Appendix H

Regional Ozone Assessment of the PAPA and Other New Sources in the Region

1.0 INTRODUCTION

This Appendix presents an assessment of the potential ozone impacts due to the Pinedale Anticline Project Area (PAPA) sources and other potential new sources in the region. The potential impacts due to PAPA sources alone were not estimated because ozone is a regional problem due to all sources and there are no incremental ozone thresholds to address [e.g., Prevention of Significant Deterioration (PSD) Class I and II area increments]. Clearly, the ozone impacts due to PAPA sources plus all other potential new projects provide a conservative upper-bound estimate of the potential ozone impacts due to PAPA sources alone. The emissions associated with PAPA sources, and other potential new cumulative emissions, were added to a 2002 base case emissions scenario. The procedures recommended in EPA's latest (April 2007) ozone modeling guidance were used to evaluate the effects that the PAPA sources, along with other new sources in the region, would have on ambient 8-hour ozone concentrations. The ozone impacts were evaluated for two PAPA emission scenarios:

- The Proposed Action Alternative (Alternative B) plus other new cumulative emission projects; and
- Alternative C with Phase II Mitigation plus other new cumulative emission projects.

1.1 Background

PAPA Alternative source emissions would include oxides of nitrogen (NO_x), volatile organic compounds (VOC) and carbon monoxide (CO) that are precursors to ozone. Ozone is formed in the atmosphere due to a series of complex chemical reactions primarily involving VOC and NO_x in the presence of sunlight. The highest ozone concentrations typically occur on hot stagnant sunny days, although recent high ozone events have also occurred on cold winter days with snow cover in southwestern Wyoming. The current National Ambient Air Quality Standard (NAAQS) for ozone is defined as the three year average of the fourth highest daily maximum 8-hour ozone concentration with a threshold of 0.08 ppm (or 85 ppb). The state of Wyoming has also adopted a state standard for 8-hour ozone (WAAQS) that is the same as the federal NAAQS. Recent ozone measurements in southwestern Wyoming have raised concerns regarding the area's future attainment status. During 2005, the fourth highest observed ozone concentrations at the Jonah and Boulder monitoring sites in Sublette County, Wyoming were 76 and 80 ppb, which are getting close to the NAAQS. This is of particular concern because the Clean Air Science Advisory Committee (CASAC) recently recommended that EPA should lower the 8-hour ozone standard to 0.070 ppm (70 ppb). On June 20, 2007 EPA proposed to lower the 8-hour ozone NAAQS to the 70-75 ppb range and asked for comments on an appropriate level for the standard or whether values as low as 60 ppb or as high as the current 85 ppb standard should be considered. Thus, the effect of the proposed Project and other cumulative emissions in the region on ozone concentrations needs to be assessed as part of the Pinedale Anticline Project Supplemental Environmental Impact Statement (SEIS).

In the past, ozone impacts due to proposed new sources have been evaluated using the "Scheffe Tables" (Scheffe 1988). The Scheffe Tables consist of a lookup table of maximum potential incremental ozone concentration impacts due to a source based on VOC/NO_x emissions. The ozone increment from the source is added to the maximum measured background ozone and is compared against the ozone NAAQS to determine whether the new source(s) could potentially cause an exceedance of the ozone standard. However, the Scheffe Tables were designed for assessing maximum 1-hour ozone impacts, and their developer (Dr. Richard Scheffe of the EPA Office of Air Quality and Planning Standards) has opposed their continued use, so alternative approaches are needed to address ozone issues in a National Environmental Policy Act (NEPA) EIS.

EPA modeling guidance for 8-hour ozone modeling recommends the use of Eulerian photochemical grid models (PGMs) to address ozone issues (EPA, 2007; 2006; 1999; 1991). This is in contrast to the Lagrangian plume models that are typically used to model the air quality impacts due to a small number of sources. Modeling the chemistry of ozone formation, which is complex and highly nonlinear, requires accounting for all sources of ozone precursors including those from far upwind regions (i.e., transport). PGMs model emissions from all sources (e.g., on-road and non-road mobile, point, area, biogenic and other sources) which is necessary to simulate ozone formation. PGMs divide the modeling domain into an array of grid cells and require three-dimensional meteorological fields, gridded emissions, boundary conditions (i.e., transported pollutants from outside of the modeling domain) and other inputs. PGMs can incorporate state-of-science chemistry, transport, dispersion and deposition processes. To assess the potential impacts from the addition of new emission sources (e.g., the proposed Project and cumulative emissions) using PGMs, two simulations are typically performed:[1] a base case and a scenario where the new emissions are added to those of the base case. The difference in the two PGM simulations is the resultant incremental ozone impact due to the new sources.

There has been a reluctance to use PGMs for NEPA and PSD assessments of air quality and AQRV impacts from a single source or small group of sources due to the higher data (e.g., all sources are modeled) and computational requirements of PGMs. However, for ozone modeling, use of PGMs is recommended by EPA (EPA, 2007; 2001; 1999; 1991) and is the most reliable modeling approach.

1.2 Purpose

The purpose of this Appendix is to document the application of a PGM to estimate the potential ozone impacts due to the PAPA and other potential new sources in the region and compare those impacts with the NAAQS and WAAQS.

1.3 Approach

The approach used to perform the ozone impact assessment for the PAPA in Sublette County is based on a recent ozone assessment of the Moxa Arch Area Infill Project (BLM, 2007) with a few major updates. The Moxa Arch ozone modeling assessment used the Comprehensive Air Quality Model with extensions (CAMx; www.camx.com; ENVIRON, 2006) and a 2002 36/12/4 km modeling database adapted from the modeling performed by the Western Regional Air Partnership (www.wrapair.org; http://pah.cert.ucr.edu/aqm/308/index.shtml; Tonnesen et al., 2005; 2006). The major updates for the Pinedale Anticline Project ozone assessment were as follows:

- The emissions for the PAPA and other nearby projects were updated to incorporate current information; and
- The CAMx modeling results were post-processed using the new EPA Modeled Attainment Test Software (MATS) tool to assessment the ozone impacts of the Pinedale Anticline Project and other new sources in the region.

The following sections describe the ozone modeling approach and results in more detail.

[1] Note that some PGMs incorporate source apportionment as a diagnostic probing tool that can track the ozone formation due to separate groups of sources within a single simulation.

2.0 OZONE MODELING APPROACH

2.1 Model Selection

There are two main photochemical grid models that are currently being used to address 8-hour ozone issues:

- The Community Multi-scale Air Quality (CMAQ) modeling system (Byun and Ching, 1999) developed by EPA that is publicly available with no fee from the CMAS Center (http://www.cmascenter.org/); and
- The Comprehensive Air-quality Model with extensions (CAMx) that was developed by ENVIRON (2006) that can also be downloaded with no fee (www.camx.com).

Both CMAQ and CAMx are current state-of-science models capable of simulating ozone formation due to new sources, such as those being considered in this application. For this study, the CAMx model was selected for the following reasons:

- CAMx includes algorithms for enhancing photolysis rates due to the presence of snow on the ground, which may be important since some of the highest ozone measurements recorded in southwestern Wyoming have occurred in the winter when snow is present;
- CALMET meteorological data can be processed for input to CAMx, whereas CMAQ is designed to run solely off meteorological data from MM5 or WRF – the MM5 and WRF prognostic models have difficulty in simulating stagnant conditions because they try to "organize" the simulated flows, and therefore overestimate wind speeds during periods of light winds. On the other hand, if stagnant observations are input into CALMET they are reflected in the CALMET wind fields;
- CAMx incorporates two-way grid nesting that allows concentrations to feed back and forth between coarse and fine grids, whereas CMAQ only supports one-way grid nesting that just allows concentrations to flow from the coarser to the finer grids, but not vice versa. Thus, CAMx is able to estimate ozone impacts over a larger area more cost-effectively;
- CAMx includes a flexi-nesting feature that allows for the run time interpolation of coarse grid data to finer grids that is not available in CMAQ; and
- CAMx is easier to use and more flexible.

2.2 Selection of a Modeling Period and Development of Modeling Databases

The ozone issue in southwestern Wyoming is complicated by the fact that elevated ozone levels have been recorded in the winter, which is in contrast to most areas whose highest ozone events occur during the summer. Consequently, the concept of an "ozone season" is difficult to define for the region. Therefore an entire year has been simulated in order to be sure to capture all potential high ozone conditions in the region.

The development of an annual PGM database from scratch is quite labor and time intensive. Fortunately, the Western Regional Air Partnership (WRAP) has developed 2002 annual PGM modeling databases for the continental U.S. (Tonnesen et al., 2005; 2006) that can be adapted to assess the potential ozone impacts of the proposed Project as well as the other cumulative emissions sources in southwestern Wyoming, northeastern Utah and northwestern Colorado. Thus, the 2002 annual period was selected in order to leverage the WRAP modeling databases.

2.3 Development of a 2002 Ozone Modeling Database

The WRAP annual 2002 modeling database for the CAMx model was adapted for simulating ozone formation due to emissions from the Project and cumulative emissions in southeastern Wyoming and vicinity.

2.3.1 Modeling Domains and Grid Resolution

The WRAP developed a 2002 modeling database with a 12 kilometer (km) western U.S. modeling domain nested within a 36 km continental U.S. domain (Tonnesen et al., 2005; 2006). For simulating ozone formation from the Project and cumulative emissions in Wyoming and surrounding states, a higher resolution grid is needed, and is more consistent with EPA guidance (EPA, 2007; 2001; 1999; 1991). Thus, a 12/4 km two-way nested grid modeling domain was defined for simulating ozone due to emissions from the Project and cumulative emissions as depicted in Figure 2-1. To define boundary conditions (BCs) for the Project's 12/4 km modeling domain (i.e., the assumed concentrations along the lateral boundaries of the 12 km grid shown in Figure 2-1), a 2002 Base Case simulation was performed for the WRAP 36 km continental U.S. domain and the results were processed to generate hourly BC inputs for the 12/4 km domain (Figure 2-1). The resulting 36/12/4 km modeling domain used is shown in Figure 2-2 with one-way grid nesting between the 36 and 12 km grids and two-way grid nesting between the 12 and 4 km grids. Table 2-1 gives the definitions of the 36/12/4 km grid used in the ozone modeling.

The same vertical layer structure used by WRAP was used in this study (Tonnesen et al., 2005; 2006). The WRAP vertical layer structure consists of 19 vertical layers from the surface to 100 millibars (mb) [approximately 15 km above ground level (AGL)], with a surface layer that is approximately 35 meters (m) thick.

Table 2-1.
Grid definitions used in the Project's ozone modeling based on a Lambert Conformal Conic (LCC) projection with origin at (-97º, 45º) and true latitudes at (33º, 45 º).

Grid	X-Offset (km)	Y-Offset	NX	NY
36 km	-2,736.0	-2,088.0	148	112
12 km	-1,452.0	-192.0	89	86
4 km	-1,192.0	140.0	83	83

2.3.2 Meteorological Inputs

The CAMx meteorological inputs for the 36 km and 12 km grids were based on the WRAP 36 km and 12 km MM5 simulations, respectively (Kemball-Cook et al., 2004). The MM5CAMx preprocessor was used to process and reformat the MM5 output for hourly meteorological inputs into CAMx for the 36 and 12 km grids over the 2002 annual period.

For the 4 km grid, the CALMET model was used to generate wind and temperature fields for layers below approximately 3,000 m AGL. For winds above approximately 3,000 m AGL and other meteorological variables, the 12 km MM5 output were interpolated to 4 km and processed for input into CAMx.

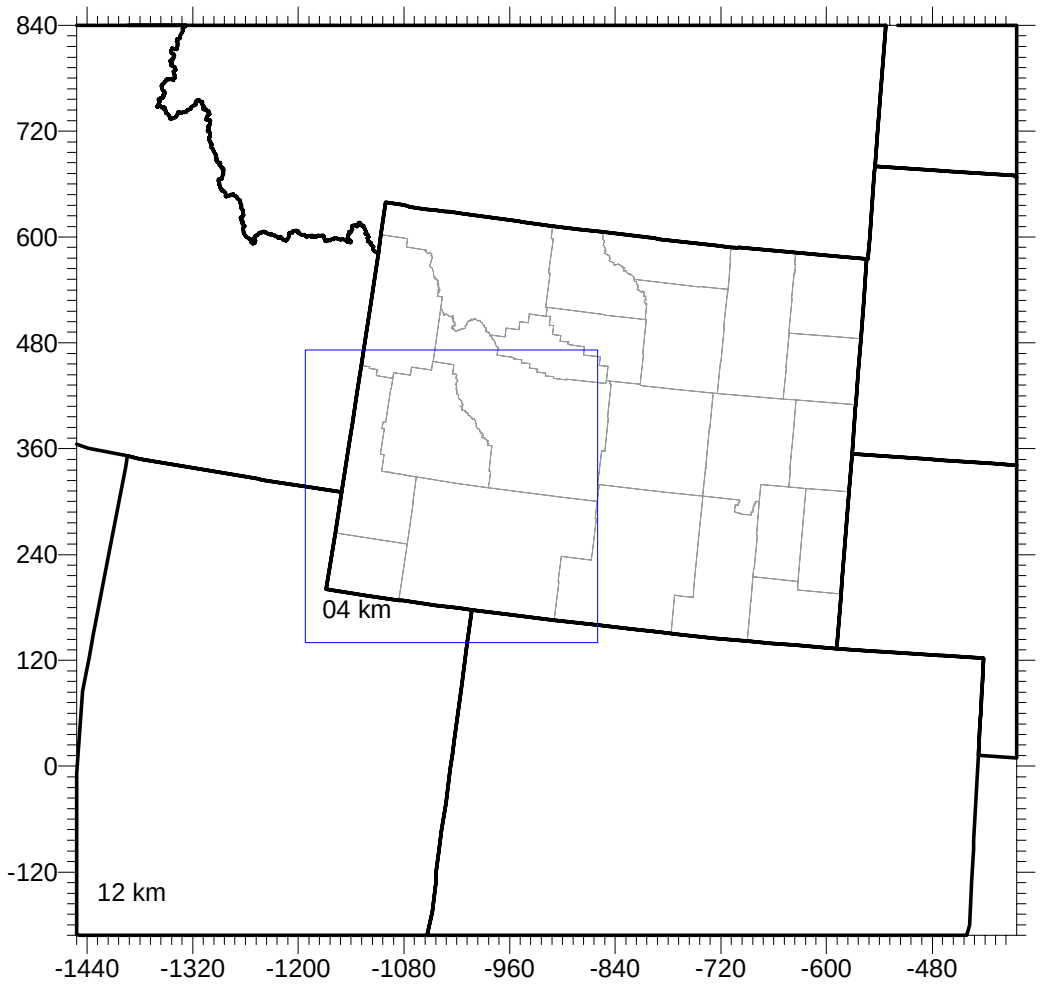

Figure 2-1. 2002 12/4 km two-way grid nested modeling domain used for the Project and cumulative emissions.

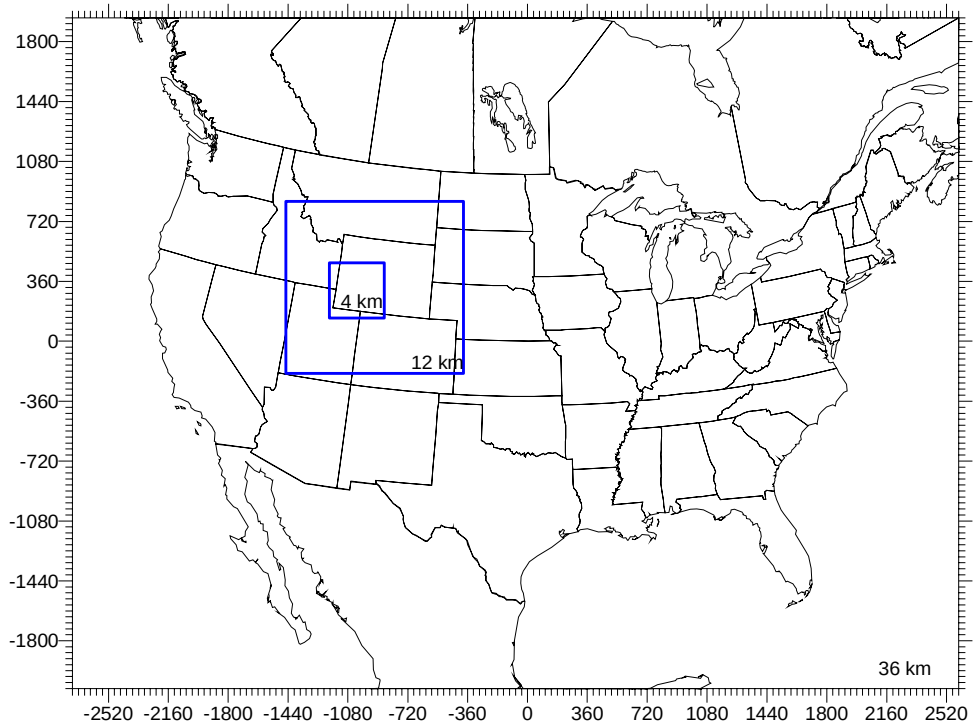

Figure 2-2. 2002 36/12/4 km ozone modeling domain for the Project and cumulative sources; one-way grid nesting was used between the 36 and 12 km grids, and two-way grid nesting was used between the 12 and 4 km grids.

For the 4 km wind field below 3,000 m AGL, CALMET was run in a similar manner as discussed in Section 5 of the Moxa Arch Area Infill Gas Development Project, *Air Quality Technical Support Document* (BLM, 2007). 12 km MM5 data was provided as input into CALMET for the initial guess field; CALMET then applied the diagnostic wind effects and integrated the surface and upper-air meteorological observations into the fields. There were two main reasons that CALMET was used for the 4 km wind fields rather than just interpolating the 12 km MM5 data onto the 4 km grid:

- The MM5 and other prognostic models have difficulty in simulating stagnant conditions, as discussed above. Stagnant conditions that limit vertical mixing are believed to be important for producing elevated ozone in southwestern Wyoming.

- The CALMET model introduces 4 km terrain effects through its diagnostic wind model that would not be present in the 12 km MM5 data.

Figure 2-3 displays the Project's 12/4 km modeling domain and the locations of the surface and upper-air meteorological monitoring sites used in the 4 km CALMET simulation. Also shown in Figure 2-3 are the locations of seven Clean Air Status and Trends Network (CASTNET) ozone monitoring sites used in the ozone model performance evaluation that is discussed in Section 3.

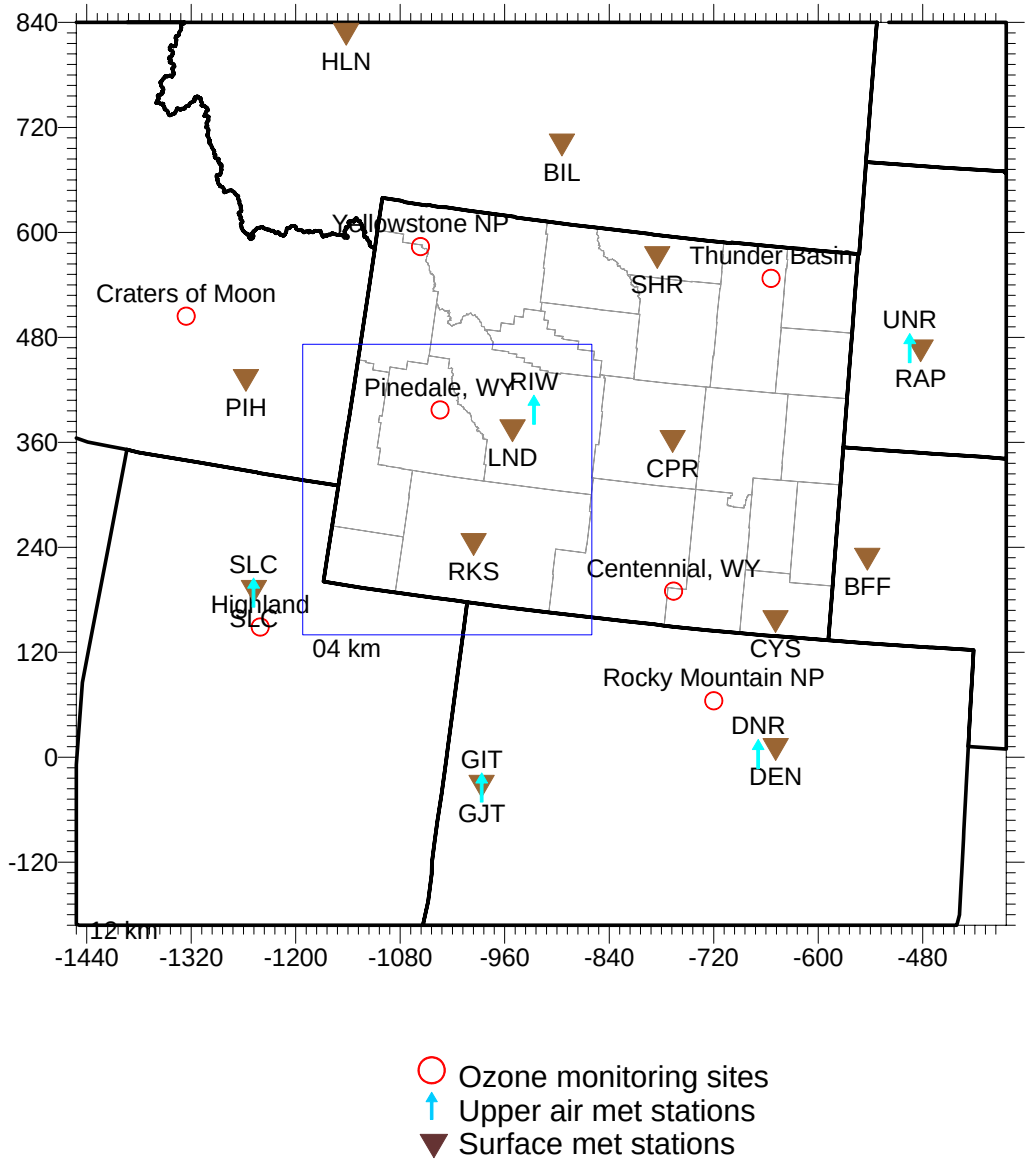

Figure 2-3. 2002 12/4 km modeling domain showing locations of surface and upper-air meteorological monitoring sites and seven ozone monitoring sites.

2.3.3 Emission Inputs

Three emission scenarios were generated for ozone modeling: a 2002 Base Case emissions scenario and two 2002 scenarios with the Base Case plus the Project and Cumulative Emissions. Project emissions for the Proposed Action Alternative (Alternative B) (referred to hereafter as Case 1) and Alternative C with Phase II Mitigation (referred to hereafter as Case 2) were used in the two Project plus Cumulative Emissions scenarios. The Cumulative Emissions were the same in the two Project plus Cumulative Emissions scenarios.

The emission inputs for the 2002 Base Case modeling were based on the WRAP 2002 36 km Base02b emission scenario. The WRAP Base02b 36 km emissions were used for the 2002 36 km CAMx simulation used to define the BCs for the 12/4 km domain. For the 2002 Base Case emissions scenario and the 12 km domain, the WRAP Base02b 36 km emissions were mapped to the 12 km grid and windowed to match the 12 km grid domain. The 4 km 2002 Base Case emissions were obtained by flexi-nesting the 12 km emissions. Flexi-nesting interpolates the surface gridded 12 km emissions to the 4 km grid and treats point source emissions at the grid resolution where the point source resides (e.g., 4 km).

A summary of the PAPA project emissions is shown in Attached Table 1. Cumulative emission inventory sources are shown in Attached Tables 2 through 5. A full description of the methods used for developing the cumulative emission inventory and processing it for input into air quality models may be found in the Moxa Arch Area Infill Gas Development Project, *Air Quality Technical Support Document* (BLM, 2007).

Reasonable Foreseeable Development (RFD) emissions for the Jonah Infill and South Piney NEPA projects were updated for this study (Attached Table 2), and the Wyoming Permitted Source and Reasonably Foreseeable Future Action (RFFA) cumulative emissions inventories developed for the Moxa Arch Infill Project were adjusted so that point sources in the Pinedale and Jonah project areas were not double counted. Attached Tables 3 and 4 show the sources contained in the Wyoming Permitted and RFFA cumulative emission inventories. Attached Table 5 details the County well emissions. Permitted sources in Colorado and Utah lying within the 4 km domain were also included in the cumulative emission inventory. Utah and Colorado Permitted sources are listed in Attached Tables 6 and 7.

Emissions for the Project and cumulative emissions were first gridded to the 4 km grid. Then, they were input into CAMx as point sources with locations at the center of the 4 km grid cell in which they are located. All Project and cumulative point sources were input as point sources in CAMx. A key component in the processing of the Project and cumulative emissions was the speciation of the VOC emissions into the CB05 chemical mechanism. For each source, a source classification code (SCC) was assigned so that it could be cross-referenced to the correct VOC speciation profile in the emissions modeling.

