Response to comments received on 2013-2014 Greater Sage-Grouse Annual Report Pinedale Anticline Project Area

Response to Ultra and QEP:

Under General Comments in letter:

"Simply referencing documents that provide monitoring protocol without complete descriptions of the monitoring methods actually applied makes it difficult to provide any substantive comment on monitoring procedures."

Response: Protocols used for monitoring sage-grouse populations for the Wildlife Mitigation and Monitoring Matrix have been consistent since 2008 and follow the Wyoming Game and Fish Department (WGFD) protocols from the Handbook of Biological Techniques (Emmerich et al. 2007). These detailed monitoring protocols are followed for lek counts, lek searches (aerial and ground) and documenting winter use areas. These protocols are available from the WGFD website: http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/WGFD_BIOTECHNIQUES_BOOK0005730.pdf. Any specific comments on protocols should be addressed to WGFD.

Under Specific Comments in letter:

Page 4, paragraph 5, line 1- Define WYCFWRU and provide a citation.

Response: Wyoming Cooperative Fish and Wildlife Research Unit. This item will be corrected in report.

Page 5, paragraph 3, line 3 - This sentence needs clarification. Is the guidance actually referring to Appendix A, Table 1, Footnote 1 of this report (in which case Appendix B footnote needs to be corrected to Appendix "A") or perhaps to Appendix B in the ROD (in which case it is suggested to add reference to the PAPA ROD)? No relevant footnote was noted in Appendix B of this report. UQ believes that occasional searches for new/moved leks were actually recommended during the COOP review. The precise reference for this action needs to be included in the report.

Response: The footnote is located in Appendix B of the Record of Decision (ROD) for the Final Supplemental Environmental Impact Statement (SEIS) for the Pinedale Anticline Oil and Gas Exploration and Development Project (BLM 2008), this will be clarified. The Wyoming COOP recommended lek searches be part of the monitoring protocol. This item will be clarified and a citation will be added to the report.

Page 6, paragraphs 3 & 4 and Page 7 paragraphs 1, 2, & 3 - Since thresholds are specific to decreases in treatment area numbers, the only relevant changes in reference area numbers would be decreases as well. Increases in reference area numbers are not combined with decreases in treatment area numbers to provide a greater difference. For example, if a treatment area complex had a 1% decrease while the reference area had a 31% increase no threshold would be met. Since the combined reference area had an

increase this year, simply report the percent declines in treatment area leks. Using this corrected protocol reveals that no mitigation threshold for this variable was reached, and this requires correction throughout the report.

Response:

Reference areas represent control populations that are currently not experiencing energy development. Reference complexes were selected in the Matrix to represent patterns in male lek attendance similar to those anticipated in the development area. Accounting for annual increases and decreases for both the development and reference area complexes provides the most complete and accurate representation of annual changes in lek attendance. The Matrix requires a comparison to be made of the total average 2-year change in numbers of males attending lek complexes between the development area and the reference area. The Matrix does not restrict this average 2-year change exclusively to either increases or decreases, therefore, failing to consider both would not be following the requirements set forth in the ROD.

Response to Wyoming Game and Fish Department Comments:

"There was no summary report of the current adaptive management responses to these trigger exceedances listed in the report. We encourage the Pinedale Field Office (PFO) to disclose the current sage-grouse mitigation actions and describe the effectiveness of the current mitigation actions that have been completed…Finally, we encourage the PFO to disclose the next step in determining the need for additional mitigation measures including changes in plans of development for the area".

Response: The SEIS ROD (BLM 2008) provides guidance for when a trigger is met to follow sequential mitigation steps. According to the ROD, onsite mitigation is the first response followed by offsite mitigation. These mitigations are to be monitored and if results are not satisfactory, the process is repeated with another mitigation response until the desired results are achieved or all feasible responses are exhausted. The ROD also states "it is fully anticipated that with multiple mitigation attempts with subsequent monitoring, it will be several years before modification of operations will be considered" (BLM 2008).

At this time, there are no adaptive management responses planned as a result of the sage-grouse trigger being met. The PAPO implemented several onsite sage-grouse mitigation projects in 2014 as per the Pinedale Anticline Project Area Greater Sage-Grouse Mitigation Action Plan (BLM 2014). A list of these mitigation projects is available on the PAPO website. Because these mitigation measures were implemented in the summer and fall of 2014, there has not been sufficient time to monitor their effectiveness.

