EPA Comments 5/15/15
Greater Chapita Wells Air Quality Technical Support Document and Proposed Controls

Thank you for the opportunity to review and comment on the Draft Air Quality Technical Support Document (AQTSD) and proposed controls and mitigation for the Greater Chapita Wells Project. Our primary concern is related to the potential for the project to contribute to existing ozone concerns in the Uinta Basin. We also note that the AQTSD documents potential impacts to visibility and nitrogen deposition. Our additional detailed comments are also discussed below.

Ozone Impacts

Ozone levels in the Uinta Basin are a known and serious concern. Even following two mild winters, the three-year design value (2012-2014) for the area is still 77ppb at the Ouray monitor. 8-hour ozone concentrations in 2013 reached values as high as 141 ppb at the Ouray monitor. This concentration corresponds to an Air Quality Index value of 211, and is categorized as "Very Unhealthy." Given the existing compromised airshed condition, any project-specific direct and indirect impacts to ozone levels in the Uinta Basin should be avoided. According to the far-field modeling conducted for the project using the ARMS platform, project-specific impacts to ozone in the Uinta Basin are anticipated to be approximately in the range of 1.5 ppb to 5.9 ppb, depending on the processing method used for the model results. Although there are always uncertainties associated with air quality modeling (as discussed below), these results indicate that the project is likely to impact ozone levels.

The ozone modeling results, in an existing compromised airshed, indicate a need for additional mitigation measures to prevent adverse ozone impacts. Based on the list of ACEPMs, EOG is already planning to implement many beneficial emission control measures. In particular, we support the operator's commitment to reducing existing and future emissions through installation of a liquids gathering system (LGS) to connect approximately 50 percent of existing and new wells in the project area. However, further opportunities exist to reduce emissions from the proposed new wells, and to reduce existing field-wide emissions to offset the proposed additional development. For example:

- Tier 4 engines for drill rigs and hydraulic fracturing pump engines at the outset of the project – significant reductions may be achieved for not only NO_x, but $PM_{2.5}$ and volatile hydrocarbons as well.
- Require further utilization of vapor recovery, rather than flaring or utilizing combustors.
- Elimination of any existing evaporation ponds and requiring other means of storage and disposal than evaporation for new development.
- Retrofit all existing pneumatic controllers to meet the standards established for pneumatic controller affected facilities that are constructed, modified or reconstructed on or after October 15, 2013, as specified in 40 CFR 60, Subpart OOOO Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (as is required by Utah DAQ R307-502-4).
- Consideration of non-gas driven (no bleed) pneumatics and potential opportunities for power supply for such devices through renewable resources for both existing and new development.
- Control of VOC emissions from existing tanks in the project area.
- Control of VOC emissions from all new tanks regardless of potential to emit.
- Require existing and new three-way oil/water/gas separators to be controlled via combustor or otherwise reroute vapors to sales lines.
- Require that wells utilize plunger lift systems (or otherwise automated systems) to minimize potential for fugitive emissions from well pressure fluctuation and liquid accumulation within the well.

- Directed Inspection & Maintenance program – scope and frequency could be negotiated.
- Require bottom filling of tanker trucks to reduce fugitive emissions.
- Reduce the pace or density of proposed development.

As you know, the EPA's comments and rating on the DEIS must be based on the information provided for public review. Given the existing compromised condition of the airshed, the modeled potential for adverse impacts to ozone would likely result in an unfavorable rating from EPA without substantial additional mitigation. Further, given the modeling results and the existing airshed condition, the EPA believes it will be difficult for the BLM to affirm that they are managing the public lands in a manner that will protect air quality in approving a project that results in a substantial increase in emissions. We recommend that BLM consider additional ways to compensate for the proposed action by further reducing emissions from EOG's existing activities in the field in addition to further reducing proposed action emissions. It will be critical to substantiate an assumption that the mitigation measures or reductions to the pace or density of development would reduce potential ozone impacts through an emissions inventory comparison and/or revised modeling analysis.

Near-Field Air Quality Analysis

The RTAG was provided an opportunity to review a "Pre-Protocol" document for near-field modeling for the Greater Chapita Wells project in early 2014. The EPA provided comments and recommendations on the methodology used for the near-field air quality modeling in a comment memo dated February 18, 2014. Although the Pre-Protocol indicated that a Chapita Near-Field Modeling Protocol would be developed, the RTAG never received such a document, nor did we receive a response to comments on the Pre-Protocol.