Figure 2-4 displays the 2002 Base Case low-level gridded and elevated point source emissions for the 12/4 km modeling domain. The low-level gridded emissions include on-road mobile, non-road mobile, area, biogenic, and low-level point sources. The fact that the 2002 Base Case emissions were based on the WRAP 36 km emissions is apparent in the low-level emissions. The urban areas of Denver and Salt Lake City are clearly evident in the 2002 Base Case emissions displays.

Figure 2-5 displays the elevated point source emissions for the cumulative emissions inventory used in both the PAPA Case1 and Case 2 scenarios. Since emissions from the Project and cumulative sources were all represented as point sources they can be treated by the high resolution 4 km grid. The low-level gridded emissions for the Project plus cumulative emissions scenario are the same as the 2002 Base Case (Figure 2-4a). Figure 2-6 displays the difference between the Case 1 and Case 2 Project and cumulative emissions and the 2002 Base Case emission scenarios. Emissions from the Pinedale and Jonah Projects are clearly evident, along with cumulative emissions in other project areas. The higher resolution representative of the Project and cumulative emissions is also apparent in Figure 2-6.

2.3.4 CAMx Model Options

CAMx model options specified for this application include the following:

- Use of the latest CB05 chemical mechanism.
- CMC fast chemistry solver.
- PPM advection solver.
- No Plume-in-Grid (PiG) algorithm.
- CAMx was run in the ozone-only mode (that is, the PM chemistry was turned off to speed up the simulations, as there is little feedback from PM to ozone chemistry).

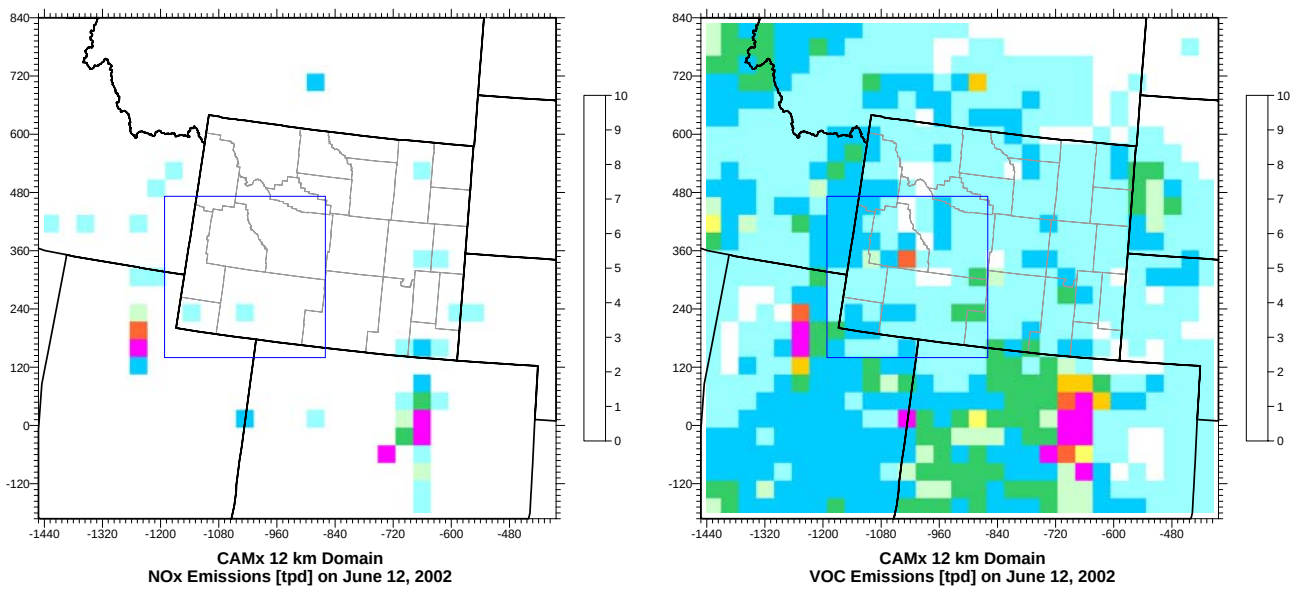

Figure 2-4a. Surface layer gridded NO_x (left) and VOC (right) emissions (on-road and non-road mobile, area, biogenic and low-level point sources) for the 2002 Base Case emissions scenario (tons per day).

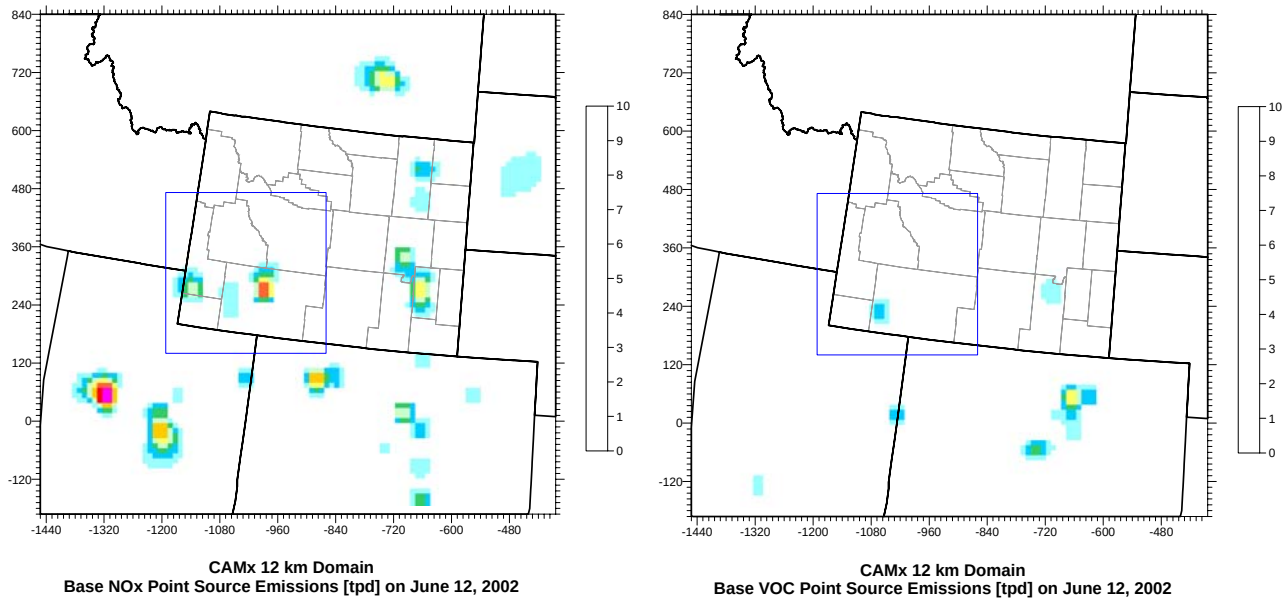

Figure 2-4b. Elevated point source NO_x (left) and VOC (right) emissions for the 2002 Base Case emissions scenario (tons per day).

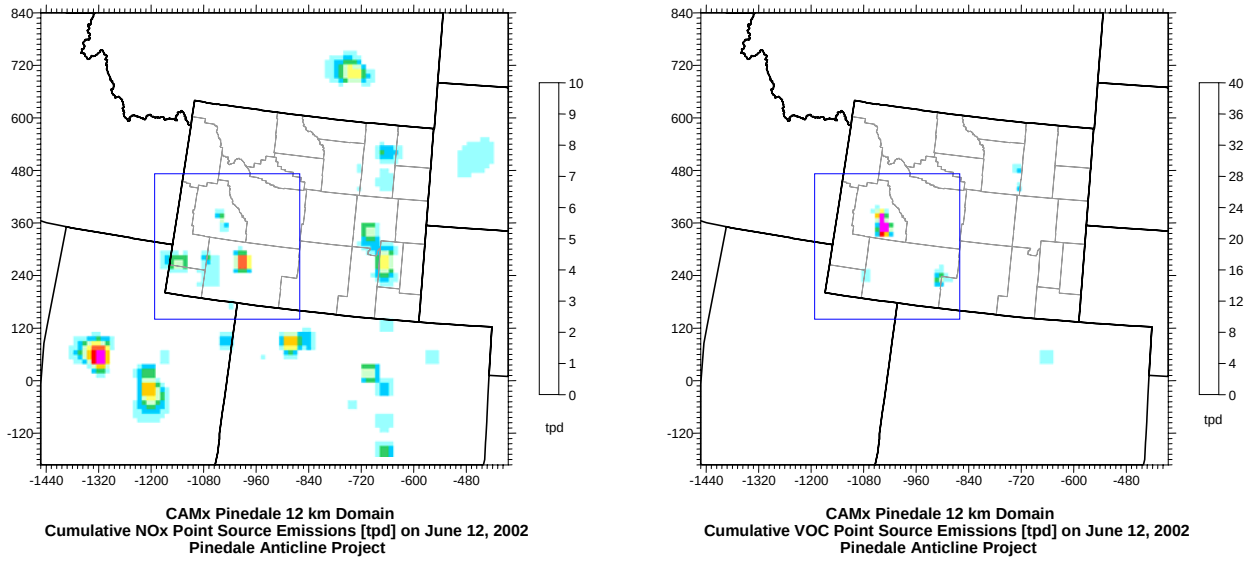

Figure 2-5. Cumulative NO_x (left panel) and VOC (right panel) emissions for June 12, 2002 (tons per day).

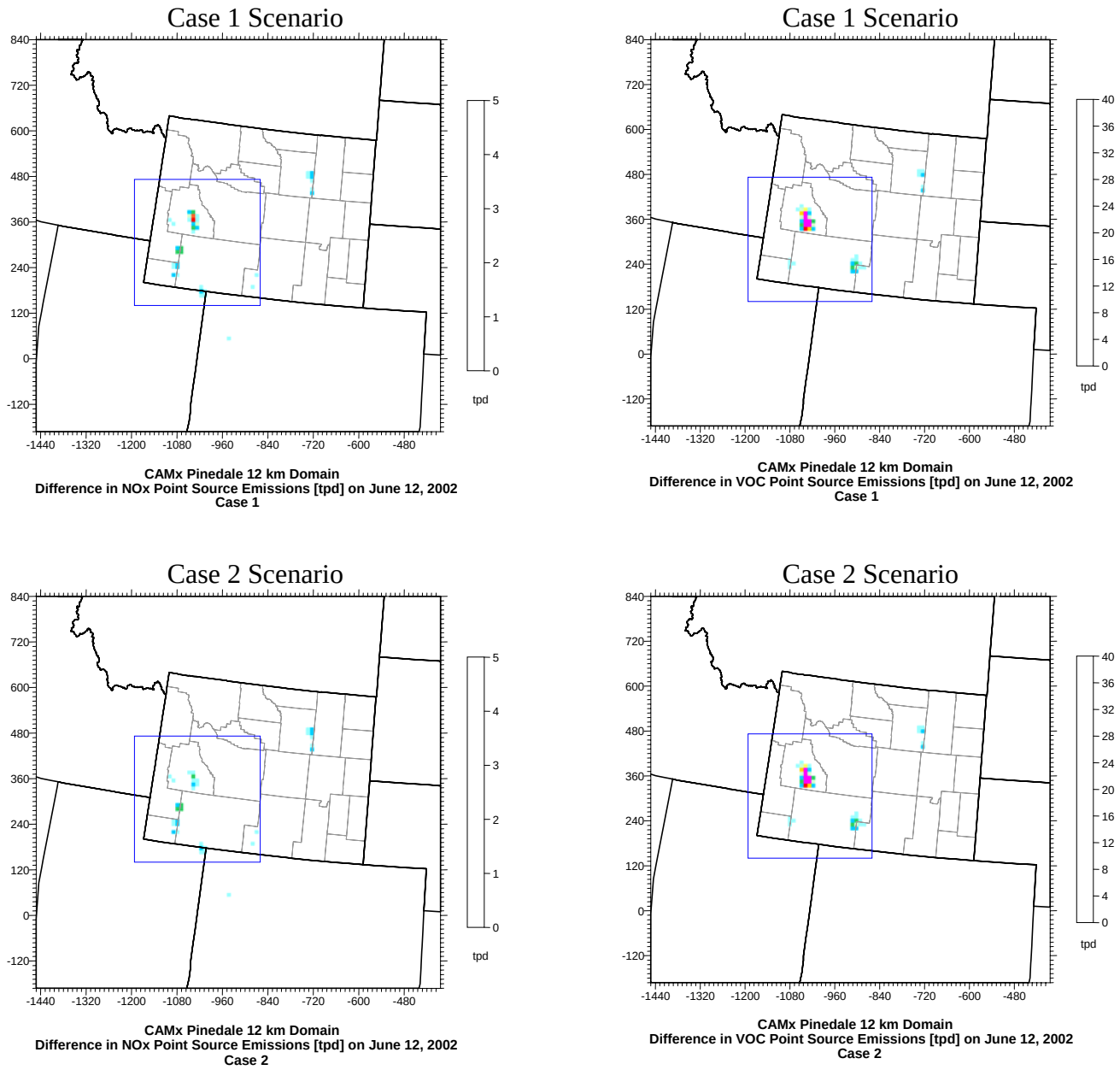

Figure 2-6. Differences in elevated point source NO_x (left panels) and VOC (right panels) emissions for the Project plus Cumulative minus the 2002 Base Case emissions scenario (tons per day) for the PAPA Case 1(upper panels) and Case 2 (lower panels) emission scenarios.

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3.0 2002 BASE CASE MODELING RESULTS

A 2002 12/4 km CAMx Base Case simulation was performed using the hourly boundary conditions (BCs) generated from the 2002 36 km continental U.S. CAMx and a model performance evaluation was conducted.

3.1 Comparison of Modeled versus Observed Peak 2002 Ozone Concentrations

The ozone standard is expressed as the three-year average of the fourth highest daily maximum ozone concentration at a monitor. Consequently, the model's ability to predict the highest ozone concentrations at an ozone monitor is of particular concern, and the focus of the evaluation should be on the fourth highest 8-hour ozone concentrations. Figures 3-1 and 3-2 display the spatial distribution of the fourth highest model-estimated daily maximum 8-hour ozone concentration during the 2002 modeling year on the 4 km and 12 km modeling domains, respectively. Also shown in Figures 3-1 and 3-2 are the fourth highest observed daily maximum 8-hour ozone concentrations that are plotted at the location of the monitoring site. The model-estimated fourth highest daily maximum ozone concentrations in the 4 km domain range from 50 to 84 ppb, with the highest values occurring in northeastern Utah and northwestern Colorado, and the lowest values occurring near Palisades Reservoir, Idaho on the Wyoming-Idaho border. However, most of the model-estimated fourth highest daily maximum 8-hour ozone concentrations are in the 60 to 80 ppb range. At the location of the Pinedale monitoring site, where the fourth highest observed value of 73 ppb is recorded, the modeled value is close to (~) 70 ppb.

In the 12 km grid, the maximum fourth highest model-estimated daily maximum 8-hour ozone concentrations occur downwind of the Salt Lake City (SLC) and Denver areas. This is consistent with the observed fourth highest daily maximum 8-hour ozone concentrations that recorded values of 82 ppb at the Highland monitor south of SLC and 87 ppb at the Rocky Mountain National Park (RMNP) monitor northwest of Denver. The spatial distributions of the predicted and observed fourth highest daily maximum 8-hour ozone concentrations are consistent with one another, with the possible exception of the Yellowstone NP monitor in northwestern Wyoming; the model estimates an isolated increase in ozone near Yellowstone, whereas the monitored value is the lowest in the domain (67 ppb).

The four highest modeled and observed daily maximum 8-hour ozone concentrations at the Pinedale and Centennial monitors during 2002 are shown in Table 3-1a. When performing 8-hour ozone projections, EPA recommends using the highest modeled daily maximum 8-hour ozone concentration near the monitor (within 15 km). Comparisons of the four highest modeled maximum values near the monitor with the four highest observed values are shown in Table 3-1b. There is good agreement between the modeled and observed four highest daily maximum 8-hour ozone concentrations at the two monitors, with differences, in percent (%), at the monitors ranging from -1.4% to -6.7% for Pinedale and -1.5% to -3.8% for Centennial. The agreement with the four highest observed daily maximum 8-hour ozone concentrations is even better when looking at the modeled maximum near the monitor with agreement ranging from -4.7% to +2.0% at Pinedale and -0.2% to -1.6% for Centennial.

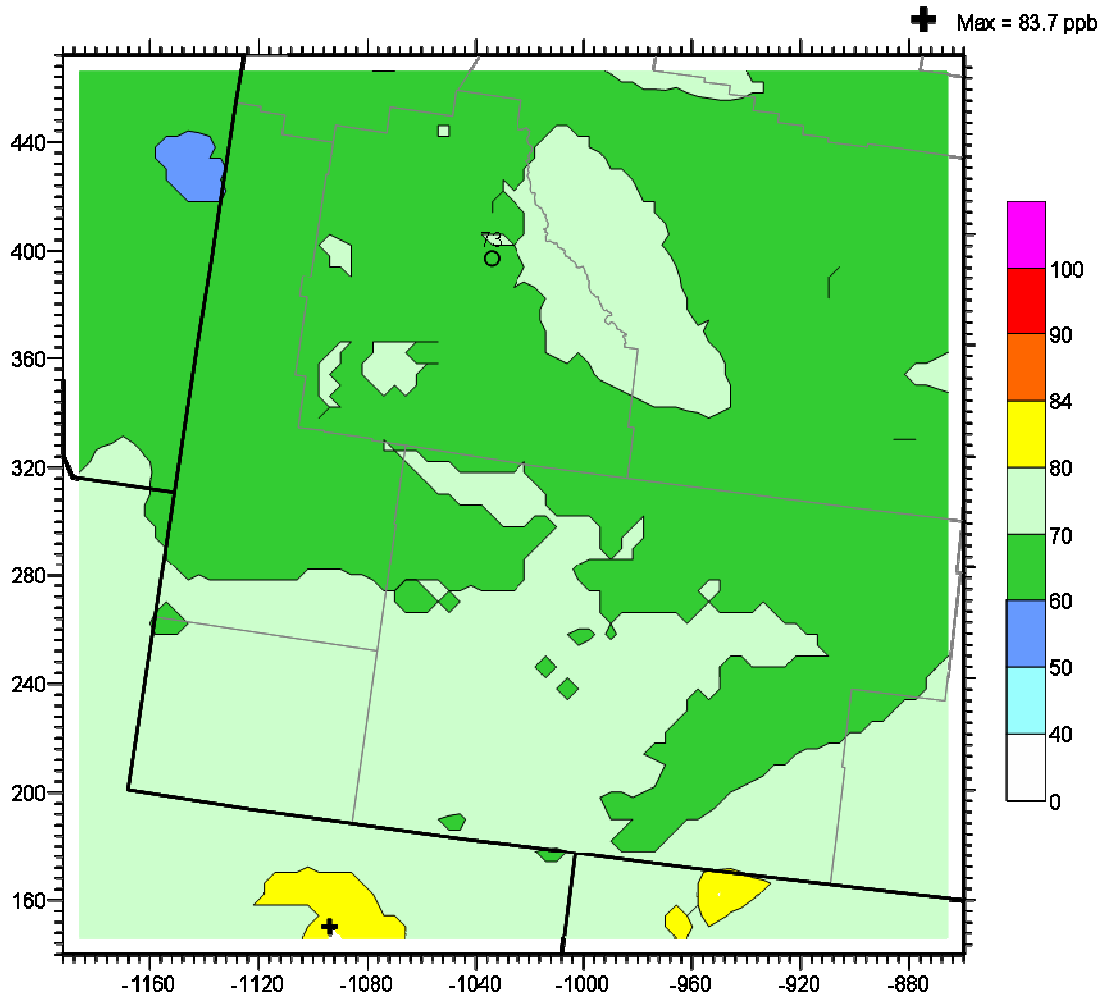

Figure 3-1. Model-estimated fourth highest daily maximum 8-hour ozone concentrations in the 4 km grid for the 2002 Base Case with superimposed observations.

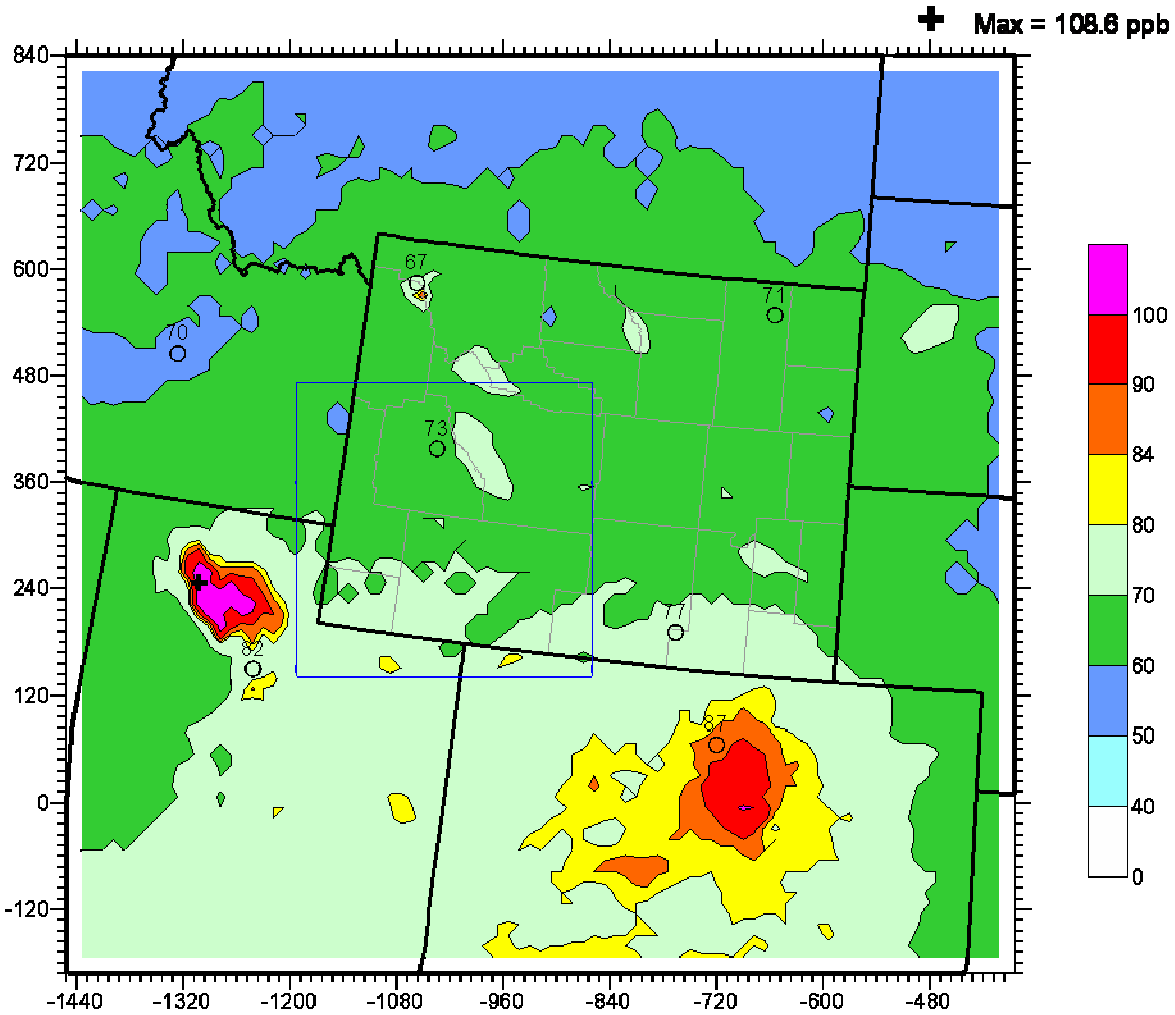

Figure 3-2. Model-estimated fourth highest daily maximum 8-hour ozone concentrations in the 12 km grid for the 2002 Base Case with superimposed observations.

Table 3-1a.
Comparison of four highest predicted and observed daily maximum 8-hour ozone concentrations at the Pinedale and Centennial monitoring sites for 2002.

Rank	Observed (ppb)	Predicted (ppb)	Difference (%)
Pinedale Monitor			
1st High	76.50	75.46	-1.4%
2nd High	76.41	71.27	-6.7%
3rd High	72.94	70.70	-3.1%
4th High	72.69	68.69	-5.5%
Centennial Monitor			
1st High	79.13	76.48	-3.3%
2nd High	79.00	76.01	-3.8%
3rd High	77.94	75.61	-3.0%
4th High	76.66	75.51	-1.5%

Table 3-1b.
Comparison of four highest predicted and observed daily maximum 8-hour ozone concentrations at the Pinedale and Centennial monitoring sites for 2002 using maximum modeled values near (< 15 km) the monitoring sites.

Rank	Observed (ppb)	Predicted (ppb)	Difference (%)
Pinedale Monitor			
1st High	76.50	78.01	+2.0%
2nd High	76.41	72.85	-4.7%
3rd High	72.94	72.70	-0.3%
4th High	72.69	72.06	-0.9%
Centennial Monitor			
1st High	79.13	78.29	-1.1%
2nd High	79.00	77.75	-1.6%
3rd High	77.94	76.80	-1.5%
4th High	76.66	76.47	-0.2%

3.2.1 Statistical Ozone Model Performance Evaluation

The modeled surface ozone concentrations estimates were compared against the observed ozone concentrations from the seven CASTNET monitoring sites shown in Figure 2-3 using graphical and statistical performance measures. Particular emphasis was placed on ozone model performance at the Pinedale CASTNET site as that was the only site located within the 4 km domain and it is situated close to the PAPA and the Bridger Class I area. The ozone model performance was also separately analyzed at the Centennial CASTNET site that lies just east of the 4 km domain.