Response to Coalition of Local Governments:

A. Active Leks

BLM attempted to compensate for sage-grouse movement between leks by stating that if birds move between leks within a complex, the threshold criteria will not be met. BLM, however, improperly limits the range of the sage-grouse and ignores the best available science in so doing.

The result is that BLM has attempted to draw a comparison between the reference area and the development area when sage-grouse are likely moving beyond the limited boundaries of each. In other words, by limiting the size and location of the reference area, the Report artificially increases the chances that an individual sage-grouse will move beyond a lek, the development area, and the reference area. Then, a threshold level of movement from one lek to an area not measured by the BLM will trigger mitigation. Thus, the comparison is not based on all of the relevant factors and leads to an arbitrary decision to implement mitigation. Olenhouse v. Commodity Credit Corp., 42 F.3d 1560, 1574 (10th Cir.1994).

Implementing mitigation is an especially unwarranted action when the number of active leks in a particular area could not be decreased at all without triggering the threshold criteria. For example, there were two active leks in Dukes Triangle Complex in 2007 and in 2013 and 2014 there was one fewer lek which automatically yielded a 50% decrease in active leks (exceeding the 30% threshold). But as mentioned above, it is very possible that these birds not only temporarily dissipated to other leks within the complex, but to the reference area, and to leks outside of the entire PAPA. The BLM may not summarily conclude that these leks are "inactive." As Dr. Rob Ramey concluded, "focusing on comparative lek counts, without taking in the bigger picture of what is occurring in trends across the population, can lead to erroneous conclusions." Rob Roy Ramey, Spatial and Temporal Analysis of Oil and Gas Development, Mitigation, and Greater Sage-Grouse Lek Attendance in the Pinedale Planning Area, Wyoming 1990-2012 (2014) (On file with author).

B. Peak Number of Males

The Report states that there was a 15% decrease in peak males in the development area and an 11% increase in peak males in the reference area indicating that "the development area experienced a 26% greater decline than the combined reference area." Report at 6. But there is no statement or finding in the Report that the 11% increase may be due to the 15% decrease in the development area, or, the greater population.

The Report does not explain how the increases in the reference area should not be attributed to the decreases in the development area. The Report's earlier assumption that if it "could be demonstrated that the birds moved to another lek during the same time period within the same Development Area Complex" will not compensate for movement to the reference area. Report at 5 (emphasis added). Thus, the Report's findings as to Mesa Complex, Dukes Triangle, and Yellowpoint appear to be based on statistical errors that do not represent the PAPA sage-grouse population.

Response:

According to the WGFD, lek complexes are "a group of leks that are relatively close and represent part or all of a single breeding population; they are a cluster of leks within 2.5 km (1.5 mi) of each other, between which male sage-grouse may interchange from day to day." The WGFD designates leks as active or inactive on an annual basis. The definition of an "active" lek is any lek that has been attended by more than one male sage-grouse during the strutting season. Acceptable documentation of grouse presence includes observation of birds using the site or signs of strutting activity (Emmerich et al., 2007).

Local studies have demonstrated lek site fidelity in females (Lyon 2000) and limited movement of females outside of lek complexes (KC Harvey 2009). Another local study suggested dispersal and displacement of adult males and low recruitment of young male sage-grouse could be contributing to population declines in developed areas (Holloran 2005). While another study in this area found yearling male sage-grouse avoided leks near the infrastructure of natural gas fields when establishing breeding territories and moved to leks further away from development (Holloran et al., 2010).

The PAPO recognizes sage-grouse move over the landscape and that it is possible sage-grouse are moving among leks within a complex or even between the treatment area and the reference area. In order to monitor sage-grouse numbers and potential movement within a complex, all leks are counted and lek searches are performed in suitable habitat within each complex to search for any new leks following WGFD protocol (Emmerich et al., 2007) However, we acknowledge with this type of monitoring it is difficult to definitively determine if sage-grouse are in fact moving between the treatment area and the reference area. It should, however, be noted that the Matrix does not require monitoring movement of sage-grouse between the treatment area and the reference area but rather solely monitoring the number of active leks and the peak number of males attending leks in each area.

In the 2013 "Sage-grouse Job Completion Report Upper Green River Basin Working Group Summary" prepared by Dean Clause, an analysis was conducted to compare sage-grouse trends from leks within or near gas field development verses leks away from gas development activities. The group of leks referred to as "disturbed" were those leks within or near (roughly one-mile) active gas field development within the Pinedale Anticline Project Area and the Jonah Field. The overall trends in the average number of peak males per lek for occupied leks showed similar trends between disturbed leks and undisturbed leks from 1997-2014 (WGFD 2013). If a significant number of male sage-grouse were moving from disturbed leks to undisturbed leks one would expect the data to show significant increases in male numbers on undisturbed leks relative to declines on disturbed leks. The data demonstrates these increases did not occur.