Unaddressed Comments Regarding Modeling Methodology:
In our comments on the Pre-Protocol, we noted that the methodology for the air quality analysis did not align with EPA guidance and sufficient information was not provided to support some of the assumptions. Some components of the air quality analysis we had concerns with included:

- **Inappropriate or non-supported meteorological data:** Meteorological data from 2005 to 2009 was used for the near-field analysis. EPA guidelines recommend meteorological data from the most recent, readily available 5-year period. Other 5-year periods can be acceptable as long as the period is spatially and climatologically representative of the conditions in the area of concern. Therefore, we recommended that future versions included a discussion explaining why this 5-year period was utilized and how this period represents the spatial and climatological (temporal) conditions. Otherwise, we recommended a more current meteorological time period.
- **Inappropriate use of the Ozone Limiting Method (OLM) for NO_2 Air Quality Analysis:** While the modeling used the OLM option and meteorological data from 2005 to 2009 for the NO_2 air quality modeling, hourly ozone concentration data were based on years from 2009 to 2012. Ozone data that is concurrent with the meteorological data period is required for modeling NO_2 using the OLM option because this option is dependent on the amount of ozone for the conversion of NO to NO_2. As a result, the availability of ozone data should have been a factor in determining the appropriateness of the meteorological data period, or considering whether other configuration options should have been selected for modeling NO_2 more accurately.
- **Model scenarios do not sufficiently account for emissions from Liquid Gathering Systems (LGS):** According to the AQTSD, emissions from the LGS central facilities were not modeled in the air quality analysis because LGS central facilities were analyzed under separate EAs. Our review of the prior EAs found that the LGS analyses did not include near-field modeling to quantify impacts from the central facilities, so there are no modeling results available to be

incorporated into the EIS. Therefore, we recommended that the air quality analysis for this EIS include all direct and indirect emissions from the proposed action.

Based on the information included in the Pre-Draft Environmental Impact Statement (PDEIS) Air Quality Technical Support Document (AQTSD) and appendices, it does not appear that the areas listed above were addressed appropriately.

Unexpected Changes to Near-field Modeling Approach:
It appears that some components of the near-field modeling approach and AQTSD do not match what was presented in the Pre-Protocol [dated December 2013] reviewed by the technical workgroup, including:

- **Modeled exceedances were not disclosed:** Page 1 of the Protocol states that exceedances of the NAAQS will be disclosed in addition to violations of the NAAQS. In our previous comments, we agreed that exceedances of the NAAQS should be disclosed and also recommended that potential mitigation measures be based on modeled exceedances of the NAAQS in addition to violations of the NAAQS because modeled exceedances are potential indicators of adverse air quality impacts. However, the AQTSD and appendices do not disclose any modeled exceedances, only violations of the NAAQS.
- **Emissions from construction were not modeled:** Page 4 of the Protocol states that the emission inventory will include construction of new pads and wells as well as production emissions from new and existing wells. However, the AQTSD [page 85] notes that PM_{10} and $PM_{2.5}$ impacts from road and well pad construction were not evaluated. Road and well pad construction will generate the largest emissions of PM_{10} and $PM_{2.5}$, and we therefore recommend including impacts from construction emissions in the analysis.

Near-Field Modeling Scenarios:
Our comments on the Pre-Protocol requested clarification on the model scenarios because it was not clear whether a combined scenario would be modeled that represented the likely maximum emissions scenario. Those comments were provided with the understanding that there would be further opportunities for discussion regarding appropriate combined model scenarios that account for emissions associated with multiple operations occurring simultaneously within the domain. A combination scenario should account for the likely maximum amount of construction, drill rigs and completion equipment, and production within the domain for analysis (a section). Based on the information included in the AQTSD, a near-field modeling combination scenario that accounts for construction, drilling, and production activities occurring simultaneously was not performed. If it is reasonable to assume that multiple development and production activities might happen at the same time within a section, then this could represent a reasonable maximum emission scenario that we recommend using for near-field modeling.

In addition, we note that the AQTSD concludes that the near-field criteria air pollutant impacts are dominated by drilling based on the modeling results (pg. 92). This statement further heightens our concern that a combined scenario including only one drill rig and 16 producing well pads (containing 8 wells each) within a section may not capture the likely maximum emissions. We would expect, with such a large number of wells and well pads within a section, that it would be reasonable to anticipate other wells being drilled and/or completed at the same time on other well pads. Since impacts are dominated by drilling, this is likely to be an important and reasonable maximum emission scenario to consider.

Near-Field Modeling Results:
It is important to ensure that the proper assumptions are reflected in the air quality modeling analysis because the predicted air impacts are strongly dependent on these components and assumptions. Due to the issues described above with the modeling methodology, approach and scenarios, it is difficult to determine the level of certainty in the predicted impacts. Most likely, the air quality impacts associated with this project are potentially under-estimated for NO_2 and particulate matter (PM). Despite the uncertainties, 1-hour NO_2 was modeled at 99% of the NAAQS, 24-hour $PM_{2.5}$ at 76% of the NAAQS and 24-hour PM_{10} at 71% of the NAAQS. Given the lack of confidence in the ability of the model to predict reasonable worst-case impacts, we recommend applying additional mitigation to reduce emissions of these pollutants.

EPA Recommendations:
The EPA recommends that the final AQTSD and DEIS present modeled exceedances in addition to violations. Modeled exceedances are potential indicators of adverse air quality impacts. Therefore, we also recommend that potential mitigation measures be based on modeled exceedances of the NAAQS in addition to modeled violations.

Based on the concerns described above, we recommend revising the modeling protocol, sharing the updated protocol with the collaborating agencies, and then performing additional near-field modeling in order to more accurately represent the project's near-field impacts. If BLM is unable to revise the near-field modeling, we recommend a protective approach that includes the application of additional mitigation measures to address the likely potential for adverse air quality impacts to NO_2 and PM.