Figures 3-3 and 3-4 compare time series of predicted and observed daily maximum 8-hour ozone concentrations for 2002 at the Pinedale and Centennial ozone monitors sites,

respectively. Although there considerable day-to-day variation between the modeled and observed 8-hour ozone concentrations, the model generally matches the magnitudes of the observed values on average for most of the year until around August, when the modeled values start to become lower than observed. In particular, the model fails to capture the relatively high observed ozone at the end of August 2002. The few modeled lowest 8-hour ozone days appear to be lower (~30 ppb) than the lowest observed days (~40 ppb). But the ozone concentrations on the highest modeled days (~75 ppb) match the observed concentrations well, although there appear to be fewer modeled high days than observed, which is due to the August-December 2002 underestimation period. The reasons why the model begins an underestimation tendency in August are unclear.

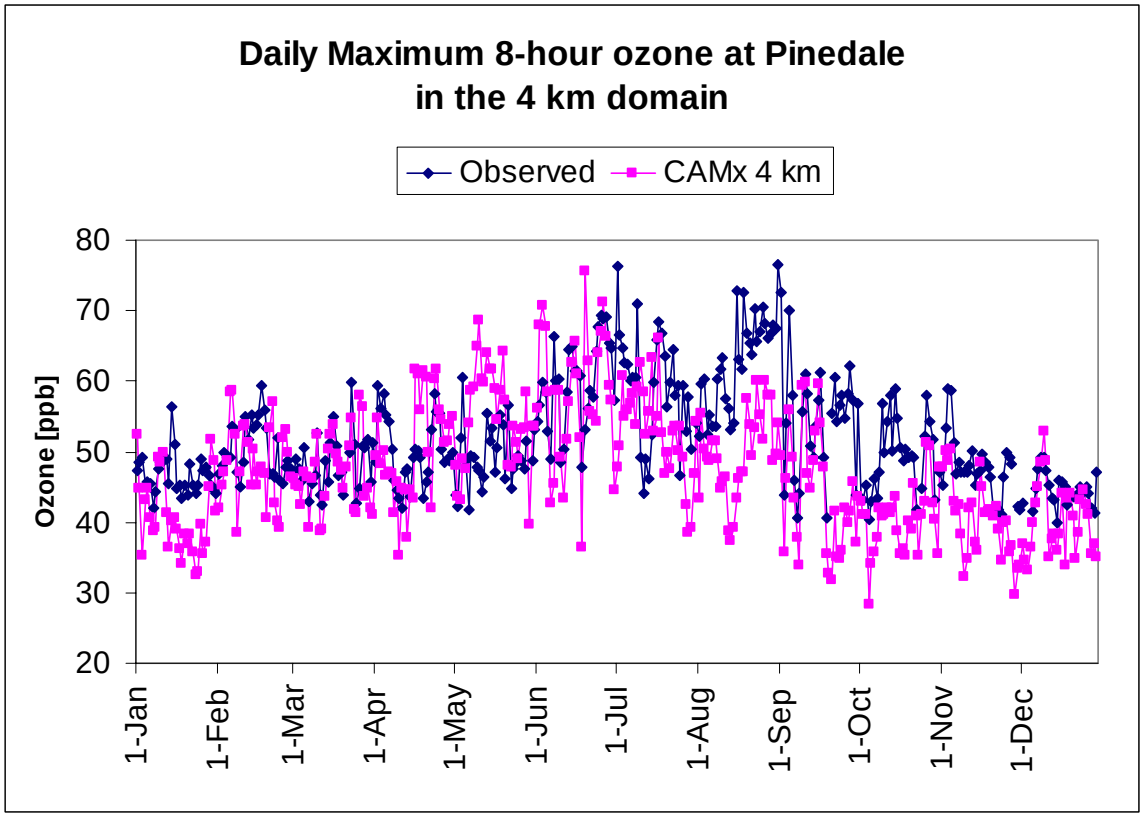

Figure 3-3. Comparison of predicted and observed daily maximum 8-hour ozone concentrations (ppb) at the Pinedale CASTNET site.

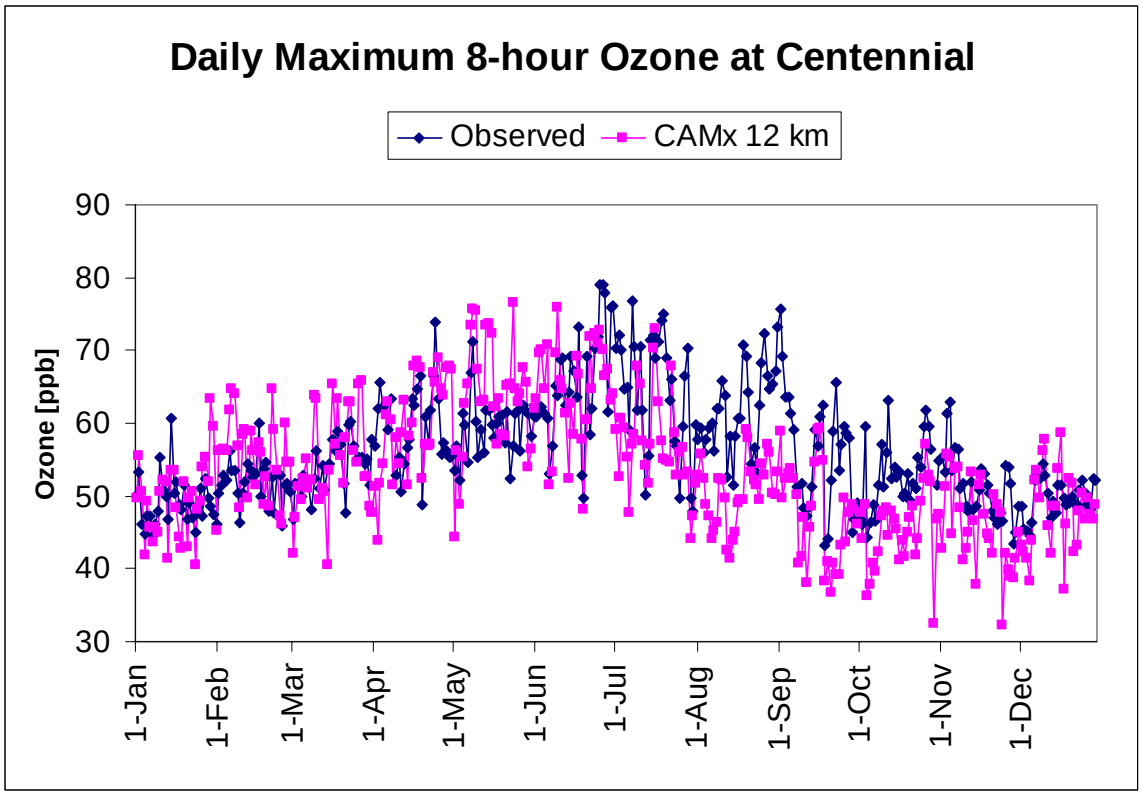

Figure 3-4. Comparison of predicted and observed daily maximum 8-hour ozone concentrations (ppb) at the Centennial CASTNET site.

EPA has developed model performance goals for 1-hour ozone statistical measures as follows (EPA, 1991):

- Mean Normalized Bias (MNB) $\leq \pm 15\%$
- Mean Normalized Gross Error (MNGE) $\leq 35\%$

Figures 3-5 and 3-6 displays the MNB and MNGE ozone performance metrics using the daily maximum 8-hour ozone concentrations by month for the, respectively, 4 km and 12 km modeling grids using "Soccer Plots". Soccer Plots plot the MNB statistical performance measure on the x-axis and MNGE metric on the y-axis with a box around EPA's MNB $\leq \pm 15\%$ and MNGE $\leq 35\%$ performance goals. When the monthly symbol falls within the box, EPA's MNB and MNGE model performance goals are achieved. For 7 of the 12 months of 2002, the monthly model performance statistics within the 4 km domain (i.e., the Pinedale ozone monitor) achieve EPA's MNB and MNGE performance goals. For the months of January, February, August, September and October the MNB is below -15% which does not achieve EPA's performance goal for this metric, although the MNGE metric goal (< 35%) is achieved by a fair margin (~20%) for all months. The worst performing month is August (-23% MNB), which is consistent with the Pinedale time series shown in Figure 3-3.

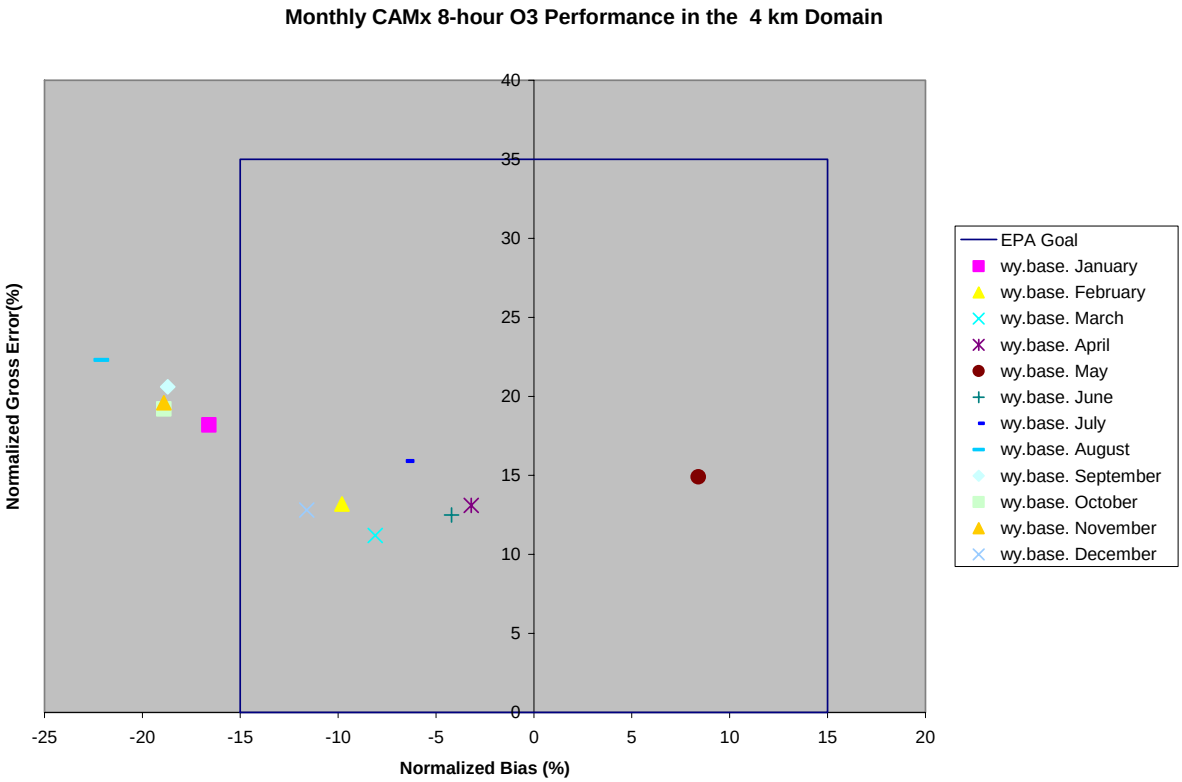

Figure 3-5. Soccer Plots of the monthly MNB versus MNGE for daily maximum 8-hour ozone concentrations in the 4 km grid (i.e., Pinedale monitoring site).

Better ozone model performance metrics are seen across the 12 km modeling domain within only two months (August and September) with MNB performance metric not achieving EPA's goals (Figure 3-6).

The comparisons of the predicted and observed 8-hour ozone concentrations presented in Figures 3-3 through 3-6 are for daily maximum 8-hour ozone concentrations paired in time (by day) and space (at the ozone monitor). When projecting 8-hour ozone concentrations, EPA guidance recommends using the daily maximum 8-hour ozone concentrations "near the monitor" to account for the fact that there may be small spatial displacements in the modeled ozone fields. The 1999 EPA draft 8-hour ozone modeling guidance, EPA recommended that predicted 8-hour ozone concentrations near the monitor should be within ±20% of the observed value on a majority of the days.

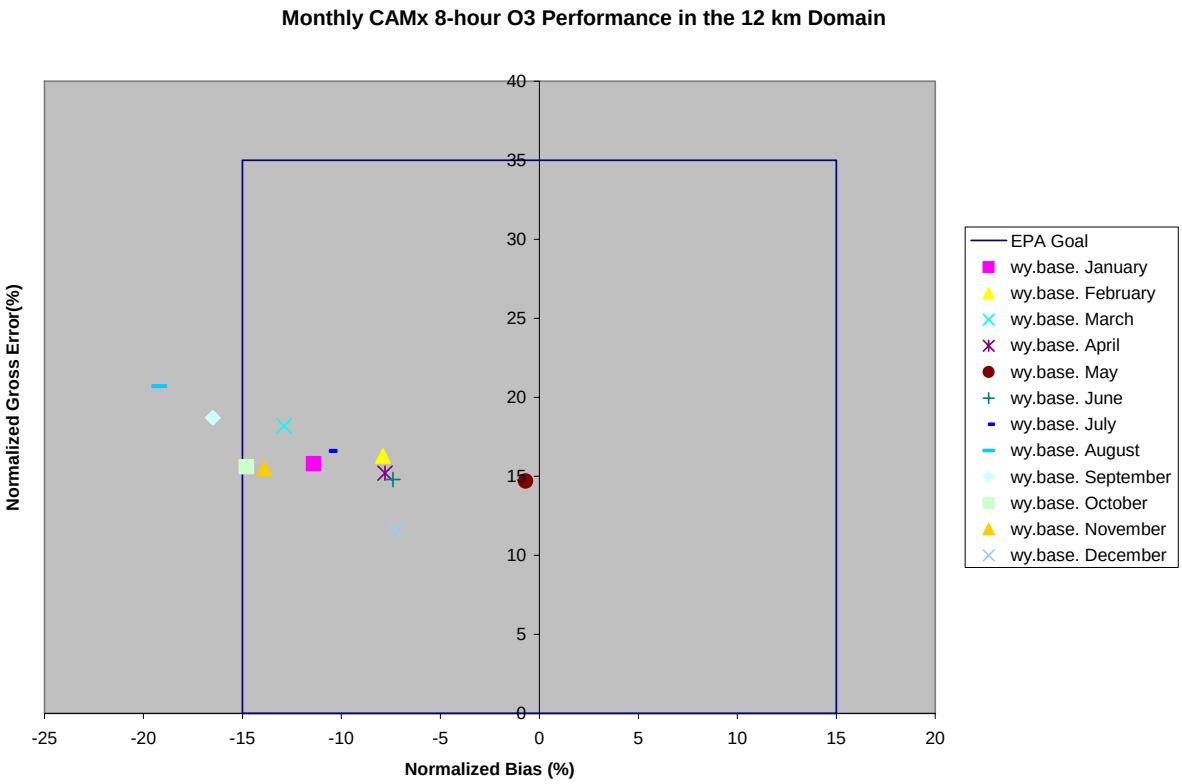

Figure 3-6. Soccer Plots of the monthly MNB versus MNGE for daily maximum 8-hour ozone concentrations in the 12 km grid (i.e., 7 CASTNet sites).

EPA guidance for making 8-hour ozone projections defines “near the monitor” as being within approximately 15 km, this turns out to be an array of 7 x 7 grid cells for the 4 km grid and 3 x 3 grid cells for the 12 km grid. The next issue is which model-estimated daily maximum 8-hour ozone concentration to match up with the observed value at the monitor, which is examined three ways:

Spatial Paired: Select the model estimated daily maximum 8-hour ozone concentrations at the monitor, as was done in the discussion above.

Maximum Value: Select the maximum model estimated daily maximum ozone concentrations in the array of cells (7 x 7 for 4 km and 3 x 3 for 12 km) centered on the monitor. This approach is identical to how modeled 8-hour ozone concentrations are selected for projecting 8-hour ozone concentrations.

Closest Value: Select the modeled daily maximum 8-hour ozone concentrations near the monitor that best matches the observed value.

Figure 3-7 displays the comparisons of the predicted and observed 8-hour ozone concentrations in a scatter plot for these three methods of matching the modeled values with the observed values at the Pinedale monitoring site. The 1:1 line of perfect agreement is a solid line and

predicted/observed pairs within the dotted lines are within ±20% of each other. Also shown in Figure 3-7 are the Quantile-Quantile (Q-Q) plots of the frequency distribution of the annual predicted and observed daily maximum 8-hour ozone concentrations. The closer the Q-Q plots are to the 1:1 sold line indicates how well the annual frequency distribution of the predicted and observed daily maximum 8-hour ozone concentrations matches each other. The Q-Q plots of predicted and observed daily maximum 8-hour ozone concentrations at the Pinedale monitor show the model under-predicting at low ozone concentrations but for the mid-level and higher ozone values matching much better, albeit with a slight underestimation tendency.

Figure 3-8 displays the same information as Figure 3-7 but for the Centennial monitor. Again, a vast majority of the modeled daily maximum 8-hour ozone concentrations are within ±20% of the observed value on the same day and the Q-Q plots indicate that the modeled and observed daily maximum 8-hour ozone concentrations in 2002 have a very similar frequency distribution, albeit with the modeled values slightly lower.

A comparison of the predicted and observed daily maximum ozone concentrations across all 7 sites in the 12 km domain is given in Figure 3-9. When looking at the maximum modeled value near the monitor (Figure 3-9, middle) there are a few days with extremely high modeled values (~100 ppb) with lower observed values (~40 ppb). These days occur at the Yellowstone NP monitor and are due to a highly localized modeled ozone spike (see Figure 3-2). The cause of this modeled localized ozone spike is unknown.

Table 3-2 summarizes the percent of the time EPA's within ±20% performance goal for daily maximum ozone concentrations is achieved for the Pinedale and Centennial monitoring sites and across all 7 CASTNET monitoring sites in the 12 km domain. At the Pinedale monitoring site, the predicted daily maximum 8-hour ozone value near the monitor is within ±20% of the observed value on 74%, 78% and 89% of the days during 2002 depending on whether the Spatially Paired, Maximum or Nearest value is used. Similar numbers for the Centennial site are 84%, 85% and 89% and for all the ozone monitoring sites 72%, 74% and 84%. Thus, the model is predicting daily maximum 8-hour ozone concentrations near the monitor to within ±20% of the observed value most of the time.

Table 3-2.
Summary of modeled daily maximum 8-hour ozone concentrations within 20% of the observed value on the same day at the Pinedale and Centennial monitors, across all 7 monitors in the 12 km domain and for the Spatial Paired, Maximum, and Nearest predicted value near the monitor.

	Spatially Paired	Maximum Value	Nearest Value
Pinedale 4 km (357 days)			
Within ±20%	74%	78%	89%
> +20%	6%	12%	2%
< -20%	20%	10%	9%
Centennial 12 km (359 days)			
Within ±20%	84%	85%	89%
> +20%	4%	6%	2%
< -20%	12%	9%	9%
12 km All Sites (2,287 days)			
Within ±20%	72%	78%	84%
> +20%	4%	8%	2%
< -20%	23%	14%	14%

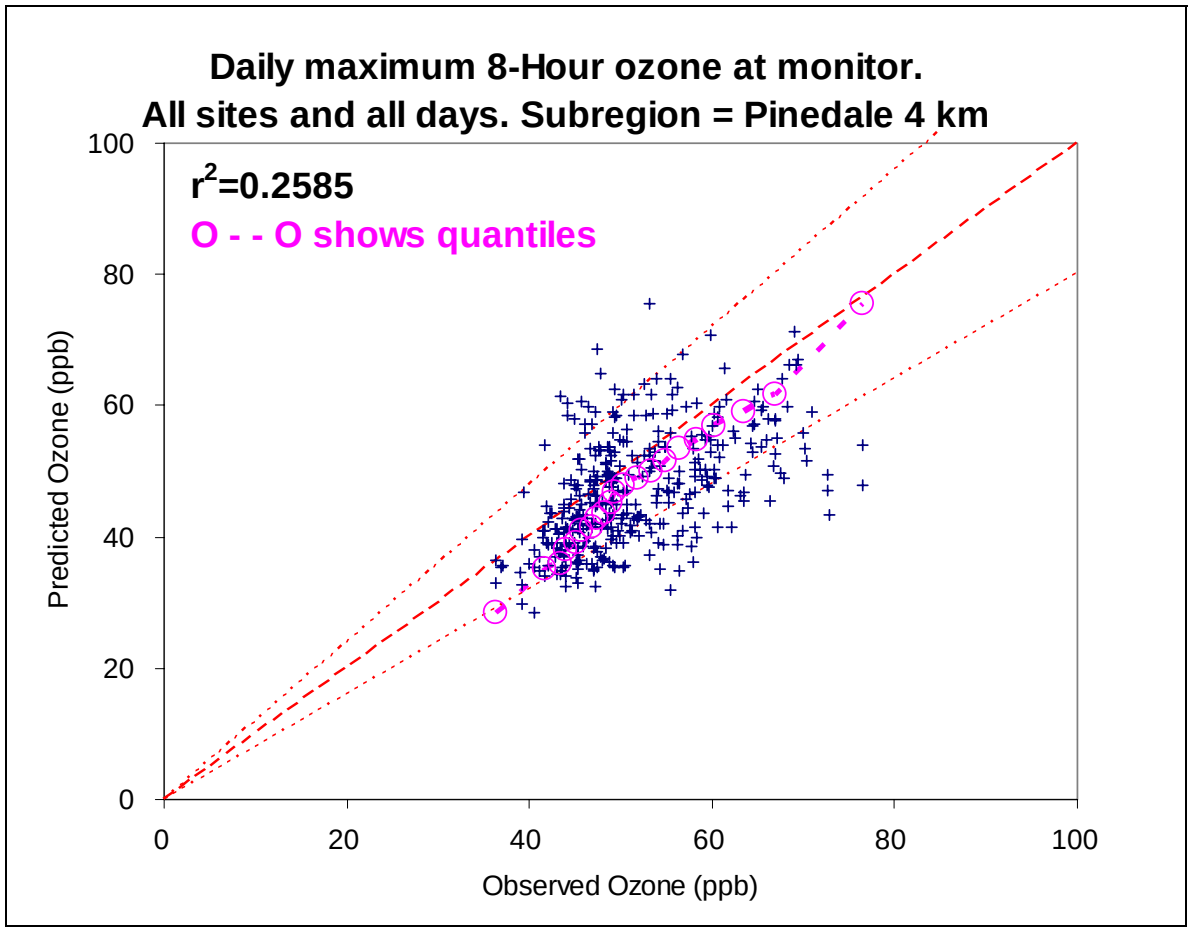

Figure 3-7a. Comparison of predicted and observed daily maximum 8-hour ozone concentrations at the Pinedale monitor using the Spatial Paired modeled value near the monitor.

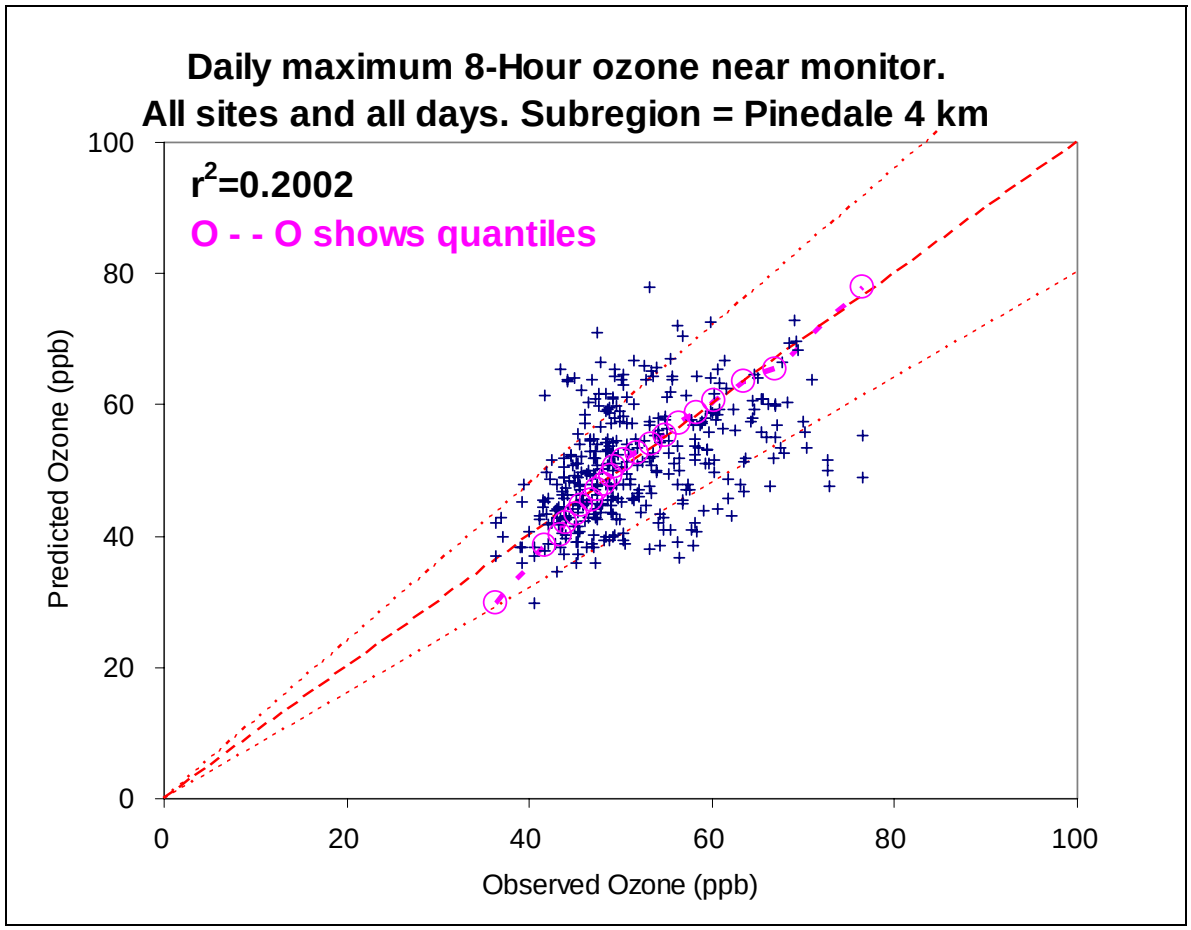

Figure 3-7b. Comparison of predicted and observed daily maximum 8-hour ozone concentrations at the Pinedale monitor using the Maximum modeled value near the monitor.