The Matrix parameters outlined in the SEIS ROD (2008) and monitoring methods have been developed, analyzed, disclosed and validated by panels of technical experts and the public on more than one occasion. The PAPO and BLM are following these parameters and recommended monitoring methods and are not creating new standards. For sage-grouse, the Matrix identifies those lek complexes that will be monitored for changes in both the treatment area and reference area, establishes the baseline population numbers that will be used, and provides specific thresholds that if surpassed require

mitigation to be implemented. These parameters set forth in the Matrix were analyzed and approved in the SEIS ROD (2008) after extensive coordination with the State of Wyoming, the WGFD, the Operators and the BLM. The Matrix and associated monitoring was analyzed again in 2010 by a third party review in coordination with the Wyoming COOP and public involvement. Several panels of expert scientists, with substantial experience in wildlife ecology, were tasked with reviewing the Matrix and monitoring methods being used by the PAPO. The purpose of this review was to analyze the parameters in the Matrix and to assess if current monitoring methods were adequate to detect changes in wildlife populations as outlined by the parameters of the Matrix. As a result of recommendations from the Wyoming COOP review and public comment, Adaptive Management was used to modify sections of the Matrix and several changes were implemented to wildlife monitoring methods to ensure methods were adequate to detect if Matrix thresholds have been exceeded.

The basis of mitigation responses according to the ROD (BLM 2008) is to "proactively react to emerging undesired changes, specifically declines in populations, early enough to assure both effective mitigation responses and a fluid pace of development over the life of the project. In that regard, this process is designed to provide certainty to the affected agencies and the public that impacts to wildlife will be addressed before consequences become severe or irreversible by monitoring changes and responding early." In this respect, if sage-grouse numbers go down within the treatment area and exceed a Matrix threshold, mitigation will be implemented, regardless of the mechanism that resulted in lower numbers.

C. Noise Thresholds

Sage-grouse are documented to tolerate, and even showed no signs of behavior variation, when noise levels were increased by 30 dBA above a background of 35 dBA. Jessica L. Blickley, et al. Experimental Evidence for the Effects of Chronic Anthropogenic Noise on Abundance of Greater Sage-Grouse at Leks, Conservation Biology, Volume 26, No. 3, 461-471 (2012). Thus, suggesting 49 dBA sourced by a BLM study from 2000 does not appear to be based on the best available science.

Furthermore, ambient levels should not be determined before 7 a.m., but should instead be averaged over a 24 hour period to reflect the highest and lowest sage-grouse tolerances. The Report also does not account for the location of sage-grouse leks, noise sources, geography, and wind direction.

The average library operates at 30 dBA , a regular human conversation generally occurs at 60 dBA, rural areas are within 39-44 dBA, and the Environmental Protection Agency sets noise levels for pristine wilderness areas at 35 dBA. See Protective Noise Levels, Condensed Version of EPA Noise Levels Document, 8, Figure 4 (Nov. 1978). No human activity, even whispering at the edge of a Lek, could meet these standards if the BLM continues to use the 10 dBA increase for anthropogenic noises.*

Response: These comments are beyond the scope of this report. A separate noise report is available on the PAPO website. The PAPO will solicit public comment on this report and comments regarding noise monitoring and mitigation should be submitted at that time. Please contact the PAPO with any further questions regarding the noise report and when comments will be accepted.

D. Contradicting Studies Must be Addressed

Dr. Ramey recently completed a study of the effects of oil and gas development on sage- grouse in the PAPA (Ramey, 2014). Dr. Ramey studied more than 100 years of data as well as recent mitigation efforts used to offset the perceived impacts of oil and gas development to sage-grouse in the PAPA. Dr. Ramey concluded that "[d]espite predictions from earlier studies, data from 1990 to 2012 do not indicate a Sage-grouse population decline or widespread lek abandonment near oil and gas operations in the [PAPA]." Ramey at 1. Ramey was particularly concerned with other studies that reported decreased lek attendance – identical to the force of the Report offered by BLM. See (Lyon 2000; Lyon and Anderson 2003; Holloran 2005; and Holloran 2010). The most often cited study predicted sage-grouse population declines of 8.7 to 24.4% annually in the PAPA. (Holoran 2005). Dr. Ramey's study found an increase in sage-grouse attendance in both disturbed and undisturbed leks but also found that the number of leks in the PAPA fluctuated from year to year (Bush et al. 2010). These findings starkly contrast against BLM's findings that sage-grouse have decreased throughout the PAPA.