Far-Field Air Quality Analysis

Modeling Methodology:
At the time the ARMS platform was completed (June 2014), we understood that the BLM had many potential future uses for the ARMS modeling platform, including use in NEPA analyses as well as various collaborative activities. While we agree that the options selected for the ARMS photochemical grid modeling platform were acceptable at that time, we had made comments on the ARMS Emissions Inventory and requested that additional analyses be completed and included in the final ARMS Report if possible to assist us in understanding the model performance. However, since our comments from June 2014 have not been addressed and additional analyses have not been completed, the level of confidence in the model's ability to predict ozone and AQRV impacts remains uncertain. Therefore, we recommend that BLM continue to control both NO_x and VOC emissions until additional information can be provided to support the accuracy of the model.

We recommend that the AQTSD include a section that discusses the strengths and weaknesses of the modeling platform based on the results of the ARMS Model Performance Evaluation (MPE). We also recommend that this section explain how these uncertainties found in the MPE should be used to interpret the model results. For instance, the ARMS MPE results indicated that the model was biased low for ozone and its precursors. Therefore, it is possible that the predicted impacts are under-estimated given these results. Other performance issues as they relate to modeling high ozone and particulate matter events, modeling ozone and particulate matter precursors, modeling the winter season, modeling deposition, and other areas could be discussed in a similar manner as well. We also note that extensive comments were made by the EPA regarding the Emissions Inventory, however, many of the concerns were not able to be addressed into the this modeling effort. Therefore, we also recommend explaining the implications of these issues regarding the emissions inventory.

AQRV Impacts:
The far-field modeling shows potential for nitrogen deposition impacts as well as visibility impacts to sensitive Class II areas. We recommend that additional mitigation measures be identified to reduce these impacts. We note that the measures suggested above to reduce ozone impacts will also have co-benefits for reducing AQRV impacts.

GHGs and Climate Change

We appreciate BLM providing the draft documents containing a discussion of climate change in Chapter 3 of the ADEIS as well as the calculation of associated GHG emissions, as part of the emissions inventory in the AQTSD, for the Greater Chapita project. We understand that BLM is still drafting the air quality portion of Chapters 4 and 5 of the EIS and would encourage BLM to consider the Council on Environmental Quality's December 2014 revised draft guidance for Federal agencies' consideration of GHG emissions and climate change impacts in NEPA as we believe it outlines a reasonable approach for its analysis of these issues in the EIS.

While the AQTSD calculates the GHG emissions for the proposed project, we recommend that GHG emissions will also be calculated for the no action alternative and the other action alternatives considered to provide helpful information regarding comparisons of GHG emission among alternatives to the decision maker. On page 24 of the AQTSD, the document states that the GHG inventory "is compared to the Utah and U.S. GHG emission inventories in order to provide context for the Chapita Project GHG emissions." However, such a comparison does not appear in the AQTSD. Instead, on page 62, the emissions are compared to emissions from large coal-fired power plants as well as to the emissions of Salt Lake City. We recommend that you do not compare the GHG emissions to state or total U.S. emissions, as this approach does not provide meaningful information for a project level analysis. We recommend that the language on page 24 discussing the intention to perform such an analysis be removed and instead encourage BLM to consider providing a frame of reference, such as an applicable Federal, state, tribal or local goal for GHG emission reductions, and discuss whether the emissions levels are consistent with such goals. We support the comparative analysis that has been provided on page 62, which provides a more meaningful context for project emissions.

As BLM addresses climate change impacts in Chapter 4, we recommend the below specific elements be addressed in the DEIS.

- Use the estimated GHG emissions as a reasonable proxy for climate change impacts when comparing the proposed action and alternatives. In disclosing the potential impacts of the proposed action and reasonable alternatives, consideration should be given to whether and to what extent the impacts may be exacerbated by expected climate change in the action area, as discussed in the "affected environment" section.

- Describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities and disclose the estimated GHG reductions associated with such measures.

The DEIS alternatives analysis should, as appropriate, consider practicable changes to the proposal to make it more resilient to anticipated climate change. EPA further recommends that the Record of Decision commits to implementation of reasonable mitigation measures that would reduce or eliminate project-related GHG emissions.

ACEPM language:

The inclusion of detailed air quality control and mitigation measures in the Record of Decision for Uinta Basin projects, either as ACEPMs or as BLM Air Quality Control Measures, is a relatively new practice. Therefore, we feel it is an area in which there is still plenty of room to learn from past projects. It has recently come to our attention through the mitigation follow-up efforts we have been conducting with the Vernal Field Office on the Greater Natural Buttes project that imprecise wording in these measures can lead to confusion during post-ROD implementation. This confusion can make it difficult for the operator to determine whether they are in compliance with the measures in the ROD, and also difficult for the BLM to enforce those measures. For example, the simple commitment to "use green completions for all well completion activities" resulted in confusion because the term "green completion" is not clearly defined. We recommend that the BLM review and revise the list of ACEPMS and BLM Air Quality Control Measures with this in mind, and we offer our assistance with revisions if it would be helpful.