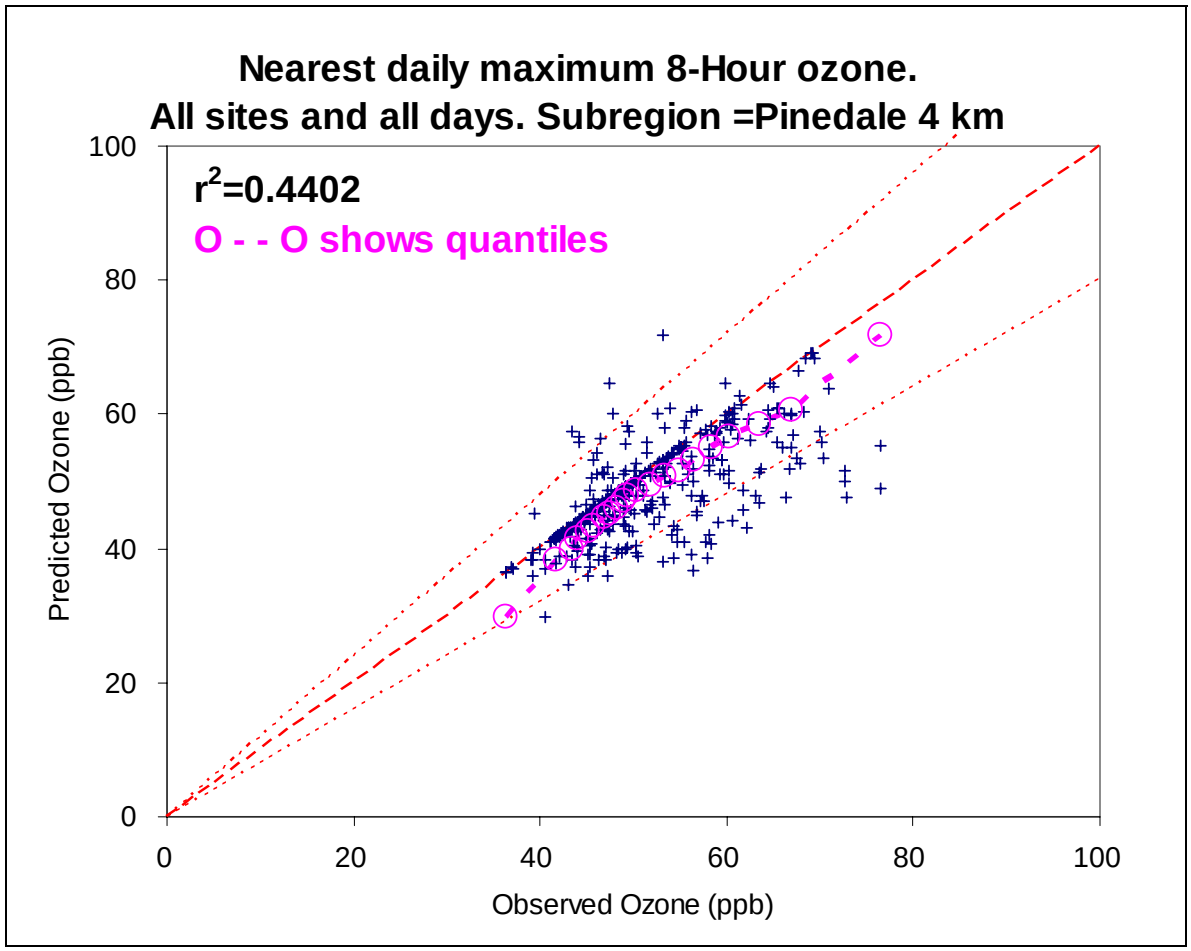

Figure 3-7c. Comparison of predicted and observed daily maximum 8-hour ozone concentrations at the Pinedale monitor using the Closest modeled value near the monitor.

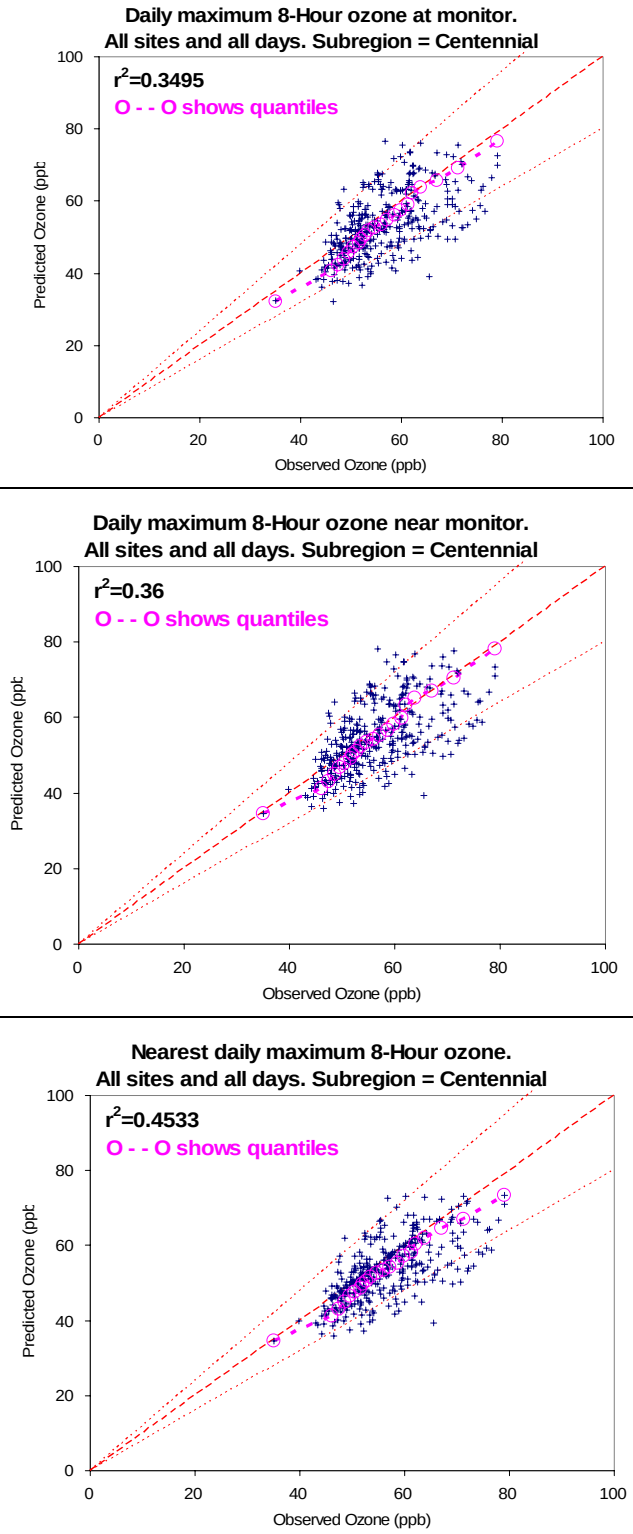

Figure 3-8. Comparison of predicted and observed daily maximum 8-hour ozone concentrations at the Centennial monitor using the Spatially Paired (top), Maximum (middle) and Closest (bottom) modeled value near the monitor.

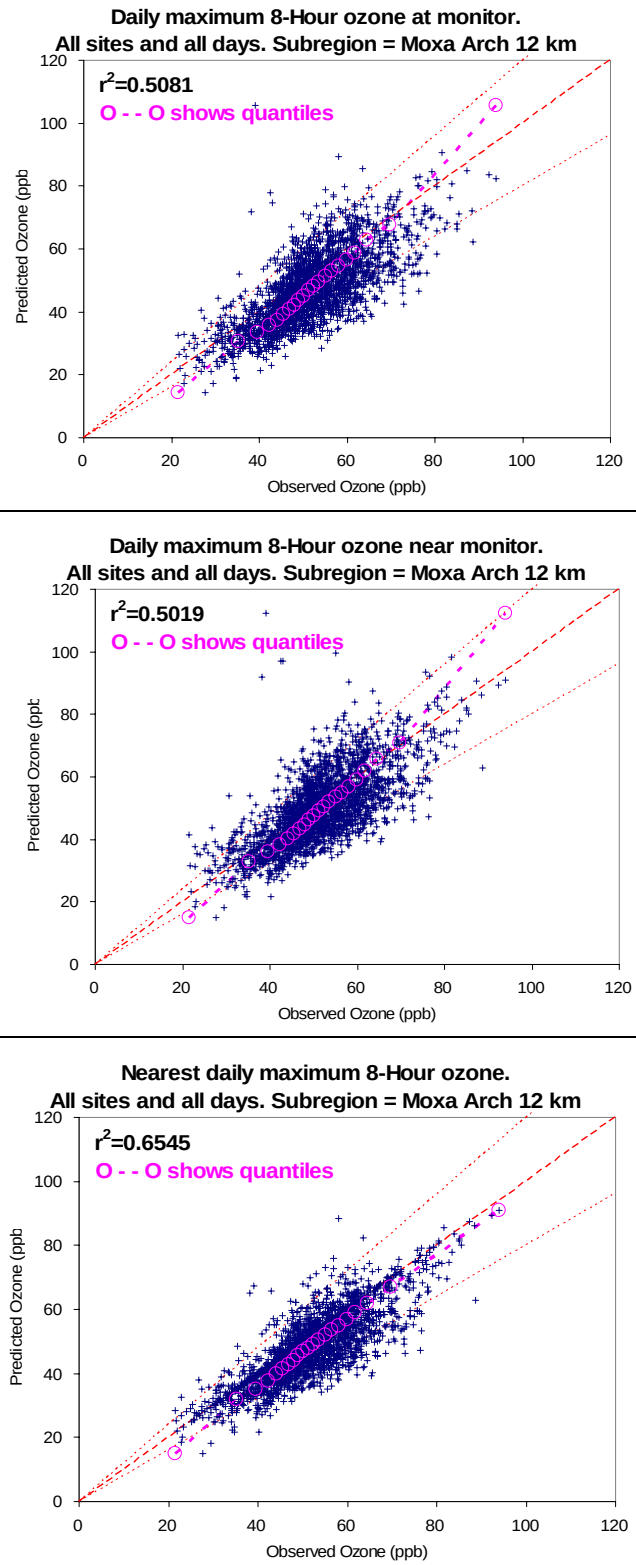

Figure 3-9. Comparison of predicted and observed daily maximum 8-hour ozone concentrations across 7 monitors in the 12 km grid using the Spatially Paired (top), Maximum (middle) and Closest (bottom) modeled value near the monitor.

3.3 Ozone Model Performance Evaluation Conclusions

The CAMx 2002 12/4 base case simulation reproduces the observed ozone to within EPA's performance goals, although with a small underestimation bias. The observed highest ozone concentrations at the Pinedale and Centennial CASTNET monitors in southwestern Wyoming are generally reproduced by the model to within ±5%. On a day-by-day basis, the observed daily maximum ozone concentrations are replicated by the model to within ±20% for a vast majority of the modeling days. Thus, the model appears to be reliable enough to perform an assessment of the potential ozone impacts of the Project and cumulative emissions.

4.0 OZONE IMPACT ASSESSMENT

The impact of the PAPA and other new sources in the region (cumulative emissions) on ozone concentrations were analyzed in two ways. The first approach follows EPA's guidance for projecting future year 8-hour ozone concentrations for determining attainment of the ozone NAAQS (EPA, 2007). The second approach uses the absolute model predictions and compares the modeled fourth highest 8-hour ozone concentration estimates with the 8-hour ozone NAAQS.

4.1 Results using EPA Guidance Ozone Projection Approach

EPA guidance for projecting future 8-hour ozone concentrations recommends using the photochemical grid model in a relative sense to scale current observed 8-hour ozone Design Values (EPA, 2007).

4.1.1 EPA Guidance 8-Hour Ozone Projection Procedures

A design value is defined as a three year average of the fourth highest daily maximum 8-hour ozone concentrations at a monitor. Model scaling factors called relative response factors (RRFs) are used to scale the observed design values in order to predict future year design values. RRFs are the ratio of the future-year to current-year modeled 8-hour ozone concentrations near a monitor site. By "near the monitor", EPA means within approximately 15 km of the monitor location. The future-year design value (DVF) is obtained from the current-year design value (DVC) as follows:

$$DVF = DVC \times RRF$$

The RRFs are calculated for all days in which the current-year modeled 8-hour ozone value is greater than a threshold. EPA recommends using a threshold value between 70 ppb and 85 ppb. This is done so that the model response to future changes in emissions is considered only on high ozone days of comparable conditions as those that produced the Design Values.

To perform 8-hour ozone projections, EPA has developed a Modeled Attainment Test Software (MATS) tool that uses modeling results, observed 8-hour ozone Design Values and EPA guidance (EPA, 2007) to project 8-hour ozone concentrations that reflects the change in emissions from a base case to alternative emissions scenario. The MATS tool was used to assess the effects that the Project and other cumulative emissions would have on 8-hour ozone concentrations in southwestern Wyoming. The following two links contain the website where the EPA MATS tool is available and the EPA ozone modeling guidance whose procedures are codified in MATS:

- http://www.epa.gov/scram001/modelingapps_mats.htm
- http://www.epa.gov/scram001/guidance/guide/final-03-pm-rh-guidance.pdf

The EPA modeling guidance procedures (EPA, 2007) used in MATS uses the model in a relative fashion to scale observed current year 8-hour ozone Design Values (DVC) to the future (DVF) using RRFs as described above. EPA recommends using a DVC based on a three-year average of 8-hour ozone Design Values centered on the modeling year. For the 2002 modeling year, this would mean the DVC would be the weighted average of the fourth highest 8-hour ozone at a monitor from the years 2000, 2001, 2002, 2003 and 2004 using weights of 1, 2, 3, 2 and 1, respectively. To develop RRFs, EPA guidance recommends using current and future

modeling results for all days in which the current year daily maximum 8-hour ozone concentration near the monitor exceeds a threshold value. Using a 4 km grid, the maximum modeled daily maximum 8-hour ozone concentration in a 7 x 7 array of grid cells centered on the monitor is used. EPA recommends using an 8-hour ozone threshold concentration of 85 ppb and also recommends that RRFs be based on a minimum of 5 days although 10 days or more is preferred. EPA allows a reduction of the threshold value to 70 ppb to meet the minimum 5-10 days requirement. These procedures were developed mainly for ozone nonattainment areas where there are typically many days of elevated ozone concentrations than is observed in southwestern Wyoming.

For southwestern Wyoming, where ozone rarely exceeds 70 ppb, the minimum days requirement had to be relaxed a little in order to apply EPA's guidance procedures. In addition, many of the ozone monitoring sites in southwestern Wyoming have not been operating for 5 years therefore the DVCs were based on shorter time periods. For example, the Jonah, Daniel and Boulder ozone monitors that have recently recorded 8-hour ozone concentrations approaching the ozone NAAQS have only been operational for only two years. Calculation of a design value requires three years of valid data. Fortunately, the EPA MATS tool allows one to input the minimum number of years necessary to calculate the starting point DVCs. This number was specified as 1 so that MATS could use ozone data for the newer ozone monitoring in the 8-hour ozone projections. The following inputs to the MATS tool were specified to allow its application for this study:

- A threshold of 70 ppb was used (i.e., the RRF for a grid cell is based on the ratio of the average daily maximum 8-hour ozone concentrations for the Project+Cumulative Emissions to Base Case emissions scenario when the Base Case ozone is 70 ppb or greater); and
- RRFs and 8-hour ozone projections were performed at the ozone monitors using a minimum of 1 year of ozone data available to calculated the current year Design Values (DVCs);
- The minimum number of days required to develop RRFs was set to 1;
- The unmonitored area screening test in MATS was used to obtain projected 8-hour ozone Design Values across the entire 4 km grid. In this procedure, MATS interpolates the DVCs from the monitoring sites to obtain a gridded field of DVCs and then uses a gridded field of model derived RRFs to project 8-hour ozone Design Values throughout the domain; and
- EPA's Model Attainment Test Software (MATS) tool was used to project future-year 8-hour ozone design values (DVs) in unmonitored areas as well as at the monitors for comparison with the 8-hour ozone National Ambient Air Quality Standard (NAAQS) of 0.08 ppm (or 85 ppb).

4.1.2 Projected 8-Hour Ozone for the Project Following EPA Guidance

Table 4-1 summarizes the current and projected 8-hour ozone Design Values at the monitoring sites in southwestern Wyoming calculated with MATS for the PAPA Case 1 and Case 2 emission scenarios. The highest projected 8-hour ozone design value is 78.2 ppb at the Boulder monitor for the Case 1 scenario, which is 1.8 ppb higher than the current year Design Value (76.4 ppb). The highest projected 8-hour ozone design value for the Case 2 scenario is 76.5 ppb and also occurs at the Boulder monitor. This value is 0.1 ppb higher than the current year design value. Since all of the projected 8-hour ozone Design values are well below the 8-hour ozone NAAQS (85 ppb), the PAPA Case 1 and Case 2 emissions, along with all other

cumulative emissions in the area, are not projected to cause or contribute to any violations of the ozone NAAQS.

Table 4-1.
Projected 8-hour Ozone Design Values at the Monitoring Sites for the Pinedale Anticline Project Area Case 1 and Case 2 Emissions Scenarios.

Site (# days DVC is based on)	Current DVC (ppb)	Case 1 Projected DVF (ppb)	Case 2 Projected DVF (ppb)	Number of Days >70 ppb in RRF
Jonah (2)	72.5	75.2	73.5	4
Boulder (2)	76.4	78.2	76.5	5
Daniel (2)	70.7	71.4	70.5	4
Wamsutter (1)	67.0	67.3	67.3	6
Pinedale (5)	68.9	69.4	68.8	6

The MATS unmonitored area screening analysis results for the Case 1 scenario are shown in Figure 4-1. The upper left hand panel shows the projected design value at each monitor, while the upper (lower) right hand panel shows the spatial fields of projected 8-hour ozone Design Values across the 4 km (12 km) domain. These fields of estimated future-year 8-hour ozone concentrations may be used to identify possible ozone hot spots where additional monitoring should be considered. The 4 km grid shows hot spots near the PAPA and northwest of the PAPA. The maximum projected 8-hour ozone design value for the Case 1 scenario anywhere in the unmonitored region was 77.2 ppb near Bondurant, Wyoming northwest of the PAPA, which was 6.7 ppb higher than the interpolated current-year DVC of 70.5 ppb for this location. However, the maximum impact near Bondurant is based on an RRF developed from a single day of modeling results above the 70 ppb threshold, so it is not clear whether this impact would have appeared had more ozone data above the threshold been available for the MATS analysis. The fact that a maximum was located in this area does suggest that additional monitoring may be indicated in this region. The spatial fields on the 12 km domain are consistent with the 4 km domain results, and show that maximum future year ozone in the 12 km grid are dominated by the Denver and Salt Lake City urban plumes.

Figure 4-2 shows that the MATS spatial fields for the Case 2 scenario are similar to those of the Case 1 scenario, with smaller impacts near the PAPA reflecting the Case 2 scenario's lower emissions. The maximum projected 8-hour ozone design value in the unmonitored area for the Case 2 scenario was 75.5 ppb, which occurred in the PAPA and was 0.5 ppb higher than the 75.0 ppb current year design value. Away from the PAPA, the 12 km domain MATS projected ozone spatial fields for the PAPA Case 1 and Case 2 scenarios are nearly identical, with the Denver and Salt Lake City urban plumes showing up as the most prominent features.

The MATS analysis shows that the projected 8-hour ozone Design values away from the monitoring sites are also all less than the ozone NAAQS so that the PAPA Case 1 and Case 2 scenarios are not estimated to cause or contribute to any violations of the ozone NAAQS away from the monitoring sites.

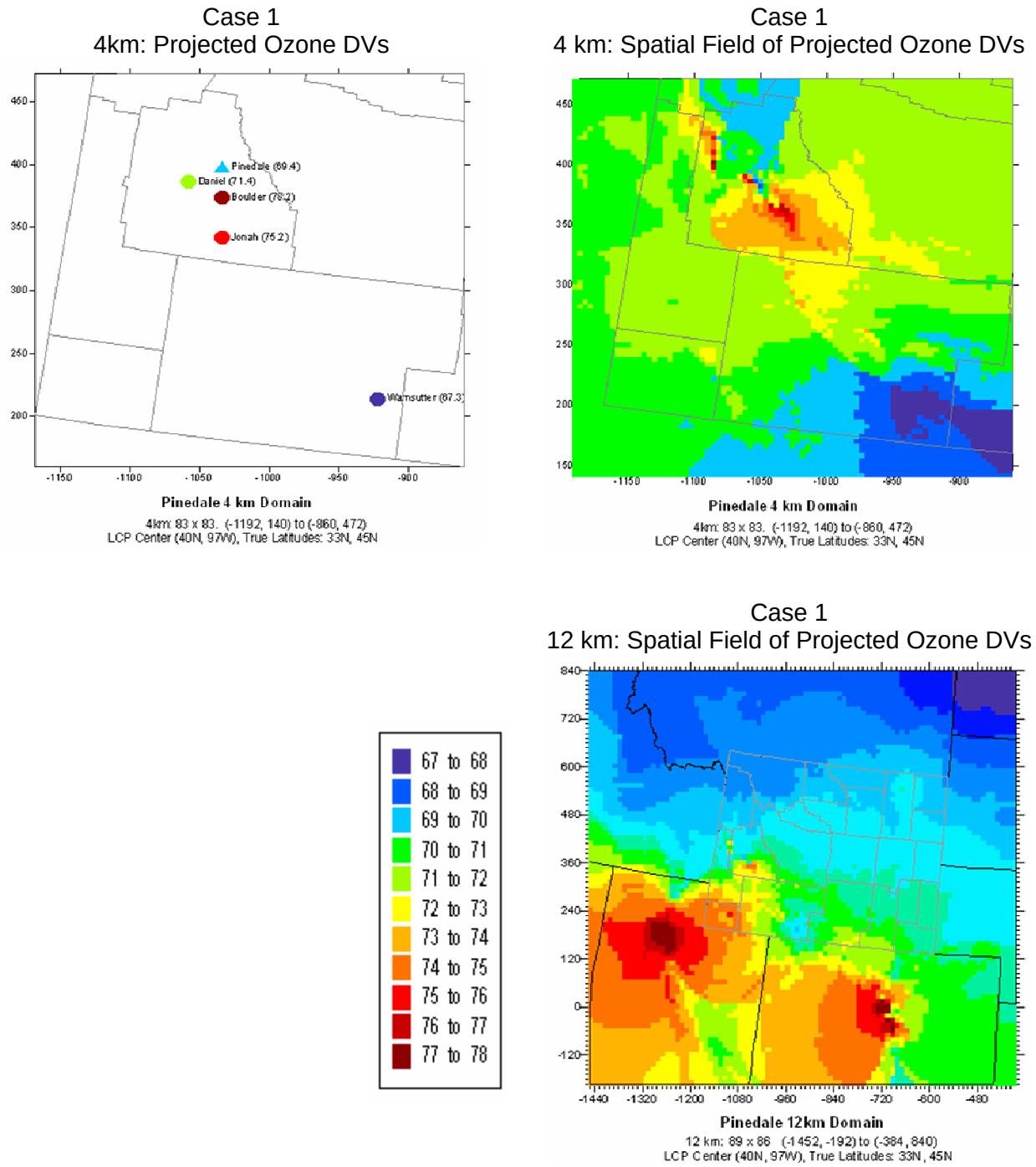

Figure 4-1. PAPA Case 1 Scenario MATS analysis. Top left panel: projected design values for monitors within the 4 km domain. Top right panel: spatial fields of projected ozone design values in the 4 km domain. Bottom right panel: spatial fields of projected ozone design values in the 12 km domain. Legend applies to both right hand panels.