BLM must address this apparent divergence from recent studies. Utah Envtl. Cong. v. Richmond, 483 F.3d 1127, 1136 (10th Cir. 2007) ("[W]e may not affirm an agency decision based on reasoning that the agency itself never considered."). There appears to be readily available and contradicting information that the BLM has not considered and before it offers its decision as to any mitigation, the BLM must address these findings in the Report.

It also appears that BLM has selected 2007 as the appropriate baseline without any analysis or disclosure of the rationale for this decision. Establishing a population trend on the basis of a single year does not accurately portray year-to-year variations and thus artificially distorts current sage-grouse numbers. This is especially important since BLM's decision to implement mitigation depends on the sage-grouse trend. Thus, BLM should instead use a multi-year average or even more preferably, an analysis similar to Dr. Ramey's. These methods will produce a more complete picture of the PAPA sage-grouse population.

Response: A recent analysis comparing disturbed and undisturbed leks in the Pinedale Region was completed by WGFD. In the 2013 "Sage-grouse Job Completion Report Upper Green River Basin Working Group Summary" prepared by Dean Clause, an analysis was conducted to compare sage-grouse trends from leks within or near gas field development verses leks away from gas development activities. The group of leks referred to as "disturbed" were those leks within or near (roughly one-mile) active gas field development within the Pinedale Anticline Project Area and the Jonah Field. The overall trends in the average number of peak males per lek for occupied leks showed similar trends between disturbed leks and undisturbed leks from 1997-2014. The significant difference documented between the two data sets is associated with the proportion of active and occupied leks. The Disturbed Leks show activity levels declining from an average of 83% (1997-2001) to 43% by 2014, a decline of 40 percentage points in active leks. The Undisturbed Leks show activity levels changing very little with an average of 80% (1997-2001) to 78% by 2014 (a decrease of 2 percentage points in active leks). In addition, a much higher proportion of leks are currently unoccupied (abandoned or destroyed) within or near the PAPA and Jonah gas fields (Disturbed Leks) at 43% compared to 9% outside (undisturbed leks) the PAPA and Jonah as fields (WGFD 2013).

The Matrix parameters outlined in the SEIS ROD (2008) and monitoring methods have been developed, analyzed, disclosed and validated by panels of technical experts and the public on more than one occasion. The PAPO and BLM are following these parameters and recommended monitoring methods and are not creating new standards. For sage-grouse, the Matrix identifies those lek complexes that will be monitored for changes in both the treatment area and reference area, establishes the baseline population numbers that will be used, and provides specific thresholds that if surpassed require mitigation to be implemented. These parameters set forth in the Matrix were analyzed and approved in the SEIS ROD (2008) after extensive coordination with the State of Wyoming, the WGFD, the Operators and the BLM. The Matrix and associated monitoring was analyzed again in 2010 by a third party review in coordination with the Wyoming COOP and public involvement. Several panels of expert scientists, with substantial experience in wildlife ecology, were tasked with reviewing the monitoring methods being used by the PAPO. The purpose of this review was to analyze the parameters in the Matrix and to assess if current monitoring methods were adequate to detect changes in wildlife populations as outlined by the parameters of the Matrix. As a result of recommendations from the Wyoming COOP review and public comment, Adaptive Management was used to modify sections of the Matrix and several changes were implemented to wildlife monitoring methods to ensure methods were adequate to detect if Matrix thresholds have been exceeded.

The year 2007 was chosen as a baseline for sage-grouse as agreed upon by BLM and Cooperators for the Wildlife Monitoring and Mitigation Matrix in the ROD (BLM 2008). Because the ROD was signed in 2008, it was decided to use 2007 as the baseline year. When analyzing peak number of males, a running two-year average is used to compare numbers of male attending development area lek complexes compared to reference area lek complexes.

According to the ROD (BLM 2008), the basis of mitigation responses is to "proactively react to emerging undesired changes, specifically declines in populations, early enough to assure both effective mitigation responses and a fluid pace of development over the life of the project. In that regard, this process is designed to provide certainty to the affected agencies and the public that impacts to wildlife will be addressed before consequences become severe or irreversible by monitoring changes and responding early." In this respect, the decision for mitigation has been outlined in the ROD (BLM 2008). If sage-grouse numbers go down within the treatment area and exceed a Matrix threshold, mitigation will be implemented.

Literature Cited:

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