.

Mitigation

Concentrated, Directional Drilling and Completion

The Proponents' plan minimizes surface fragmentation during the development phase by utilizing directional drilling from multi-well pads. By operating large multiple-well pads year-round, the Proponents are able to complete operations on individual pads much sooner, which in turn will allow pads to be reclaimed up to a decade earlier compared to multi-well pads developed under seasonally restricted stipulations. Multi-well pads also decreases the amount of disturbed acreage per well compared to what is needed for single well pads.

As the resource is currently understood, Proponents estimate it would take 4,400 additional wells for full development. Regardless of the number of wells needed to fully develop the field, the Proposed Action commits to no more than 600 pads. According to the No Action Alternative, the 1,800 producing wells on 700 pads would only extract 36% of the recoverable natural gas resource ensuring a request for additional NEPA analysis would occur within the next few years to allow for recovery of the remaining reserves. The impacts associated with the additional NEPA analysis would be in addition to impacts associated with the first 700 pads and the result would be far less beneficial than this Proposal.

Reclamation

The Proponents' plan allows individual pads to be reclaimed up to a decade earlier compared to multi-well pads developed under seasonal restriction stipulations. Proponents commit to the reclamation goal of restoring habitat function as soon as reasonably possible to pre-disturbance levels by restoring wildlife habitat through vigorous site-stabilizing plant growth with a native plant community that is endemic to the area. This community will be diverse in species composition, as well as age classifications, and productivity. Should available seed mixtures, techniques and other applications be available to enhance the productivity and diversity of the reclaimed area used by wildlife or livestock, these methods will be pursued. The Proponents will also commit to working with livestock producers on water placement and other methods to balance livestock needs with the need to isolate reclaimed areas for the revegetation. The

Proponents commit that successful reclamation to maintain soil stability and provide habitat function will be measured in stages, as follows:

- a. The establishment of a viable seedling cover within 1 year of initiation of reclamation. Viable seedling cover shall consist of indigenous species and/or ecologically comparable species as approved by BLM habitat experts;
- b. Within 5 years of initiation of reclamation establish at least 50% of indigenous vegetative cover and species composition; and,
- c. Within 8 years of initiation of reclamation establish at least 80% of indigenous vegetative cover and species composition.

By concentrating pad locations and operational activities, as well as engaging in earlier reclamation, the Proponents will leave large blocks of acreage undisturbed and migration corridors available for use by wildlife.

Liquids Gathering System / Computer Assisted Operations

During the production phase, the Proponents commit to substantially reducing the amount of human activity, disturbance and on-site facilities through the use of liquids gathering systems (LGS) and consolidated production facilities, which will result in up to 165,000 fewer truck trips per year when compared to a full development scenario with no LGS. In addition, LGS significantly reduces tank requirements and associated emissions. Questar installed a LGS as mitigation for its 2004 Environmental Analysis. Ultra and Shell are committing to a LGS in the Proposed Action as their mitigation for year-round access. In addition, the Proponents commit to expanding the use of computer assisted operations (CAO) which will substantially reduce the number of trips to pads required for normal operations.

Air Emissions Reduction

As a part of the on-site mitigation commitment, the Proponents are committed to an 80% reduction in rig engine NOx emissions from 2005 levels at the end of the three year period following issuance of the SEIS ROD (42 months). With year-round access, Proponents can identify and retain 'fit for purpose' drilling rigs and economically justify investments on these drilling rigs to reduce NOx emissions.

Additional emission from traffic, tanks (VOC), and compressor engines will be reduced through implementation of LGS, CAO and other technologies.

After the Proponents achieve the rig engine NOx emission goals, compression emissions become the dominant source of NOx. Proponents are studying alternative solutions to reduce these emissions including, but not limited to, electrification of compression horsepower. As an example, in 2008-09 Questar Gas Management will install electric drive compression powered by electricity generated on-site using natural gas until such time as commercial electric power may be available.

Lease Suspension

BLM wildlife biologists and the Wyoming Game and Fish Department have encouraged Proponents to mitigate impacts for wildlife by keeping large, contiguous blocks of habitat undisturbed and available for wildlife. Proponents offer to voluntarily suspend or commit to time-limited No Surface Occupancy (NSO) certain leases or acreage in the flank areas of the PAPA. This voluntary commitment ensures a significant portion of the flanks of the PAPA will

be available as undisturbed habitat for wildlife. The certainty of undisturbed habitat allows for enhanced access for delineation and development activities in certain areas.