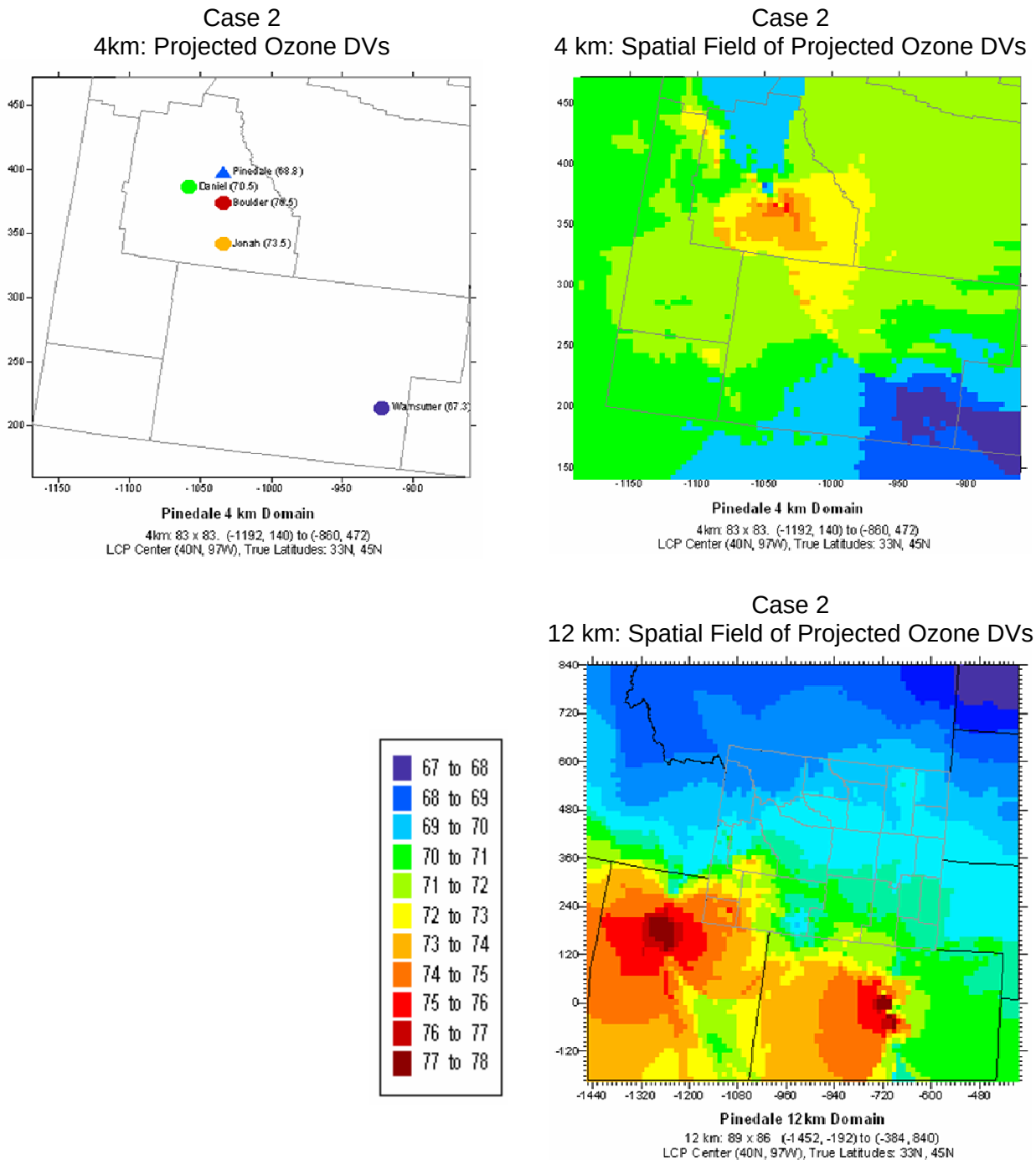

Figure 4-2. PAPA Case 2 Scenario MATS analysis. Top left panel: projected design values for monitors within the 4 km domain. Top right panel: spatial fields of projected ozone design values in the 4 km domain. Bottom right panel: spatial fields of projected ozone design values in the 12 km domain. Legend applies to both right hand panels.

4.2 Ozone Projections using Absolute Modeling Results

The second approach used for assessing the potential ozone impacts from the Project and other new sources in the region is to analyze the absolute modeled concentrations for the Project plus Cumulative Emissions for both the PAPA Case 1 and Case 2 scenarios.

4.2.1 Absolute Ozone Results in 12/4 km Domain

Figure 4-3 displays the estimated fourth highest daily maximum 8-hour ozone concentrations in the 4 km domain for the Base Case, PAPA Case 1 and Case 2 emission scenarios. For the base case (upper left hand panel), the maximum estimated 8-hour ozone concentration in the 4 km domain is 83.7 ppb, which occurs in northeastern Utah well south of the PAPA and other new sources. For both the Case 1 (lower left hand panel) and the Case 2 (lower right hand panel) scenarios, the fourth highest daily maximum 8-hour ozone concentration is 83.8 ppb, and is located in northwestern Colorado, well south of the project. Within the general location of the PAPA the maximum CAMx estimate fourth highest daily maximum 8-hour ozone concentrations are in the 80-85 ppb and 70-75 ppb range for the, respectively, PAPA Case 1 and Case 2 emission scenarios. For the Base Case and the PAPA Case 1 and Case 2 scenarios, then, all estimated fourth highest 8-hour ozone concentrations in the 4 km domain are less than the ozone NAAQS of 85 ppb and do not exceed the 8-hour ozone NAAQS.

The incremental change in the ozone formed in the 4 km domain due to the Case 1 scenario and Case 2 scenario Project and other Cumulative Emissions relative to the Base Case is shown in the top panels of Figure 4-4. The maximum estimated ozone increase is 14.8 ppb for the Case 1 scenario and 5.5 ppb for the Case 2 scenario. In both scenarios, the maximum incremental change occurs in the Pinedale/Jonah area. In the 12 km domain (not shown), the maximum ozone increase is smaller due to the coarser grid resolution and also occurs in the Pinedale/Jonah area.

The difference in the fourth highest daily maximum ozone concentration between the Case 1 and Case 2 scenarios is shown in the bottom panel of Figure 4-4. The maximum difference between the two scenarios is 11.5 ppb, and occurs in the Pinedale/Jonah area near the PAPA. The Case 1 scenario has higher 8-hour concentrations, consistent with its higher emissions.

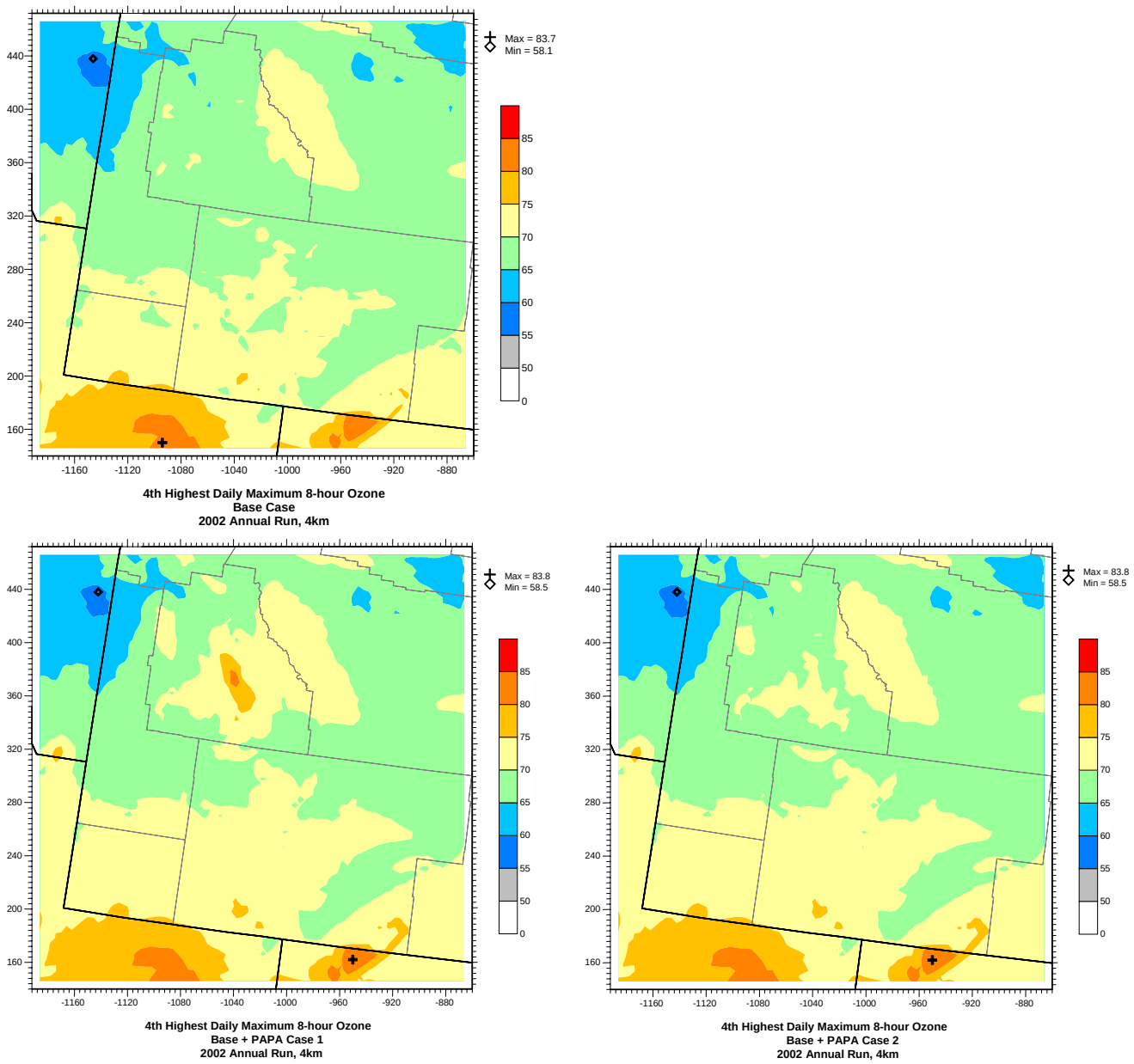

Figure 4-3. Fourth highest daily maximum 8-hour ozone in the 2002 Base Case (top), and when adding the PAPA Case 1 scenario (bottom left) and PAPA Case 2 scenario (bottom right).

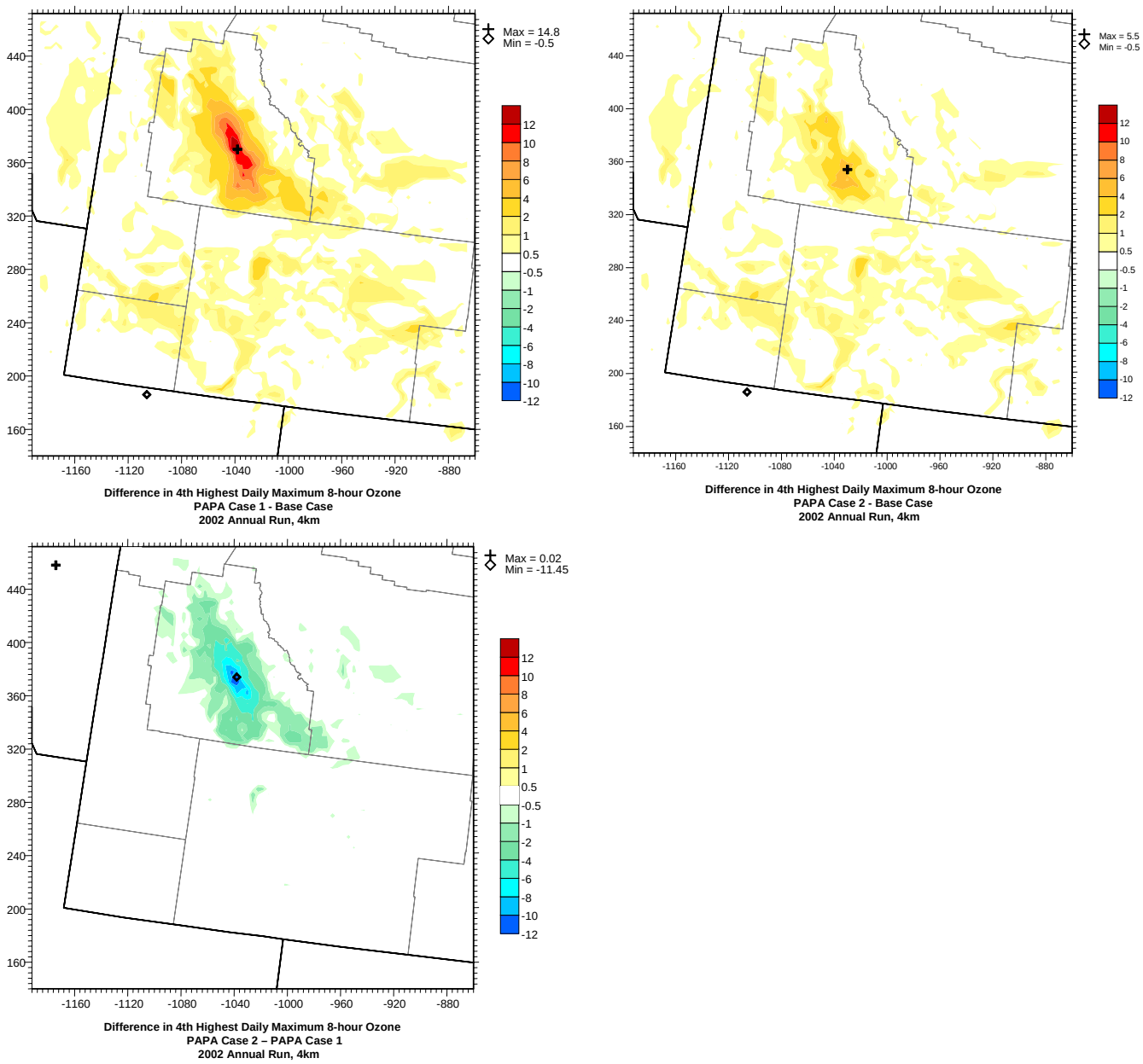

Figure 4-4. Impacts to the fourth highest daily maximum 8-hour ozone from the PAPA Case 1 scenario (top left) and from the PAPA Case 2 scenario (top right). Difference in the fourth highest 8-hour ozone in 2002 between the two PAPA scenarios (Case2 – Case 1).

4.3 Ozone Modeling Analysis Conclusions

Table 4-2 summarizes the maximum estimated 8-hour ozone concentrations near the PAPA and in the 4 km grid domain using the EPA RRF projection approach and the absolute model predictions from the 2002 Base Case and Project and Cumulative Emissions annual CAMx simulations. Using these two different analysis techniques, the maximum 8-hour ozone concentrations are projected to be below the 8-hour ozone NAAQS. Note that the maximum absolute model predictions on the 4 km grid for both scenarios occurred in northern Colorado, away from the site of the proposed Project.

Table 4-2.
Maximum projected 8-hour ozone concentrations near the Project in the 4 km grid domain due to Base Case emissions plus the Project and Cumulative Emissions and comparisons with the NAAQS.

Scenario	8-Hour Ozone NAAQS (ppb)	Projected Maximum 8-Hour Ozone (ppb)	
		EPA Guidance Approach	Absolute Model Predictions
PAPA Case 1	85	78.2	83.8*
PAPA Case 2	85	76.5	83.8*

* Occurs in northern Colorado away from the Project location

Since all of the projected 8-hour ozone Design values are below the 8-hour ozone NAAQS (85 ppb) then the PAPA Case 1 and Case 2 emissions scenarios, along with all other cumulative emissions in the area, are not projected to cause or contribute to any violations of the ozone NAAQS. The projected 8-hour ozone Design values away from the monitoring sites are also all below the ozone NAAQS therefore the both the PAPA Case 1 and Case 2 scenarios are not estimated to cause any violations of the ozone NAAQS away from the monitoring sites as well.

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ATTACHMENT

REGIONAL OZONE ASSESSMENT OF THE PINEDALE ANTICLINE PROJECT AND OTHER NEW SOURCES IN THE REGION

Table 1. Summary of Modeled Field-Wide Emissions (tpy), Pinedale Anticline Project.

Emissions	Alternative B PAPA Case 1	Alternative C (Phase 2) PAPA Case 2
Field Compression		
NO_x	532.1	421.9
CO	235.5	157.7
VOC	357.1	320.5
Granger Gas Plant		
NO_x	301.7	301.7
CO	322.8	322.8
VOC	140.2	140.2
Drill Rigs		
NO_x	4390.0	526.4
CO	3335.7	427.0
VOC	393.1	526.4
Fugitives		
NO_x	668.8	495.7
CO	484.2	551.6
VOC	1207.8	1927.3
Total		
NO_x	5892.6	1745.7
CO	4378.2	1459.0
VOC	2098.1	2914.4

Table 2. Reasonably Foreseeable Development (RFD) Sources

EA/EIS Listed by Field Office	Status	Total Pollutant Remaining Per Project Area					
		NO_x (tpy)	CO (tpy)	VOC (tpy)	SO2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Kemmerer Field Office							
Hicky-Mountain-Table Mountain	Include.	14.1	--	--			
Horse Trap	Include.	25.71	--	--			
Moxa Arch Area Infill (Proposed Action)	Include.	3477.4	4528.8	7058.6	69.2	434.2	235.9
Pioneer Gas Plant	Include.	19.6	--	--	--	0.02	0.02
Riley Ridge[3]	Include.	1.62	--	--			
Road Hollow	Include.	88.01	--	--	54.95	0.85	0.85
Lander Field Office							
Wind River	Include.	486.06	--	--	--	0.12	0.12
Pinedale Field Office							
Big Piney-LaBarge	Include.	2.52	--	--			
Burley	Include	5.1	--	--			
Castle Creek	Exclude - not given by FO as project area to include in RFD analysis						
Jonah II EIS	Exclude - developed.	--	--	--			
Jonah Infill (Preferred Alternative)	Include	696.7	4037.2	14084.5	34.1	1652.8	313.9
Merna Pipeline	Exclude - developed.	--	--	--			
Soda Unit	Include.	2.16	--	--			
South Piney- Infinity & Williams[2]	Include.	736.7	1380.8	969.4	1.3	47.09	47.09
Rawlins Field Office							
Atlantic Rim EIS	Include.	674.88	--	--	65.3	1119.77	247.51
Continental Divide/Wamsutter II EIS	Include.	173.52	--	--			
Creston-Blue Gap	Include.	2.06	--	--			
Desolation Flats	Include.	320	--	--			
Dripping Rock/Cedar Breaks	Exclude - John Spehar Rawlins FO.	--	--	--			
Hay Reservoir	Exclude - developed.	--	--	--			
Mulligan Draw	Include.	4.14	--	--			
Seminoe Road	Include.	318.74	--	--	42.16	515.31	121.02
Sierra Madre	Include.	6.9	--	--			
South Baggs	Include.	31.73	--	--			
Rock Springs Field Office							
Bird Canyon	Exclude - Included in Bird Opal Loop Pipeline.	--	--	--			
Bird-Opal Loop Pipeline	Exclude - developed.	--	--	--			
Black Butte Coal (Pit 14)	Include.	149.26	--	--	--	1074.94	--
BTA Bravo	Include.	48.22	--	--			
Copper Ridge Shallow Gas Project	Include.	193.08	--	--			
East LaBarge	Exclude - Renee Dana 9/16/03.	--	--	--			
Essex Mountain	Exclude - Renee Dana 9/16/03.	--	--	--			
Fontenelle Natural Gas Infill Drilling	Include.	204.68	--	--			
Hiawatha	Exclude - no emissions quantified	--	--	--			
Jack Morrow Hills	Include.	65.16	--	--			
Lower Bush Creek CBM (Kennedy Oil)	Include.	1.8	--	--			
Opal-Loop Pipeline	Exclude - developed.	--	--	--			
Stage Coach	Include.	89.39	--	--			
Vermillion Basin	Include.	7.56	--	--			

[2] Emissions from South Piney taken from Emissions Inventory, Table 2.6 pg 14.

[3] Four sour gas plants proposed as part of original proposed action in 1983. Because the field is nearly developed and these ancillary facilities have not yet been built, it is assumed they will not be developed and the plants are excluded from this inventory.

Table 3. Wyoming Included Permitted Industrial Sources

Wyoming State-Permitted Source Inventory - WDEQ-AQD Permitted Sources in Moxa Arch Infill Drilling Project Modeling Domain - Table of Included Sources (Including VOCs and HAPs)