Mitigation, Monitoring, Continued Research, Performance Based Objectives

Within one year of the PAPA SEIS Record of Decision (ROD), Proponents commit to developing a comprehensive mitigation and monitoring plan by working with the BLM and Game and Fish to develop an appropriate wildlife threshold / emerging trends matrix.

Proponents commit to continued research and monitoring of mule deer, pronghorn antelope, sage grouse and vegetation on the PAPA and of control groups. Results of this monitoring and other wildlife tracking efforts will be used to identify emerging trends and be used to cooperatively determine what mitigation actions (on-site and / or off-site) should be taken next based on the plan.

Planning

The Proponents commit to provide an annual development plan which will tier from a 10-year rolling forecast of PAPA activity fully describing the future development plans on an ongoing basis. Each year the specific areas of concentrated activities will be determined through joint review of the development plan. The Proponents, the BLM, Game and Fish and DEQ will reach agreement on the final plans early in the calendar year for the following year and tentative plans for the year after to allow sufficient time to plan, permit and execute new construction as required in the summer months. For example, the first quarter 2008 meeting determines 2009 activity and outlines 2010 plans. Each year, the Proponents will collaborate as appropriate to seek opportunities to further tighten the areas required for concentrated activities and reduce the associated impacts. The Proponents, BLM, Game and Fish and DEQ will jointly seek improvements to the development plan to further reduce impacts. During the annual meetings, impacts and mitigation will be evaluated for effectiveness.

Mitigation and Monitoring Fund

In order to mitigate potential impacts identified during the NEPA process, and in addition to the net cost Proponents will incur by implementing the Proponents' committed mitigation, Proponents have committed to establishing the Pinedale Anticline Operators' Mitigation and Monitoring Fund (Fund). This Fund will provide assurance that financial support is available for mitigation and monitoring for the life of the project. The sole purpose of the Fund is to provide funding for monitoring and mitigation impacts directly related to Proponents' activities in the PAPA SEIS project. Proceeds from the Fund can be used both on-site and off-site in the general PAPA area for air quality monitoring, wildlife, livestock, vegetation and reclamation research, analysis, monitoring, mitigation and agencies' PAPA-project essential full time equivalent (FTE) positions as a result of PAPA activities. Proponents envision that the Fund will support as components of wildlife mitigation:

- basic habitat enhancements for improvement of habitat function both on-site and off-site and
- protection of key migration routes and / or acreage that directly benefit wildlife.

The funds referenced in this correspondence are aimed at mitigation and monitoring activities. It is impossible to accurately predict what types of actions would warrant the use of these monies, but compliance activities do not fit the intended purpose of the fund.

Proponents will provide \$4.2 million as the initial contribution after BLM issues the SEIS Record of Decision (ROD) to begin mitigation and monitoring efforts immediately. Proponents would make future annual contributions to the Fund based on the pace of development. Estimated annual average contribution based on the Proposed Action is \$1.8 million per year with an expected total contribution based on the Proposed Action of approximately \$36 million. This offer is the only commitment for Proponents' contributions to the Fund.

Summary

Mitigation, both on-site and off-site, is a substantial cost that the Proponents are committed to bear as part of a comprehensive development plan that includes the temporary relaxation of all seasonal restrictions including, but not limited to, big game and sage grouse within specific concentrated areas as defined by the annual development plan. Raptor seasonal stipulations would be managed under the 2006 voluntary best management practices from the United States Fish and Wildlife Service.

Proponents' mitigation commitment for the PAPA SEIS would supersede all existing commitments for mitigation as well as those identified in the following and any other Decision Records: BLM 2004 [*Finding of No Significant Impact, Decision Record and Environmental Assessment for the Questar Year-Round Drilling Proposal, Sublette County, Wyoming, WY-100-EA05-034*]; BLM 2005 [*Finding of No Significant Impact, Decision Record and Environmental Assessment for the Questar Year-Round Drilling Proposal – Condensate Pipeline Modifications, Sublette and Lincoln Counties, Wyoming, WY-100-EA05-283*]; and BLM 2005a [*Questar Year-Round Drilling Proposal, Addendum Environmental Assessment, WY-100-EA06-04*]. Acreage included in existing habitat enhancement projects that have been initiated pursuant to these and other Decision Records will apply towards the mitigation commitment under a PAPA SEIS ROD.