County	Company	Facility	Permit No.	Height (m)	Temp (k)	Velocity (m/s)	Diameter (m)	NOx	PM10	SOx	CO	VOC	Formal-dehyde	HAP Total
Carbon	Anadarko E&P Company, LP	Federal 1691 8I Injection Well	MD-986					6.10			13.60	3.40	0.40	0.40
Carbon	Anadarko E&P Company, LP	Wild Cow Compressor Station	CT-3634					8.40			9.80	15.10	0.40	3.90
Carbon	Anadarko Gathering Company	Blue Sky	MD-950	11	730	71.6	0.25	17.50			5.80	5.20	0.80	0.80
Carbon	Anadarko Gathering Company	Blue Sky	MD-1070					28.60			22.50	10.30	1.49	1.49
Carbon	Anadarko Gathering Company	Doty Mountain Compressor Station	CT-3349	11	730.4	71.6	0.25	46.70			29.20	15.70	2.30	2.30
Carbon	Anadarko Gathering Company	Sun Dog CBM Unit Pod 6	MD-1092					16.70			5.60	5.60	0.78	0.78
Carbon	Devon Energy Production Company, L.P	Baggs Mainline/ Blue Gap Compressor Station	MD-1163					19.20			7.70	7.10	0.90	1.00
Carbon	Double Eagle Petroleum Company	Cow Creek Central Production Facility	MD-1047					45.40			13.80	14.00	2.00	2.00
Carbon	Double Eagle Petroleum Company	Cow Creek Unit 34-12	MD-1043A					2.90			6.60	8.60	0.60	0.60
Carbon	Double Eagle Petroleum Company	Cow Creek Unit 34-12	MD-962					13.20			4.00	3.00	0.70	0.70
Carbon	Marathon Oil Company	Standard Draw 5-10	MD-1243					5.30			10.70	2.10		0.40
Carbon	Merit Energy Company	Jons/Ruth Sweezy Compressor Station	MD-941					8.10			8.30	13.60	1.40	5.50
Carbon	Merit Energy Company	South Baggs Compressor Station	CT-3542	9.05	509.82	12.5	0.76	16.20			5.40	12.80	0.70	5.60
Carbon	Samson Resources Company	Echo Springs Compressor Station	CT-3432					34.60			27.70	14.90	1.90	1.90
Carbon	Western Gas Resources, Inc.	Snow Bank	CT-3778					18.20			33.20	6.40	0.80	1.00
Carbon	Williams Field Services Company	Echo Springs Samson Dehydrator Station	CT-3590					4.60			8.20	18.00		6.80
		Carbon County Total		9.82	633.80	30.08	0.51	291.70	0.00	0.00	212.10	155.80	15.17	35.17
Converse	Bowers Oil & Gas, Inc.	CBM #3 Antelope CM	CT-3709					3.50			3.50	3.20	0.21	0.21
Converse	Merit Energy Company	Sage Creek Gas Plant	MD-920	15	422	10	0.31	3.10			1.80	0.30		0.30
Converse	Thunder Creek Gas Services	Buckshot Treating Facility	MD-1142					15.00			5.40	21.50	1.50	1.50
		Converse County Total		9.82	633.80	30.08	0.51	21.60	0.00	0.00	10.70	25.00	1.71	2.01
Fremont	Bill Barrett Corporation	Poison Creek Compressor Station	CT-3788					39.40			13.20	34.10	1.80	2.40
Fremont	Burlington Resources Oil and Gas Co	MBE Compressor	MD-960					0.60			1.50	4.90	0.00	0.80
Fremont	Devon Energy Production Company, L.P	Beaver Creek East Station	MD-1112					0.00			0.00	8.00		6.90
Fremont	EnCana Oil and Gas (USA), Inc.	Frenchie Draw Graham Unit Central Tank Batte	CT-3436	15	422	10	0.31	4.00			1.00	31.60		0.60
Fremont	EnCana Oil and Gas (USA), Inc.	Frenchie Draw Satellite/Graham West Station	MD-980	9.05	509.82	12.5	0.76	18.00			25.10	7.80		0.70
Fremont	EnCana Oil and Gas (USA), Inc.	Frenchie Draw/Graham Unit #5	CT-3467	9.05	509.82	12.5	0.76	36.00			50.70	63.00	1.60	2.00
Fremont	EnCana Oil and Gas (USA), Inc.	Fuller Compressor Station	CT-3449	8.23	895.37	15.7	0.3	47.90			42.20	25.50	2.90	3.90
Fremont	EnCana Oil and Gas (USA), Inc.	GBU Monita 1 Central Facility	CT-3949					19.40			2.90	28.50	1.70	1.70
Fremont	EnCana Oil and Gas (USA), Inc.	Glasner Compression Facility	CT-4225					18.80			6.60	39.60		1.00
		Fremont County Total		9.82	633.80	30.08	0.51	184.10	0.00	0.00	143.20	243.00	8.00	20.00
Johnson	Rowdy Pipeline, LLC	Iberlin Compressor Station	CT-4199					24.80			49.20	24.80	1.70	1.70
Johnson	Rowdy Pipeline, LLC	Pumpkin Creek Central Compressor Station	MD-751A2					0.60			2.00	3.70	0.17	0.17
Johnson	Rowdy Pipeline, LLC	Shadow Compressor Station	CT-3387					24.60			15.60	9.80	1.20	1.20
Johnson	Western Gas Resources, Inc.	Beecher	CT-3729					74.40			29.70	49.10	4.24	4.24
Johnson	Western Gas Resources, Inc.	Bullwacker/Pine Ridge Compressor Station	MD-1289					96.00			31.80	64.20	4.50	4.50
Johnson	Western Gas Resources, Inc.	Cinderella	MD-1264					121.40			99.50	81.20	5.80	5.80
Johnson	Western Gas Resources, Inc.	Luke-Gus Compressor Station	MD-1275					65.10			161.90	62.00	4.40	4.40
Johnson	Western Gas Resources, Inc.	Ollie	CT-3728					74.40			29.70	49.10	4.24	4.24
Johnson	Western Gas Resources, Inc.	Pumpkin/Bruno Compressor Station	MD-922					59.00			73.70	50.20	1.60	3.30
Johnson	Western Gas Resources, Inc.	Pumpkin/Bruno Compressor Station	MD-1113					126.90			231.40	122.30	1.74	1.74
		Johnson County Total		9.82	633.80	30.08	0.51	667.20	0.00	0.00	724.50	516.40	29.59	31.29
Laramie	Frontier Oil and Refining Company	Frontier Refinery	MD-1021					0.00	0.00		0.00	4.80		
Laramie	Frontier Oil and Refining Company	Frontier Refinery	MD-1115A					0.00	0.00	0.00	3.10	0.00		0.00
		Laramie County Total		9.82	633.80	30.08	0.51	0.00	0.00	0.00	3.10	4.80	0.00	0.00
Lincoln	Duke Energy Field Services, LP	Muddy Creek Compressor Station	CT-3384					16.20			32.80	21.40	0.80	1.30
Lincoln	Williams Field Services Company	Opal Gas Plant	MD-917	16.69	742	1.37	34.17	(550.60)			32.00	155.30		25.70
		Lincoln County Total		9.82	633.80	30.08	0.51	(534.40)	0.00	0.00	64.80	176.70	0.80	27.00
Natrona	Bill Barrett Corporation	Cave Gulch #24 Compressor Station	CT-3900A					38.80			13.00	40.10	1.82	2.47
Natrona	Bill Barrett Corporation	Wallace Creek Compressor Station	MD-954	7.32	734.8	35.4	0.3	55.70			47.90	53.10	2.20	10.90
Natrona	McMurry Ready Mix	Portable Diesel Generator	CT-4296					61.70			8.20	1.40		0.80
		Natrona County Total		9.82	633.80	30.08	0.51	156.20	0.00	0.00	69.10	94.60	4.02	14.17
Sublette	Bill Barrett Corporation	Wild Horse Butte Compressor Station	CT-3687					39.80			15.80	36.60		2.50
Sublette	McMurry Oil Company	Stud Horse Butte 8-20-29-108	CT-3572					0.30			0.10	39.30		8.00
Sublette	Petrogulf Corporation	Petrogulf State 36-CPF (compressor station)	CT-4161					5.70			2.80	5.70		0.40
Sublette	Questar Gas Management Company	Mesa Well 15-6 CDP	CT-4064					10.60		0.40	9.10	4.10	0.40	0.40
		Sublette County Total		9.82	633.80	30.08	0.51	56.40	0.00	0.40	27.80	85.70	0.40	11.30
Sweetwater	Anadarko E&P Company, LP	Higgins Dehydration Facility	CT-4008					0.90		74.40	2.20	8.10		2.70
Sweetwater	Duke Energy Field Services, LP	Yates Bicycle Federal Compressor #18	CT-3477	9.05	509.82	12.5	0.76	6.30			1.90	23.40	0.40	4.20
Sweetwater	Duke Energy Field Services, LP	Yates Bicycle Federal Compressor #6	CT-3507	9.05	509.82	12.5	0.76	6.30			1.90	23.40	0.40	6.80
Sweetwater	Duke Energy Field Services, LP	Yates Huffy State Compressor #16	CT-3508	9.05	509.82	12.5	0.76	6.30			1.90	23.40	0.40	6.80
Sweetwater	Enterprise NGL Pipelines, LLC	Rock Springs Station	MD-1006					3.10			16.50	0.80	0.00	0.00
Sweetwater	Marathon Oil Company	Wamsutter A-7	MD-1248					5.30			10.70	2.10		0.40
Sweetwater	Mountain Gas Resources	Granger Gas Plant	MD-963	7.92	904	32.9	0.38	16.60			32.70	5.50	0.80	1.60
Sweetwater	Mountain Gas Resources	Hay Reservoir Central Compressor Station	MD-975	13.11	880.4	20	0.46	16.70			33.30	20.70	0.80	2.10
Sweetwater	Mountain Gas Resources	Sevenmile Gulch Compressor Station	MD-1316					0.60			0.40	2.40		0.28
Sweetwater	Mountain Gas Resources	Storm Shelter Compressor Station	MD-935	9.05	509.82	12.5	0.76	3.30			0.80	6.10		4.10
Sweetwater	Mountain Gas Resources	Wild Rose Compressor Station	CT-3412	6.7	903.7	32.9	0.38	120.60			232.70	41.40	8.40	9.30
Sweetwater	Pacificorp	Jim Bridger Plant	MD-1138					(4,946.00)	0.00	0.00	9,842.00	0.00		0.00
Sweetwater	Warren E & P, Inc.	Pacific Rim Generator Station #1	CT-3472	9.05	509.82	12.5	0.76	10.50			10.50	10.50	0.52	0.52
Sweetwater	Warren E & P, Inc.	Rifes Rim Compressor Station #1	CT-4072					10.50			10.20	5.10		0.70
Sweetwater	Western Gas Resources, Inc.	Church Butte	MD-1221					0.40			0.30	7.00		5.70
Sweetwater	Williams Field Services Company	Frewan Lake Compressor Station	MD-1242					15.90			17.80	23.70		0.10
		Sweetwater County Total		9.82	633.80	30.08	0.51	(4,722.70)	0.00	74.40	10,215.80	203.60	11.72	45.30
Uinta	Questar Gas Management Company	Lateral 1127	CT-3841					15.30			5.20	19.70	0.70	0.90
Uinta	Questar Pipeline Company	Leroy Storage Compressor Station	MD-1049					3.50			3.00	11.10		3.90
Uinta	Questar Pipeline Company	Leroy Well 10	MD-1218					0.10			0.10	3.50		1.60
Uinta	Questar Pipeline Company	Leroy Well 6	MD-1217					0.10			0.10	7.90		3.60
		Unita County Total		9.82	633.80	30.08	0.51	19.00	0.00	0.00	8.40	42.20	0.70	10.00
							Wyoming Total State-Permitted Source Emissions	(3,860.90)	0.00	74.80	11,479.50	1,547.80	72.11	196.24

Table 4. Wyoming Included RFFA Sources

Wyoming RFFA Source Inventory in Moxa Arch Infill Drilling Project Modeling Domain - Table of Included Sources (Including VOCs and HAPs)

County	Company	Facility	Permit No.	Height (m)	Temp (k)	Velocity (m/s)	Diameter (m)	NOx	PM10	SOx	CO	VOC	Formal-dehyde	HAP Total
Albany	Colorado Interstate Gas	Laramie Compressor Station	MD-360A					5.30			3.60	0.00		0.00
Albany	Mountain Cement Company	Laramie Cement Plant	MD-996					0.00	3.90	0.00	0.00	0.00		0.00
		Albany County Total		9.82	633.80	30.08	0.51	5.30	3.90	0.00	3.60	0.00	0.00	0.00
Carbon	Anadarko E&P Company, LP	Baton Rouge Federal 18-3	CT-3487					0.60			0.20	3.00		0.10
Carbon	Anadarko E&P Company, LP	Creston III 1-8	CT-3363					0.80			0.20	4.00		0.10
Carbon	Anadarko E&P Company, LP	Echo Springs 3-30	CT-3112					1.00			0.30	7.70		
Carbon	Anadarko E&P Company, LP	Echo Springs State 4-16 Well Site	CT-2927					1.70			0.40	8.90		
Carbon	Anadarko E&P Company, LP	Federal 1691 8I Injection Well	MD-1110					22.20			33.40	10.00	1.56	1.56
Carbon	Anadarko E&P Company, LP	Federal BF 2-30	CT-3043					1.30			0.40	6.90		
Carbon	Anadarko E&P Company, LP	Hanna Draw	CT-4009					57.30			56.10	32.60	3.00	3.00
Carbon	Anadarko E&P Company, LP	Narco State Pad Facility	CT-2578					0.50			0.20	3.10		
Carbon	Anadarko E&P Company, LP	Pickette Federal 8-3	CT-3476					0.70			0.20	4.10		0.10
Carbon	Anadarko E&P Company, LP	Wamsutter Federal 3-18	CT-2320					0.40			0.10	4.50		
Carbon	Anadarko Gathering Company	Doty Mountain Compressor Station	MD-1071					17.50			5.80	5.20	0.82	0.82
Carbon	Anadarko Gathering Company	Jolly Rogers Pod Compressor Station	MD-1063					11.70			23.30	5.20	0.58	0.58
Carbon	Anadarko Gathering Company	Jolly Rogers Pod Compressor Station	CT-3624					46.80			35.00	22.10	2.22	2.22
Carbon	Anadarko Gathering Company	Muddy Mountain Compressor Station	CT-3352	11	730.4	71.6	0.25	46.70			29.20	15.70	2.30	2.30
Carbon	Anadarko Gathering Company	Red Rim Compressor Station	MD-1065					17.50			5.80	5.20	0.82	0.82
Carbon	Anadarko Gathering Company	Red Rim Compressor Station	CT-3393	11	730.4	71.6	0.25	53.00			32.30	18.40	2.80	2.80
Carbon	BP America Production Company	Baldy Butte 17-1	CT-2522					1.00				16.20		
Carbon	BP America Production Company	Baldy Butte 19-1	CT-3322					0.40			0.10	12.00		1.50
Carbon	BP America Production Company	Baldy Butte 21-1	CT-3620					0.50			0.10	12.50		1.50
Carbon	BP America Production Company	Baldy Butte 31-1	CT-3953					0.40			0.10	12.10		1.50
Carbon	BP America Production Company	Baldy Butte 33-1	CT-4292					0.40			0.10	12.80		1.50
Carbon	BP America Production Company	Champlin 222 D9	CT-4222					0.40			0.10	12.60		1.50
Carbon	BP America Production Company	Champlin 222 E10	CT-4217					0.40			0.10	11.80		1.40
Carbon	BP America Production Company	Champlin 222 F3	CT-2208					0.70			0.10	14.10		
Carbon	BP America Production Company	Champlin 222 G12	CT-4312					0.40			0.10	12.70		1.50
Carbon	BP America Production Company	Champlin 242 A10	CT-4308					0.40			0.10	12.60		1.50
Carbon	BP America Production Company	Champlin 242 C3	CT-2209					0.70			0.10	14.10		
Carbon	BP America Production Company	Champlin 242 E5	CT-3371					0.40			0.10	12.00		1.50
Carbon	BP America Production Company	Champlin 242 E6	CT-4311					0.40			0.10	12.20		1.50
Carbon	BP America Production Company	Champlin 242 H10	CT-4256					0.30			0.10	11.40		1.40
Carbon	BP America Production Company	Champlin 242 J12	CT-4220					0.40			0.10	12.80		1.50
Carbon	BP America Production Company	Champlin 261 B10	CT-4215					0.40			0.10	12.30		1.50
Carbon	BP America Production Company	Champlin 278 D1A	CT-4157					0.30			0.10	11.10		1.40
Carbon	BP America Production Company	Champlin 278 E4	CT-3145					0.40			0.10	12.20		
Carbon	BP America Production Company	Champlin 337 G11	CT-4221					0.40			0.10	12.60		1.50
Carbon	BP America Production Company	Champlin 337 G7	CT-4276					0.40			0.10	12.40		1.50
Carbon	BP America Production Company	Champlin 444 I4	CT-2207					0.70			0.10	14.10		
Carbon	BP America Production Company	Coal Bank 1-2	CT-4096					0.40			0.10	12.50		5.50
Carbon	BP America Production Company	Coal Bank 5-3	CT-4216					0.40			0.10	13.60		1.60
Carbon	BP America Production Company	Coal Gulch 13-2	CT-3515					0.40			0.10	11.90		1.40
Carbon	BP America Production Company	Coal Gulch F3	CT-3083					0.40			0.10	13.20		
Carbon	BP America Production Company	Creston Federal 4-1	CT-3758					0.50			0.10	12.50		1.50
Carbon	BP America Production Company	Duck Lake 1-2	CT-3070					0.40			0.10	12.40		
Carbon	BP America Production Company	Duck Lake 23-2	CT-3294					0.40			0.10	11.90		1.50
Carbon	BP America Production Company	Duck Lake 25-01	CT-2983					0.90			0.20	12.30		
Carbon	BP America Production Company	Duck Lake 25-2	CT-3323					0.40			0.10	12.00		1.50
Carbon	BP America Production Company	Duck Lake 25-3	CT-3426					0.40			0.10	12.00		1.50
Carbon	BP America Production Company	Duck Lake 25-4	CT-3613					0.50			0.10	12.50		1.50
Carbon	BP America Production Company	Echo Springs 17-1	CT-3909					0.40			0.10	12.20		1.50
Carbon	BP America Production Company	Fillmore Creek 07-01	CT-3906					0.30			0.10	11.80		1.40
Carbon	BP America Production Company	High Point 11-1	CT-4153					0.30			0.10	11.70		1.40
Carbon	BP America Production Company	High Point 13-1	CT-3671					0.60			0.20	13.80		1.60
Carbon	BP America Production Company	High Point 15-1	CT-4214					0.40			0.10	13.50		1.50
Carbon	BP America Production Company	High Point 23-2	CT-3619					0.50			0.10	12.60		1.50
Carbon	BP America Production Company	High Point 23-3	CT-3936					0.30			0.10	12.40		1.50
Carbon	BP America Production Company	High Point 25-1	CT-3405					0.50			0.10	13.80		1.60
Carbon	BP America Production Company	High Point 25-2	CT-3600					0.40			0.10	14.20		1.60
Carbon	BP America Production Company	High Point 25-3	CT-3616					0.50			0.10	12.30		1.50
Carbon	BP America Production Company	High Point 27-1	CT-3431					0.50			0.10	14.90		1.60
Carbon	BP America Production Company	High Point 27-2	CT-3571					0.40			0.10	12.90		1.50
Carbon	BP America Production Company	High Point 27-3	CT-3927					0.30			0.10	13.70		1.50
Carbon	BP America Production Company	High Point 27-4	CT-3929					0.30			0.10	13.70		1.50
Carbon	BP America Production Company	High Point 29-2	CT-3944					0.30			0.10	12.90		1.50
Carbon	BP America Production Company	High Point 31-1	CT-4218					0.40			0.10	11.90		1.40
Carbon	BP America Production Company	Muddy Creek 5-5	CT-3201					0.40			0.10	12.60		
Carbon	BP America Production Company	South Rim 5-2	CT-3087					0.40			0.10	11.70		
Carbon	Cabot Oil & Gas Corporation	Coal Gulch #30-4	CT-2321					1.10			0.30	4.50		
Carbon	Cabot Oil & Gas Corporation	Lookout Wash #1	CT-2760					0.40			0.10	38.30		
Carbon	Cabot Oil & Gas Corporation	Lookout Wash 10-32-15-93	CT-2761					0.10			0.10	30.50		
Carbon	Cabot Oil & Gas Corporation	Lookout Wash 10-8-14-93	CT-2759					1.10			0.20	21.30		
Carbon	Cabot Oil & Gas Corporation	Lookout Wash 40-5-14-93	CT-3099					0.50			0.10	7.40		
Carbon	Cabot Oil & Gas Corporation	Lookout Wash 40-8-14-93	CT-3088					0.50			0.10	13.50		
Carbon	Cabot Oil & Gas Corporation	Lookout Wash Unit 40-8L	CT-4080					0.40			0.10	9.80		1.00
Carbon	Devon Energy Production Company, L.P.	Baggs Mainline/ Blue Gap Compressor Station	MD-1027					17.30			5.80	5.20	0.80	0.80
Carbon	Devon Energy Production Company, L.P.	Blue Gap No. 4-7-14-92	CT-2830					0.30				3.70		
Carbon	Devon Energy Production Company, L.P.	Coal Gulch No. 04-28-17-93	CT-2568					0.30			0.60	3.40		
Carbon	Devon Energy Production Company, L.P.	Coal Gulch No. 16-30-17-93	CT-2861					0.40			0.10	3.00		
Carbon	Devon Energy Production Company, L.P.	East Echo Springs 14-26-19-92	CT-3164					1.00			0.20	5.00		
Carbon	Devon Energy Production Company, L.P.	Standard Draw 1-18-18-93	CT-3079					3.20			0.30	3.20		
Carbon	Devon Energy Production Company, L.P.	Standard Draw 3-32-18-93	CT-2278					0.30			0.10	3.40		
Carbon	Double Eagle Petroleum Company	Cow Creek Unit 34-12	MD-1043					13.20			4.00	3.00	0.72	0.72
Carbon	Dudley & Associates, LLC	Seminoe Compressor Station	CT-2833	7.32	422	27.31	0.4	39.00			13.60	26.20	1.80	
Carbon	EnCana Oil and Gas (USA), Inc.	Lookout Wash 13-4	CT-3343					0.60			0.20	31.70		7.40
Carbon	EnCana Oil and Gas (USA), Inc.	TBI Federal 10-09	CT-2684					0.30			0.10	27.50		
Carbon	Kerr-McGee Oil & Gas Onshore LP	Standard Draw 14-3	CT-3042					3.00			2.70	3.70		
Carbon	Kerr-McGee Oil & Gas Onshore LP	Standard Draw 2-6-18-93	CT-3024					0.50			0.20	3.40		
Carbon	Marathon Oil Company	Standard Draw 11-10	CT-2206					0.40			1.10	9.40		
Carbon	Merit Energy Company	South Baggs Compressor Station	MD-1036					9.20			3.10	2.40	0.40	0.40
Carbon	Nearburg Producing Company	Fillmore 1-18	CT-3907					0.80			0.20	4.50		
Carbon	Nearburg Producing Company	Fillmore 1-19	CT-2885					2.40			0.60	12.70		
Carbon	Nearburg Producing Company	Fillmore 2-18	CT-3908					0.40			0.10	3.70		
Carbon	Nearburg Producing Company	Fillmore 3-19	CT-2884	11.77	450.54	9.51	0.82	6.40			1.60	24.90		
Carbon	Nearburg Producing Company	Fillmore 3-29	CT-3191	11.77	450.54	9.51	0.82	3.70			0.90	28.90		
Carbon	Nearburg Producing Company	Fillmore Federal 2-19	CT-3190	11.77	450.54	9.51	0.82	3.30			0.90	12.60		

Table 4 (continued). Wyoming Included RFFA Sources

Carbon	Nearburg Producing Company	Fillmore Federal 2-20	CT-3265	11.77	450.54	9.51	0.82	3.40			0.90	16.40		0.10
Carbon	Nearburg Producing Company	Fillmore Federal 4-19	CT-3263	11.77	450.54	9.51	0.82	4.80			1.20	23.70		0.20
Carbon	Nearburg Producing Company	Fillmore Federal 4-20	MD-888					0.40			0.10	3.80		0.20
Carbon	Nearburg Producing Company	Fillmore Federal 4-20	CT-3264	11.77	450.54	9.51	0.82	3.40			0.90	16.40		0.10
Carbon	Samson Resources Company	Echo Springs #2-24	MD-896					0.30			0.10	14.40		6.90
Carbon	Samson Resources Company	Echo Springs #23-10	CT-3111					1.50			1.30	13.10		
Carbon	Samson Resources Company	Echo Springs Compressor Station	MD-1123					0.00			0.00	9.10		0.40
Carbon	Samson Resources Company	Echo Springs Compressor Station	CT-3432A					1.20			1.20	1.10	0.10	0.10
Carbon	Shakespeare Oil Company	South Baggs Compressor Station	MD-807					12.30			1.60	14.70		
Carbon	Western Gas Resources, Inc.	Standard Draw 1-18-18-93	CT-3067					0.10				11.40		
Carbon	Western Gas Resources, Inc.	Standard Draw 16-18-18-93	CT-3122					0.10				11.60		
Carbon	Western Gas Resources, Inc.	Standard Draw 16-30-18-93	CT-3069					0.10				14.10		
Carbon	Wexpro Company	Creston Federal 22-3	CT-2580					1.70			0.70	11.70		
Carbon	Wexpro Company	Creston Federal Well 22-4	CT-2996					0.90			0.10	9.40		
Carbon	Williams Field Services Company	Duck Lake 23-1	CT-3002					0.90			0.20	13.00		
Carbon	Williams Field Services Company	Echo Springs Federal 4-6	CT-2811					0.30			0.10	11.20		
Carbon	Williams Field Services Company	Echo Springs Gas Plant	MD-1227					38.50			41.60	15.80		0.30
Carbon	Williams Field Services Company	Echo Springs Gas Plant	MD-606	10.67	560.93	24.43	1.72	119.90			150.20	13.50		
Carbon	Williams Field Services Company	Eight Mile Lake Station	MD-810					0.00			0.00	7.80		
Carbon	Yates Petroleum Corporation	Eucker Federal 1	CT-3386					1.40			0.30	5.40		0.10
Carbon	Yates Petroleum Corporation	Eucker Federal 2	CT-3347					1.20			0.30	4.30		0.10
Carbon	Yates Petroleum Corporation	Seaverson 1	CT-3543					1.60			0.80	11.20		1.40
		Carbon County Total		9.82	633.80	30.08	0.51	605.90	0.00	0.00	467.00	1,392.50	17.92	98.42
Converse	EOG Resources	Crotalus 1-19	CT-3005	15	422	10	0.31	1.00			0.20	11.10	0.00	
Converse	Jim Huxtable	Huxtable Quarry	CT-3787						20.30					
Converse	Kinder Morgan Upstream, LLC	Douglas Gas Plant	MD-1136					0.00			0.00	9.20		0.90
Converse	Kinder Morgan Upstream, LLC	Ross Booster Station	MD-814	9.05	509.82	12.5	0.76	41.50			99.80	53.50	2.00	
Converse	Merit Energy Company	Sage Grouse Booster	MD-743					51.90			93.60	11.50	1.50	
Converse	Thunder Creek Gas Services	Buckshot Treating Facility	MD-959	9.14	730.4	45.5	0.25	29.00			7.10	19.50	0.80	0.80
Converse	Western Gas Resources, Inc.	Sand Dunes Plant	MD-931	10.9	710.93	59.99	0.2	13.30			4.40	8.90	0.60	0.60
Converse	Wyoming Interstate Gas	Douglas Compressor Station	MD-637	12.5	755	38.4	1.22	27.50			30.60	8.80		
Converse	Yates Petroleum Corporation	Chinook Federal 1	CT-4321					1.00			0.30	3.40		0.10
		Converse County Total		9.82	633.80	30.08	0.51	165.20	20.30	0.00	236.00	125.90	4.90	2.40
Fremont	Bill Barrett Corporation	Deer Creek Compressor Station	CT-3690					39.90			11.20	36.50	1.56	2.21
Fremont	Bill Barrett Corporation	Talon 11-32	CT-4151					1.10			17.40	2.40		
Fremont	Bill Barrett Corporation	Talon 31-25	CT-4219					2.10			0.50	4.40		0.10
Fremont	Bill Barrett Corporation	Talon 41-32	CT-4152					0.80			17.30	0.60		
Fremont	Burlington Resources Oil and Gas Co	FEO 1-35 SWD	CT-3146					0.20				7.60		
Fremont	Burlington Resources Oil and Gas Co	MBE Compressor	CT-2735	9.05	509.82	12.5	0.76	25.60			12.80	15.40	1.80	
Fremont	Burlington Resources Oil and Gas Co	MDU #65	CT-2555					0.90			0.20	11.90		
Fremont	Burlington Resources Oil and Gas Co	MDU 56	CT-2696C					1.20			0.30	9.10		
Fremont	EnCana Oil and Gas (USA), Inc.	Castle Gardens Compression Facility	CT-4298					18.80			6.60	26.60		1.00
Fremont	EnCana Oil and Gas (USA), Inc.	Moneta Compressor Station	CT-3950					38.80			49.20	12.00	1.40	1.40
Fremont	Western Gas Resources, Inc.	Fee 1-8	CT-3035					14.40			0.00	0.10		
Fremont	Western Gas Resources, Inc.	Lysite Interconnect	MD-1141					21.20			6.90	16.00	0.90	4.70
Fremont	Wold Oil Properties Incorporated	S. Sand Draw 11-36	MD-1114					1.10			1.10	14.90	0.10	0.30
		Fremont County Total		9.82	633.80	30.08	0.51	166.10	0.00	0.00	123.50	157.50	5.76	9.71
Hot Springs	Merit Energy Company	Hamilton Dome Battery #4	CT-4180						4.20			12.00		0.20
		Hot Springs County Total		9.82	633.80	30.08	0.51	0.00	4.20	0.00	0.00	12.00	0.00	0.20
Johnson	Anadarko E&P Company, LP	Sussex B-2 Tensleep and C Production Battery	MD-1247					2.90		57.30	0.80	6.20		0.50
Johnson	Anadarko Petroleum Company	Pat Pod Compressor Station	CT-3538					46.80			35.10	22.00	2.20	2.20
Johnson	KG Construction	Falxa Pit #2	CT-3970						14.20					
Johnson	Meritage Energy Partners	Culp Draw Battery 14	CT-3216					1.20			0.30	3.10		0.00
Johnson	Rowdy Pipeline, LLC	Iberlin II Compressor Station	CT-4121					90.00			27.00	33.20		
Johnson	Rowdy Pipeline, LLC	Pumpkin Creek Central Compressor Station	CT-2242					43.90			18.10	12.40	2.80	
Johnson	Rowdy Pipeline, LLC	Pumpkin Creek Satellite 1	CT-2243					5.10			7.70	2.00		
Johnson	Rowdy Pipeline, LLC	Pumpkin Creek Satellite 1	CT-3377					24.60			6.10	9.80	1.20	1.20
Johnson	Rowdy Pipeline, LLC	Reno Compressor Station	CT-2619					5.10			2.60	2.00	0.26	
Johnson	Rowdy Pipeline, LLC	Shadow Compressor Station	CT-2244					5.10			7.70	2.00		
Johnson	Thunder Creek Gas Services	Heldt Draw	CT-3990					58.20			19.50	38.70	2.73	2.73
Johnson	Western Gas Resources, Inc.	Bowman Compressor Station	CT-4122					153.90			186.60	128.80	4.16	4.16
Johnson	Western Gas Resources, Inc.	Bullwacker/Pine Ridge Compressor Station	MD-801	7.5	866.48	42.37	0.25	32.40			64.80	32.40	0.30	
Johnson	Western Gas Resources, Inc.	Bullwacker/Pine Ridge Compressor Station	CT-2448	8	899.82	54.86	0.3	68.80			145.30	68.80	2.80	
Johnson	Western Gas Resources, Inc.	Cinderella	CT-3769					75.20			31.30	51.20	3.36	3.36
Johnson	Western Gas Resources, Inc.	Dewars Compressor Station	CT-3402					56.30			70.90	37.40	3.00	3.00
Johnson	Western Gas Resources, Inc.	Dry Fork Compressor Station	CT-4123					120.30			44.90	79.80	6.40	6.40
Johnson	Western Gas Resources, Inc.	Fletcher/Terhune	MD-1085					57.10			25.30	39.10	2.52	2.52
Johnson	Western Gas Resources, Inc.	Fletcher/Terhune	CT-3589					66.90			103.40	60.70	1.30	1.30
Johnson	Western Gas Resources, Inc.	Fletcher/Terhune	MD-1350					113.60			152.30	98.40	2.76	2.76
Johnson	Western Gas Resources, Inc.	Irvine Compressor Station	CT-4138					120.30			44.90	79.80	6.40	6.40
Johnson	Western Gas Resources, Inc.	Jaq Compressor Station	CT-4125					153.90			186.60	128.80	4.16	4.16
Johnson	Western Gas Resources, Inc.	Luke-Gus Compressor Station	CT-3985					98.50			32.60	65.40	4.60	4.60
Johnson	Western Gas Resources, Inc.	Royal	CT-3986					85.20			28.20	56.60	3.98	3.98
Johnson	Western Gas Resources, Inc.	Walker Compressor Station	CT-3408					56.30			70.90	37.30	3.00	3.00
Johnson	Western Gas Resources, Inc.	Walker Compressor Station	MD-1273					84.80			23.00	56.40	3.59	3.59
Johnson	Western Gas Resources, Inc.	Wild Turkey Compressor Station	MD-1219					13.30			4.40	8.80	0.62	0.62
Johnson	Western Gas Resources, Inc.	Wild Turkey Compressor Station	CT-3367					46.00			25.50	30.30	3.40	3.40
Johnson	Windsor Energy Group, LLC	Jepson Compressor Station	MD-755	6.86	729.8	47.71	0.31	6.10			3.10	5.90	0.40	
Johnson	Windsor Energy Group, LLC	Jepson Compressor Station	MD-565A	9.05	509.82	12.5	0.76	3.70			7.40	3.70	0.20	
Johnson	Windsor Energy Group, LLC	Jepson Compressor Station	MD-565	9.05	509.82	12.5	0.76	15.70			31.40	15.70		
		Johnson County Total		9.82	633.80	30.08	0.51	1,711.20	14.20	57.30	1,407.70	1,216.70	66.14	59.88
Laramie	Frontier Oil and Refining Company	Frontier Refinery	MD-839					0.00	0.00	0.00	0.00	9.50		0.60
Laramie	Frontier Oil and Refining Company	Frontier Refinery	MD-798					1.20	0.10	0.80	1.40	17.40		
Laramie	Frontier Oil and Refining Company	Frontier Refinery	MD-1380					0.00	2.14	0.00	0.00	0.00		0.00
Laramie	Frontier Oil and Refining Company	Frontier Refinery	MD-927					6.10	0.40		7.90	1.10		
		Laramie County Total		9.82	633.80	30.08	0.51	7.30	2.64	0.80	9.30	28.00	0.00	0.60
Lincoln	AKA Energy Group LLC	Waterfall Compressor Station	CT-3862					0.40			0.20	12.20		0.80
Lincoln	AKA Energy Group LLC	Waterfall Compressor Station	MD-1334					19.60			6.50	41.00		3.50
Lincoln	Belco Energy Corporation	Champlin 186 G-4	CT-2279					0.30			0.10	16.10		
Lincoln	BP America Production Company	Wilson Ranch 5-19	CT-4209					0.30			0.10	11.50		1.50
Lincoln	Burlington Resources Oil and Gas Co	MDU 9-5 PAD	CT-3707								0.10	9.10		2.00
Lincoln	Chevron USA, Inc.	Ballerina #10-2	CT-2312					1.80			0.40	14.30		
Lincoln	Chevron USA, Inc.	Ballerina #20-10	CT-2716					0.80			0.20	14.40		
Lincoln	Chevron USA, Inc.	Ballerina 40-3	CT-2670					1.20			0.20	18.60		
Lincoln	Chevron USA, Inc.	Ham's Fork 24-3	CT-2718					0.70			0.10	13.40		
Lincoln	Chevron USA, Inc.	Maraposa Federal #1	CT-2671					0.60				11.70		
Lincoln	Chevron USA, Inc.	Mariposa Federal 3	CT-2717					0.50				9.70		
Lincoln	Condor Exploration LLC	Horse Trap Federal #3-35	CT-2685					0.40			0.10	8.30		
Lincoln	Condor Exploration LLC	Slate Creek End Facility	CT-2617	7.62	422	12.5	0.25	8.00			8.00	11.50	0.50	
Lincoln	Enterprise Products	Pioneer Cryogenic Gas Plant	CT-4302					37.50			62.50	117.30		16.40

Table 4 (continued). Wyoming Included RFFA Sources

Lincoln	EOG Resources	Emigrant Hollow 31-21	CT-3711					0.10				19.30		7.00
Lincoln	EOG Resources	Emigrant Springs 20-21	CT-3029					0.20				13.10		
Lincoln	EOG Resources	Emigrant Springs 21-22	CT-3015					0.50			0.10	19.30		
Lincoln	EOG Resources	ESU 20-21 & 26-21	MD-868					0.60			0.20	4.90		0.80
Lincoln	EOG Resources	ESU 28-22	CT-3344									38.60		1.10
Lincoln	EOG Resources	GRBU 212-7	CT-2921									18.00		
Lincoln	EOG Resources	GRBU 216-12	CT-3116					0.10				47.80		
Lincoln	EOG Resources	Opal 4-21	CT-3557									16.80		6.90
Lincoln	Exxon Mobil Corporation	Shute Creek Treating Facility	MD-771	60.66	608	19.34	2.1	141.30	71.60	(1,566.00)	(8,520.20)	57.40		
Lincoln	Jonah Gas Gathering Company	JGGC/OTTCO Interconnect	MD-806					19.30			18.00	25.80		
Lincoln	Jonah Gas Gathering Company	JGGC/OTTCO Interconnect	MD-925	15	422	10	0.31	4.00			21.60	12.80		7.50
Lincoln	Jonah Gas Gathering Company	Pioneer Dew Point Depression Plant	MD-999					8.20			12.80	9.10	0.00	0.80
Lincoln	Jonah Gas Gathering Company	Pioneer Dew Point Depression Plant	CT-3117	15	422	10	0.31	19.60			17.90	32.40	0.80	6.20
Lincoln	Kern River Gas Transmission	Muddy Creek Station	MD-736	17.22	422	13.17	2.59	39.40			47.90	11.40		
Lincoln	Kern River Gas Transmission	Muddy Creek Station	MD-783	17.22	736	12.63	2.75	92.80			112.80	28.00	0.70	
Lincoln	Kerr-McGee Oil & Gas Onshore LP	Champlin 122 D4	CT-2561					0.50			0.20	15.50		
Lincoln	Kerr-McGee Oil & Gas Onshore LP	Champlin 288 C-4	CT-2401					0.50			0.20	16.40		
Lincoln	Kerr-McGee Oil & Gas Onshore LP	Grynberg Fed 1-31 #4	CT-2394					0.50			0.20	16.40		
Lincoln	Kerr-McGee Oil & Gas Onshore LP	Rocky Crossing 1-24	CT-3018					0.40			0.10	13.50		
Lincoln	Kerr-McGee Oil & Gas Onshore LP	Slate Creek 1-11-23-112	CT-3701					0.40			0.10	3.70		0.00
Lincoln	Kerr-McGee Oil & Gas Onshore LP	Wilson Ranch 4-17	CT-4140					0.80			0.20	5.00		0.10
Lincoln	Mountain Gas Resources	Ballerina 10-10	CT-2991									14.60		
Lincoln	Mountain Gas Resources	Hailstone #10	CT-2977									14.30		
Lincoln	Mountain Gas Resources	Helwig 10-8	CT-2562									14.20		
Lincoln	Mountain Gas Resources	Lansdale 28-2	CT-3212									14.50		6.10
Lincoln	Mountain Gas Resources	Lincoln Road 40-29	CT-2886									14.30		2.00
Lincoln	Mountain Gas Resources	Whiskey Butte 40-30	CT-2563									14.40		
Lincoln	Mountain Gas Resources	Ziegler's Wash 1-30	CT-3212									14.30		2.40
Lincoln	Northwest Pipeline Corporation	Kemmerer Compressor Station	MD-702	9.14	422	31.22	1.12	14.90	0.90	0.40	18.40	5.30		
Lincoln	Questar Exploration & Production Company	Reynard 12	CT-3497					1.80			0.40	3.90	0.00	
Lincoln	Questar Exploration & Production Company	Verne Valley 5	CT-2764					1.00			0.20	11.80		
Lincoln	Questar Exploration & Production Company	Verne Vally 8	CT-3540					0.60			0.00	21.60		1.70
Lincoln	Schmid Development LLC	River 10-18	CT-2564					0.80			0.20	6.00		
Lincoln	Wexpro Company	Lansdale 28-2	CT-2751					0.40			0.10	18.60		
Lincoln	Wexpro Company	Lansdale 28-4	CT-2752					0.40			0.10	24.60		
Lincoln	Wexpro Company	MFS 10-4	CT-2755					0.40				18.50		
Lincoln	Wexpro Company	MFS Fee 10-2 Well	CT-2749					1.30			0.20	29.10		
Lincoln	Williams Field Services Company	LaBarge Compressor Station	MD-675	9.05	509.82	12.5	0.76	2.70			8.40	17.20	0.00	
Lincoln	Williams Field Services Company	Opal Gas Plant	MD-1188					0.00			0.00	10.60		0.00
Lincoln	Williams Field Services Company	Opal Gas Plant	MD-917A					0.90			8.00	0.00		0.00
Lincoln	Williams Field Services Company	Opal Gas Plant	MD-1327					12.00			65.40	7.50		2.40
Lincoln	XTO Energy Inc	Fontenelle Compressor Station 14-27	MD-958					0.50			0.20	1.60		0.10
		Lincoln County Total		9.82	633.80	30.08	0.51	439.00	72.50	(1,565.60)	(8,107.80)	1,011.20	2.00	69.30
Natrona	Bill Barrett Corporation	Bull Frog 14-18	MD-1359					38.80			13.00	25.80		1.80
Natrona	Bill Barrett Corporation	Cave Gulch #24 Compressor Station	CT-3900					38.80			13.00	40.10	1.82	2.47
Natrona	Bill Barrett Corporation	Cave Gulch 1-29	MD-1312					38.80			64.80	32.40	1.80	1.80
Natrona	Bill Barrett Corporation	Cave Gulch Gas Conditioning Plant	MD-874	14.4	734.8	41.15	0.3	40.20			11.20	22.40	1.60	2.80
Natrona	Bill Barrett Corporation	Cave Gulch Gas Conditioning Plant	MD-626					61.50			71.70	59.80		
Natrona	Bill Barrett Corporation	Hitchcock Draw	CT-4076					35.60			38.90	29.10	1.72	1.72
Natrona	Bill Barrett Corporation	Stone Cabin 1	CT-3727					4.90			1.20	17.10		6.80
Natrona	Carl D. Underwood Oil & Gas	Burnt Wagon Gas Processing Plant	CT-2370	3.66	422	10	0.15	2.50			1.50	3.60		
Natrona	Chevron USA, Inc.	Bullfrog Compressor Station	MD-351A	5.94	633.71	37.03	0.3	2.30			3.50	1.20		
Natrona	Chevron USA, Inc.	Waltman # 57	CT-2897					1.20			0.20	12.60		
Natrona	Chevron USA, Inc.	Waltman #23	MD-668	11.77	450.54	9.51	0.82	11.60			5.80	11.60	0.90	
Natrona	Chevron USA, Inc.	Waltman 44 Compression Facility	MD-659	5.94	649	52.7	0.3	11.60			5.80	11.60	0.60	
Natrona	Chevron USA, Inc.	Waltman 66	CT-3494					1.20			0.20	11.50	0.70	
Natrona	Defense Technology Corporation	Casper Facilities	MD-762					0.80	0.00		0.10	7.20		
Natrona	EnCana Oil and Gas (USA), Inc.	GBU #7 Central Tank Battery	CT-4019					4.40			6.50	10.30		0.90
Natrona	EnCana Oil and Gas (USA), Inc.	Gun Barrel Central Tank Battery 16	CT-4003					2.70			1.30	25.70		0.80
Natrona	EnCana Oil and Gas (USA), Inc.	West Cave Gulch 4-36	CT-2900					0.20			1.10	17.90		
Natrona	Howell Petroleum Corporation	Salt Creek LACT 4	MD-1157					2.20		11.70	0.70	69.10	6.00	9.00
Natrona	Howell Petroleum Corporation	Salt Creek LACT 5 Tank Battery	MD-970					0.00			0.00	0.00		5.00
Natrona	Nance Petroleum Corporation	Austin Creek Gas Plant	MD-393A					0.00			0.00	11.40		0.20
Natrona	Nance Petroleum Corporation	SRMGU 27-32	MD-620	11.77	450.54	9.51	0.82	17.80			4.90	5.40		
Natrona	Nance Petroleum Corporation	Sun Ranch Federal 1	CT-3537					12.80			5.40	68.80		5.90
Natrona	Natrona County International Airport	Airport	MD-760	11.62	357.93	9.45	0.76	0.70	22.60	0.20	99.10	56.70		
Natrona	Platte Pipe Line Company	Casper Station	MD-803									20.20		
Natrona	Rissler and McMurry Company	Screening and Wash Plant, Casper	RE-174					8.70	0.50	0.03	0.50	0.80		
Natrona	Sinclair Casper Refining Company	Casper Refinery	MD-1075					0.00	0.00	0.00	0.00	1.00		
Natrona	Sinclair Transportation Company	Casper Station	MD-700									3.90		
		Natrona County Total		9.82	633.80	30.08	0.51	339.30	23.10	11.93	350.40	577.20	15.14	39.19
Platte	Suncor Energy (U.S.A.) Pipeline Company	Guernsey Crude Station	MD-636									93.10		
		Platt County Total		9.82	633.80	30.08	0.51	0.00	0.00	0.00	0.00	93.10	0.00	0.00
Portable	Birdsall Sand and Gravel	RE-191	RE-191					13.50	1.00	0.90	2.90	1.10		0.60
Portable	Lee Excavation, Inc.	Portable Extech Jaw Crusher	CT-4007					6.30	2.10	0.30	3.90	0.20		
Portable	Pete Lien & Sons Incorporated	RE-165	RE-165						3.30					
		Portable Location Total		9.82	633.80	30.08	0.51	19.80	6.40	1.20	6.80	1.30	0.00	0.60
Sublette	AEC Oil & Gas (USA) Incorporated	Stud Horse Butte 3-32	CT-2560					0.40			0.10	34.60		
Sublette	Bill Barrett Corporation	Wild Horse Compressor Station	CT-3688					39.80			15.80	36.60		2.50
Sublette	BP America Production Company	Stud Horse Butte 16-15	CT-2963					0.90			0.20	13.00		
Sublette	Chevron USA, Inc.	Birch Creek 134	CT-2997					0.60				16.10		
Sublette	Chevron USA, Inc.	Birch Creek 186	CT-2997					0.60				16.10		
Sublette	Chevron USA, Inc.	Birch Creek Compressor Station @ Battery A	MD-770					56.60			85.00	28.40	8.40	
Sublette	Chevron USA, Inc.	Birch Creek South End Compression	MD-744					0.10			0.00	14.10		
Sublette	Chevron USA, Inc.	Birch Creek Unit 190	CT-4202					0.30			0.10	6.00		2.80
Sublette	Devon Energy Production Company, L.P.	Yellowpoint North CS	CT-3735					6.30			3.00	4.70		1.40
Sublette	Devon Energy Production Company, L.P.	Yellowpoint South CS	CT-3734					6.30			2.90	4.50		1.20
Sublette	Encana Energy Resources Inc.	Castle Creek Compressor Station	CT-2226					2.20			2.20	1.10		
Sublette	EnCana Oil and Gas (USA), Inc.	Hacienda 6-19-28-108	CT-4248					0.40			0.10	19.70		4.90
Sublette	EnCana Oil and Gas (USA), Inc.	Stud Horse Butte 2-22	CT-4204					0.90			0.20	3.80		0.50
Sublette	EOG Resources	B South Tank Battery	CT-2229					0.90			2.60	31.10		
Sublette	EOG Resources	ELBU 56-4D	CT-3098									20.80		
Sublette	EOG Resources	GRBU 301-7d	CT-2990					0.20				16.50		
Sublette	EOG Resources	North LaBarge Shallow Unit Tract 16	MD-696	9.05	509.82	12.5	0.76	2.70			0.40	3.40		1.10
Sublette	Exxon Mobil Corporation	Tip Top T75X-14G	CT-3668					1.70			0.40	4.30		0.10
Sublette	Forest Oil Corporation	Elm Federal No. 23-22	CT-2547					0.40			0.80	40.10		
Sublette	Infinity Oil & Gas of Wyoming	Riley Ridge Compressor Facility #1 and Pod Compres	MD-808	7.32	797.2	45.2	0.3	16.70			5.00	11.70	0.90	
Sublette	Infinity Oil & Gas of Wyoming	Thompson Compressor Station	CT-3300	7.32	403	33.9	0.2	12.60			7.40	11.40	0.74	0.74
Sublette	Jonah Gas Gathering Company	Bird Canyon/County Line Compressor Station	MD-1122					3.00			1.00	2.20		0.30
Sublette	Jonah Gas Gathering Company	Bird Canyon/County Line Compressor Station	CT-2252A	12.19	726.48	29.75	0.7	63.90			33.50	50.10	7.70	

Table 4 (continued). Wyoming Included RFFA Sources

Sublette	Jonah Gas Gathering Company	Bridger Compressor Station	CT-4283					196.40			170.50	115.80		11.60
Sublette	McMurry Oil Company	Cabrito 12-25-29-108	CT-2888					1.00			0.30	15.30		
Sublette	McMurry Oil Company	Hacienda 14-30-28-108	CT-3443					0.30			0.10	18.70		7.00
Sublette	McMurry Oil Company	Jonah Federal 5-5-28-108	CT-2826					1.00			0.30	15.60		
Sublette	McMurry Oil Company	Jonah Federal 6-5-28-108	CT-2891					1.00			0.30	15.60		
Sublette	McMurry Oil Company	Stud Horse Butte 10-33 PAD	CT-2807					1.10			0.50	15.40		
Sublette	McMurry Oil Company	Stud Horse Butte 10-34-29-108	CT-2906					1.00			0.30	15.60		
Sublette	McMurry Oil Company	Stud Horse Butte 10-35 PAD	CT-2882					1.00			0.30	15.40		
Sublette	McMurry Oil Company	Stud Horse Butte 12-35 PAD	CT-2834					1.00			0.30	16.00		
Sublette	McMurry Oil Company	Stud Horse Butte 33-36-29-108	CT-3410					1.20			0.30	16.20		6.80
Sublette	McMurry Oil Company	Stud Horse Butte 3-36-29-108	CT-3057					0.10			0.30	16.90		
Sublette	McMurry Oil Company	Stud Horse Butte 4-35-29-108	CT-2866					1.00			0.30	16.30		
Sublette	McMurry Oil Company	Stud Horse Butte 6-29-29-108	CT-3073					0.30			0.10	40.60		
Sublette	McMurry Oil Company	Stud Horse Butte 6-35 PAD	CT-2883					1.00			0.30	15.30		
Sublette	McMurry Oil Company	Yellow Point 10-12-28-109 PAD	CT-2890					1.00			0.30	15.70		
Sublette	McMurry Oil Company	Yellow Point 14-12-28-109	CT-2818					1.00			0.30	15.10		7.00
Sublette	McMurry Oil Company	Yellow Point 2-13-28-109	CT-2815					1.00			0.30	15.20		
Sublette	McMurry Oil Company	Yellow Point 4-13-28-109	CT-2946					1.00			0.30	15.50		
Sublette	Mountain Gas Resources	Cow Hollow 68	CT-3076					0.30			0.10	14.20		
Sublette	Mountain Gas Resources	Jonah Compressor Station	CT-2280	7.62	904	28.66	0.41	54.90			102.70	36.40		14.20
Sublette	Mountain Gas Resources	Stud Horse Butte 14-24	CT-2413									12.30		
Sublette	Mountain Gas Resources	Stud Horse Butte 2-23	CT-2425									12.00		
Sublette	Mountain Gas Resources	Wild Horse	CT-4050					5.80			11.60	10.60	4.11	4.11
Sublette	Overland Trail Transmission, LLC	Whiskey Buttes 5	CT-3077					0.30			0.10	9.10		
Sublette	Questar Exploration & Production Company	Stewart Point Well 11-33 Pad	CT-2727					0.80			0.10	11.10		
Sublette	Questar Gas Management Company	Stewart Point Well 16-18 CDP	CT-4062					2.30		0.50	0.90	0.10	0.10	0.10
Sublette	Ultra Resources Incorporated	Boulder 5-19	CT-3175					0.60			0.20	7.90		
Sublette	Ultra Resources Incorporated	Boulder 7-19	CT-3304					0.30			0.10	31.00		7.50
Sublette	Ultra Resources Incorporated	Mesa 8-28 Pad	CT-3316					2.90			0.70	8.40		1.50
Sublette	Ultra Resources Incorporated	Mesa 9-34	CT-3288					0.80			0.20	10.50		6.80
Sublette	Ultra Resources Incorporated	Riverside 1-4 PAD	CT-3064					0.70			0.20	9.80		
Sublette	Ultra Resources Incorporated	Riverside 16-3 PAD	CT-3784					0.60			0.20	4.30		0.50
Sublette	Ultra Resources Incorporated	Riverside 2-2	CT-3046					0.30			0.10	12.50		
Sublette	Ultra Resources Incorporated	Riverside 4-10	CT-3268					0.50			0.10	11.00		6.80
Sublette	Ultra Resources Incorporated	Riverside 8-4 PAD	CT-3256					0.30			0.10	9.90		3.90
Sublette	Ultra Resources Incorporated	War Bonnet 6-23	CT-3162					0.80			0.20	10.80		
Sublette	Ultra Resources Incorporated	Warbonnet 13-24	CT-3350					0.90			0.30	4.10		1.80
Sublette	Ultra Resources Incorporated	Warbonnet 4-25	CT-3181					0.70			0.20	10.70		
Sublette	Ultra Resources Incorporated	Warbonnet 7-4	CT-3174					0.70			0.20	9.70		
Sublette	Williams Field Services Company	Big Piney Compressor Station	MD-677	9.05	509.82	12.5	0.76	3.10			9.70	21.40	0.00	
Sublette	Williams Field Services Company	Hogsback 87-30	CT-2791					0.30			0.10	13.60		
Sublette	Williams Field Services Company	LaBarge 28	wv00167					0.30			0.10	7.20		
Sublette	Williams Field Services Company	Saddle Ridge Compressor Station	MD-676	9.05	509.82	12.5	0.76	2.20			6.50	14.80	0.00	
Sublette	Williams Field Services Company	Tip Top 11-1	CT-2790					0.30			0.10	14.30		
Sublette	Williams Production Company	Riley Ridge 14-33F	CT-3232					0.30			0.10	32.60		5.00
		Sublette County Total		9.82	633.80	30.08	0.51	509.90	0.00	0.50	471.00	1,150.80	21.95	100.15
Sweetwater	Anadarko E&P Company, LP	Brady 46F	CT-2713					0.70			0.20	7.90		
Sweetwater	Anadarko E&P Company, LP	Chambers Federal 3-24	CT-2639					0.80			0.20	3.50		
Sweetwater	Anadarko E&P Company, LP	Red Desert 10-1	CT-3161					0.60			0.20	4.90		
Sweetwater	Anadarko E&P Company, LP	Table Rock Gas Plant	MD-767					104.20		80.10	20.50	18.90		
Sweetwater	Anadarko E&P Company, LP	Wells Bluff 13-1	MD-869					0.90			0.30	4.20		0.10
Sweetwater	Anadarko Gathering Company	Big Robbie Compressor Station	CT-3326	9.05	509.82	12.5	0.76	17.70			6.00	7.30	1.80	1.80
Sweetwater	Anadarko Petroleum Company	Greasewood Wash 11-35	CT-4095					69.30			21.30	16.80		0.21
Sweetwater	BCCK Engineering, Inc.	Pretty Water Gas Plant	CT-2969	15	422	10	0.31	13.80			18.60	8.10		3.10
Sweetwater	BP America Production Company	Barrel Springs 11-1	CT-3801					0.40			0.10	12.00		1.50
Sweetwater	BP America Production Company	Battle Springs 13-1	CT-3935					0.30			0.10	11.50		1.40
Sweetwater	BP America Production Company	Battle Springs 27-3	CT-4245					0.50			0.10	13.70		1.60
Sweetwater	BP America Production Company	Battle Springs 35-1	CT-3423					0.40			0.10	13.60		1.50
Sweetwater	BP America Production Company	Buck Draw 11-1	CT-4131					0.40			0.10	12.00		1.50
Sweetwater	BP America Production Company	Buck Draw 29-1	CT-3888					0.30			0.10	12.20		1.50
Sweetwater	BP America Production Company	CG Road Unit 35-6	CT-3535					0.30			0.10	12.20		1.50
Sweetwater	BP America Production Company	CG Road Unit 9-1	CT-3951					0.30			0.10	11.80		1.40
Sweetwater	BP America Production Company	CG Road Unit 9-2	CT-3960					0.30			0.10	13.30		1.50
Sweetwater	BP America Production Company	Chain Lakes 27-1	CT-4130					1.40			0.40	14.70		1.60
Sweetwater	BP America Production Company	Chain Lakes 29-2	CT-4100					0.50			0.10	14.80		1.60
Sweetwater	BP America Production Company	Champlin 221 A4	CT-3187					0.40			0.10	12.00		
Sweetwater	BP America Production Company	Champlin 222 A11	CT-4280					0.40			0.10	12.50		1.50
Sweetwater	BP America Production Company	Champlin 222 A13	CT-4316					0.40			0.10	11.80		1.50
Sweetwater	BP America Production Company	Champlin 222 A5	CT-4306					0.40			0.10	12.20		1.50
Sweetwater	BP America Production Company	Champlin 254 D2	CT-3989					0.40			0.10	13.30		1.50
Sweetwater	BP America Production Company	Champlin 257 B2	CT-3425					0.40			0.10	11.90		1.40
Sweetwater	BP America Production Company	Champlin 261 A5	CT-2974					0.90			0.20	12.20		
Sweetwater	BP America Production Company	Champlin 261 I-1A	CT-4249					0.50			0.10	14.20		0.60
Sweetwater	BP America Production Company	Champlin 261 I2	CT-3345					0.40			0.10	12.20		1.50
Sweetwater	BP America Production Company	Champlin 261 I3	CT-3351					0.40			0.10	12.90		1.50
Sweetwater	BP America Production Company	Champlin 261 I-5	CT-4241					0.40			0.10	13.10		1.50
Sweetwater	BP America Production Company	Champlin 261 I-7	CT-4230					0.40			0.10	12.50		1.50
Sweetwater	BP America Production Company	Champlin 263 B5 Well Site	CT-2837					0.40			0.10	16.60		
Sweetwater	BP America Production Company	Champlin 263 H2	CT-3924					0.10			0.30	11.90		1.50
Sweetwater	BP America Production Company	Champlin 270 B2	CT-3954					0.30			0.10	11.40		1.40
Sweetwater	BP America Production Company	Champlin 292 B3	CT-3210					0.40			0.10	12.20		1.50
Sweetwater	BP America Production Company	Champlin 320 B2	CT-3930					0.50			0.10	14.40		1.60
Sweetwater	BP America Production Company	Champlin 336 G2	CT-2972					0.90			0.20	12.00		
Sweetwater	BP America Production Company	Champlin 337 A7	CT-4315					0.40			0.10	13.20		1.50
Sweetwater	BP America Production Company	Champlin 337 G4 Well Site	CT-2659					0.30			0.10	14.10		
Sweetwater	BP America Production Company	Champlin 345 B2	CT-3007					0.90			0.20	12.30		
Sweetwater	BP America Production Company	Champlin 452 C5	CT-2934					0.90			0.20	12.50		
Sweetwater	BP America Production Company	Champlin 452 E5	CT-2917					0.90			0.20	12.70		
Sweetwater	BP America Production Company	Champlin 452 I2	CT-3939					0.30			0.10	11.80		1.40
Sweetwater	BP America Production Company	Champlin 452 L2	CT-3922					0.40			0.10	11.90		1.50
Sweetwater	BP America Production Company	Cherokee Federal 32-2	CT-4156					0.30			0.10	11.80		1.40
Sweetwater	BP America Production Company	Coal Bank 23-1	CT-3928					0.30			0.10	11.50		1.40
Sweetwater	BP America Production Company	Crooks Gap 10 S-3	CT-3107					0.40			0.10	15.70		
Sweetwater	BP America Production Company	Crooks Gap 11-4	CT-3469					0.40			0.10	13.00		1.50
Sweetwater	BP America Production Company	Crooks Gap 20-03	CT-3127					0.40			0.10	12.60		
Sweetwater	BP America Production Company	Crooks Gap Raod 10-02	CT-3252					0.40			0.20	12.10		1.50
Sweetwater	BP America Production Company	Crooks Gap Road 10 S-1	CT-3370					0.40			0.10	13.30		1.50
Sweetwater	BP America Production Company	Crooks Gap Road 10 S-2	CT-3105					0.40			0.10	14.00		
Sweetwater	BP America Production Company	Crooks Gap Road 10 S-4	CT-3375					0.40			0.10	15.30		1.60
Sweetwater	BP America Production Company	Crooks Gap Road 10-01	CT-3128					0.40			0.10	12.90		

Table 4 (continued). Wyoming Included RFFA Sources

Sweetwater	BP America Production Company	Crooks Gap Road 11-01	CT-3110	0.40	0.10	14.70		
Sweetwater	BP America Production Company	Crooks Gap Road 11-02	CT-3242	0.40	0.10	14.10		1.60
Sweetwater	BP America Production Company	Crooks Gap Road 11-3	CT-3250	0.90	0.20	20.60		2.00
Sweetwater	BP America Production Company	Crooks Gap Road 15-01	CT-3103	0.30	0.10	15.40		
Sweetwater	BP America Production Company	Crooks Gap Road 15-02	CT-3170	0.50	0.10	21.90		
Sweetwater	BP America Production Company	Crooks Gap Road 15-3	CT-3240	0.50	0.20	14.60		1.60
Sweetwater	BP America Production Company	Crooks Gap Road 15-4	CT-3189	1.10	0.30	25.10		
Sweetwater	BP America Production Company	Crooks Gap Road 15-5	CT-3485	0.60	0.20	15.40		1.70
Sweetwater	BP America Production Company	Crooks Gap Road 17-01	CT-2970	0.90	0.20	11.80		
Sweetwater	BP America Production Company	Crooks Gap Road 17-02	CT-3008	0.90	0.20	12.40		
Sweetwater	BP America Production Company	Crooks Gap Road 17-03	CT-2975	0.90	0.20	12.20		
Sweetwater	BP America Production Company	Crooks Gap Road 21-01	CT-3014	0.90	0.20	12.50		
Sweetwater	BP America Production Company	Crooks Gap Road 21-02	CT-3060	0.40	0.10	12.50		
Sweetwater	BP America Production Company	Crooks Gap Road 24	CT-2396	0.70	0.10	15.40		
Sweetwater	BP America Production Company	Crooks Gap Road 25-05	CT-3186	0.40	0.10	12.50		
Sweetwater	BP America Production Company	Crooks Gap Road 25-6	CT-3486	0.40	0.10	13.30		1.50
Sweetwater	BP America Production Company	Crooks Gap Road 25-7	CT-3495	0.40	0.10	12.10	1.50	
Sweetwater	BP America Production Company	Crooks Gap Road 26-5	CT-3376	0.40	0.10	13.40		1.50
Sweetwater	BP America Production Company	Crooks Gap Road 35-7	CT-3524	0.40	0.10	13.00		1.50
Sweetwater	BP America Production Company	Crooks Gap Road 35-S1	CT-3066	0.40	0.10	12.60		
Sweetwater	BP America Production Company	Crooks Gap Road 36-5	CT-3171	0.40	0.10	13.60		
Sweetwater	BP America Production Company	Crooks Gap Road 3-S1	CT-3434	0.40		13.50		1.50
Sweetwater	BP America Production Company	Crooks Gap Road 5-3	CT-3462	0.40	0.10	12.20		1.50
Sweetwater	BP America Production Company	Delaney Rim 23-2	CT-4253	0.60	0.20	15.40		1.70
Sweetwater	BP America Production Company	Delaney Rim 27-1	CT-3755	0.50	0.10	11.90		1.40
Sweetwater	BP America Production Company	Delaney Rim 36-02	CT-3080	0.40	0.10	11.90		
Sweetwater	BP America Production Company	Delaney Rim 5-1	CT-3611	0.40	0.10	12.10		1.50
Sweetwater	BP America Production Company	Desert Flats 11-2	CT-4310	0.40	0.10	12.20		1.50
Sweetwater	BP America Production Company	Desert Flats 15-1	CT-3534	0.30	0.10	13.00		1.50
Sweetwater	BP America Production Company	Desert Flats 19-1	CT-3885	0.40	0.10	12.40		1.40
Sweetwater	BP America Production Company	Desert Flats 29-1	CT-3725	0.50	0.10	11.60		1.40
Sweetwater	BP America Production Company	Desert Flats 3-1	CT-3923	0.40	0.10	12.30		1.50
Sweetwater	BP America Production Company	Divide 17-01	CT-3902	0.40	0.10	12.10		1.50
Sweetwater	BP America Production Company	Divide 21-1	CT-3987	0.30	0.10	11.70		1.40
Sweetwater	BP America Production Company	Divide 27-1	CT-4101	0.50	0.10	12.00		1.50
Sweetwater	BP America Production Company	Divide 5-1	CT-4097	0.40	0.10	12.10		1.50
Sweetwater	BP America Production Company	Divide 7-1	CT-4105	0.30	0.10	11.40		1.40
Sweetwater	BP America Production Company	Eight Mile 13-03	CT-3185	0.40	0.10	11.80		
Sweetwater	BP America Production Company	Eight Mile lake 11-13	CT-4295	0.60	0.20	15.80		1.70
Sweetwater	BP America Production Company	Eight Mile Lake 11-2	CT-3150	0.40	0.10	12.70		
Sweetwater	BP America Production Company	Eight Mile Lake 11-3	CT-3474	0.40	0.10	13.40		1.50
Sweetwater	BP America Production Company	Eight Mile Lake 11-4	CT-3526	0.40	0.10	12.50		1.50
Sweetwater	BP America Production Company	Eight Mile Lake 11-9	CT-4244	0.50	0.10	13.70		1.60
Sweetwater	BP America Production Company	Eight Mile Lake 13-7	CT-4251	0.40	0.10	13.10		1.50
Sweetwater	BP America Production Company	Five Mile 23-1	CT-4158	0.30	0.10	11.90		1.40
Sweetwater	BP America Production Company	Five Mile 7-1	CT-3140	0.40	0.10	13.00		
Sweetwater	BP America Production Company	Five Mile 7-2	CT-3428	0.40	0.10	12.00		1.50
Sweetwater	BP America Production Company	Five Mile Gulch 1	CT-3532	0.40	0.10	12.40		1.50
Sweetwater	BP America Production Company	Five Mile Gulch 19-1	CT-3211	0.40	0.10	12.40		1.50
Sweetwater	BP America Production Company	Five Mile Gulch 19-2	CT-3440	0.40	0.10	12.80		1.50
Sweetwater	BP America Production Company	Five Mile Gulch 29-01	CT-3137	0.40	0.10	12.80		
Sweetwater	BP America Production Company	Fivemile 15-1	CT-3898	0.30	0.10	12.10		1.40
Sweetwater	BP America Production Company	Fivemile 17-1	CT-3905	0.30	0.10	11.60		1.40
Sweetwater	BP America Production Company	Frewen 07-03	CT-2898	0.40	0.10	18.50		
Sweetwater	BP America Production Company	Frewen 12-1	CT-4314	0.40	0.10	13.00		1.50
Sweetwater	BP America Production Company	Frewen 15	CT-2526	1.00	0.20	15.80	0.20	
Sweetwater	BP America Production Company	Frewen 16-02	CT-2919	0.90	0.20	14.80		
Sweetwater	BP America Production Company	Frewen 16-03	CT-3106	0.40	0.10	20.40		
Sweetwater	BP America Production Company	Frewen 16-04	CT-3095	0.40	0.10	17.80		
Sweetwater	BP America Production Company	Frewen 16-05	CT-3281	0.40	0.10	12.80		1.50
Sweetwater	BP America Production Company	Frewen 18-02	CT-3074	0.40	0.10	13.10		
Sweetwater	BP America Production Company	Frewen 19	CT-2523	0.80	0.20	17.20		
Sweetwater	BP America Production Company	Frewen 19-04	CT-2935	0.40	0.10	13.60		
Sweetwater	BP America Production Company	Frewen 19-5	CT-3287	0.40	0.10	12.30		1.50
Sweetwater	BP America Production Company	Frewen 4-1	CT-3359	0.40	0.10	12.30		1.50
Sweetwater	BP America Production Company	Frewen 5-1	CT-3419	0.40	0.10	13.10		1.50
Sweetwater	BP America Production Company	Frewen 9-2	CT-3104	0.40	0.10	17.30		
Sweetwater	BP America Production Company	Frewen 9-3	CT-3109	0.40	0.10	14.50		
Sweetwater	BP America Production Company	Frewen 9-4	CT-3138	0.40	0.10	12.30		
Sweetwater	BP America Production Company	Frewen 9-5	CT-3565	0.40	0.10	12.90		1.50
Sweetwater	BP America Production Company	Frewen 9-6	CT-3553	1.20	0.30	16.50		1.70
Sweetwater	BP America Production Company	Frewen 9-7	CT-3564	1.00	0.20	13.60		1.50
Sweetwater	BP America Production Company	Frewen Unit 23-1	CT-3756	0.50	0.10	12.40		1.50
Sweetwater	BP America Production Company	Jawbone 31-1	CT-3932	0.30	0.10	12.10		1.50
Sweetwater	BP America Production Company	Latham Draw 17-1	CT-4102	0.30	0.10	11.90		1.40
Sweetwater	BP America Production Company	Latham Draw 29-1	CT-3988	0.50	0.20	14.90		1.60
Sweetwater	BP America Production Company	Latham Draw 29-2	CT-4277	0.40	0.10	12.40		1.50
Sweetwater	BP America Production Company	Latham Draw 3-1	CT-4240	0.40	0.10	12.30		1.50
Sweetwater	BP America Production Company	Latham Draw 5-1	CT-3926	0.30	0.10	13.20		1.50
Sweetwater	BP America Production Company	Latham Draw 7-1	CT-4098	0.40	0.10	12.20		1.50
Sweetwater	BP America Production Company	Lost Creek 25-1	CT-3446	0.30	0.10	11.50		1.40
Sweetwater	BP America Production Company	Lost Creek 27-1	CT-3629	0.40	0.10	12.00		1.50
Sweetwater	BP America Production Company	Luman 13-01	CT-3903	0.40	0.10	12.10		1.50
Sweetwater	BP America Production Company	Luman 15-1	CT-3599	0.50	0.10	14.70		1.60
Sweetwater	BP America Production Company	Luman 15-3	CT-4239	0.50	0.10	13.90		1.60
Sweetwater	BP America Production Company	Luman 17-1	CT-3527	0.60	0.20	15.60		1.70
Sweetwater	BP America Production Company	Luman 17-2	CT-4234	0.40	0.10	12.70		1.50
Sweetwater	BP America Production Company	Luman 19-2	CT-3621	0.50	0.10	12.60		1.50
Sweetwater	BP America Production Company	Luman 27-1	CT-3889	0.20		12.20		1.50
Sweetwater	BP America Production Company	Luman 5-1	CT-3435	0.40		13.60		1.50
Sweetwater	BP America Production Company	Luman 9-1	CT-3307	0.70	0.20	17.30		1.80
Sweetwater	BP America Production Company	Luman 9-2	CT-3566	0.50	0.20	14.10		1.60
Sweetwater	BP America Production Company	Mexican Flats 1-2	CT-3937	0.40	0.10	12.10		1.50
Sweetwater	BP America Production Company	Mexican Flats 19-1	CT-3934	0.50	0.20	14.40		1.60
Sweetwater	BP America Production Company	Mexican Flats 19-2	CT-4313	0.40	0.10	12.20		1.50
Sweetwater	BP America Production Company	Mexican Flats 21-1	CT-3552	0.50	0.20	11.70		1.40
Sweetwater	BP America Production Company	Mexican Flats 29-1	MD-1173	0.10		12.00		1.50
Sweetwater	BP America Production Company	Mexican Flats 31-1	CT-4099	0.40	0.10	12.60		1.50
Sweetwater	BP America Production Company	Mexican Flats 33-1	CT-4129	0.40	0.10	12.00		1.50
Sweetwater	BP America Production Company	Monument 17-1	CT-4128	0.30	0.10	11.70		1.40

Table 4 (continued). Wyoming Included RFFA Sources

Sweetwater	BP America Production Company	Monument 19-2	CT-2930					0.40		0.10	16.60		
Sweetwater	BP America Production Company	Monument 19-3	CT-3424					0.50		0.10	12.30		1.50
Sweetwater	BP America Production Company	Monument 27-1	CT-3887					0.30		0.10	12.00		1.50
Sweetwater	BP America Production Company	Monument 29-01 Well Site	CT-2876					0.50		0.10	19.90		
Sweetwater	BP America Production Company	Monument 29-3	CT-3286					0.40		0.10	13.10		1.50
Sweetwater	BP America Production Company	Monument 29-4	CT-3442					0.60		0.30	16.70		1.70
Sweetwater	BP America Production Company	Monument 31-01	CT-2971					0.90		0.20	12.10		
Sweetwater	BP America Production Company	Monument 9-1	CT-3899					0.40		0.10	12.10		1.50
Sweetwater	BP America Production Company	Monument Lake 25-1	CT-3941					0.30		0.10	12.80		1.50
Sweetwater	BP America Production Company	Monument Lake 29-02 Well Site	CT-2827					0.50		0.20	18.50		
Sweetwater	BP America Production Company	Monument Lake 33-2 Well Site	CT-2640					0.30		0.10	15.00		
Sweetwater	BP America Production Company	Red Desert 15-1	CT-3314					0.40		0.10	12.40		1.50
Sweetwater	BP America Production Company	Red Desert 15-2	CT-3448					0.40		0.10	12.60		1.50
Sweetwater	BP America Production Company	Red Desert 15-3	CT-3940					0.30		0.10	12.20		1.50
Sweetwater	BP America Production Company	Red Desert 36-3	CT-3346					0.40		0.10	12.10		1.50
Sweetwater	BP America Production Company	Red Wash 11-1	CT-3243					0.30		0.10	11.90		1.50
Sweetwater	BP America Production Company	Red Wash 15-1	CT-3884					0.50		0.10	12.20		1.50
Sweetwater	BP America Production Company	Red Wash 3-1	CT-3292					0.40		0.10	11.70		1.50
Sweetwater	BP America Production Company	Ruby Knolls 35-1	CT-3933					0.30		0.10	11.80		1.40
Sweetwater	BP America Production Company	Siberia Ridge 1-3	CT-3251					0.40		0.10	12.10		1.50
Sweetwater	BP America Production Company	Sourdough 31-1	CT-3821					0.50		0.10	12.10		1.50
Sweetwater	BP America Production Company	Sourdough Gulch 07-01	CT-3904					0.30		0.10	11.50		1.40
Sweetwater	BP America Production Company	Sourdough Gulch 16-2	CT-3293					0.30		0.10	11.90		11.90
Sweetwater	BP America Production Company	South Rim 5-3	CT-3188					0.40		0.10	12.20		
Sweetwater	BP America Production Company	South Two Rim 13-1	CT-3955					0.40		0.10	12.20		1.50
Sweetwater	BP America Production Company	South Two Rim 13-2	CT-4243					0.40		0.10	12.30		1.50
Sweetwater	BP America Production Company	South Two Rim 15-1	CT-4246					0.40		0.10	12.80		1.50
Sweetwater	BP America Production Company	South Two Rim 25-1	CT-4231					0.40		0.10	11.80		1.40
Sweetwater	BP America Production Company	Three Mile 1-1	CT-3754					0.50		0.10	11.90		1.40
Sweetwater	BP America Production Company	Tierney II 13-2	CT-3598					0.40		0.10	12.60		1.50
Sweetwater	BP America Production Company	Tierney II 22-03	CT-3149					0.40		0.10	15.70		
Sweetwater	BP America Production Company	Tierney II 23-2	CT-3310					0.40		0.10	14.50		1.60
Sweetwater	BP America Production Company	Tierney II 23-3	CT-3308					0.40		0.10	13.50		1.50
Sweetwater	BP America Production Company	Tierney II 23-4	CT-3282					0.40		0.10	14.10		1.60
Sweetwater	BP America Production Company	Tierney II 27-03	CT-3125					0.40		0.10	13.00		
Sweetwater	BP America Production Company	Tierney II 27-2	CT-3082					0.40		0.10	13.70		
Sweetwater	BP America Production Company	Tierney II 28-02	CT-3058					0.40		0.10	13.40		
Sweetwater	BP America Production Company	Tierney II 28-03	CT-3059					0.40		0.10	12.10		
Sweetwater	BP America Production Company	Tierney II 28-04	CT-3081					0.40		0.10	13.90		
Sweetwater	BP America Production Company	Tierney II 29-5 Well Site	CT-2741					0.50		0.20	16.00		
Sweetwater	BP America Production Company	Tierney II 33-03	CT-2968					0.90		0.20	13.30		
Sweetwater	BP America Production Company	Tierney II 33-04	CT-2973					0.90		0.20	14.00		
Sweetwater	BP America Production Company	Tierney II 33-2 Well Site	CT-2701					0.40		0.10	17.50		
Sweetwater	BP America Production Company	Tierney II 33-5	CT-3270					0.40		0.10	13.10		1.50
Sweetwater	BP America Production Company	Tierney II Unit 22-1	CT-4143					0.60		0.20	15.90		1.70
Sweetwater	BP America Production Company	Tierney II Unit 22-5	CT-4238					0.40		0.10	13.60		1.50
Sweetwater	BP America Production Company	Two Rim 03-01	CT-2878					0.40		0.10	15.20		
Sweetwater	BP America Production Company	Two Rim 11-1	CT-3374					0.40		0.10	11.70		1.50
Sweetwater	BP America Production Company	Two Rim 15-1	CT-3597					0.50		0.10	12.40		1.50
Sweetwater	BP America Production Company	Two Rim 17-1	CT-3650					0.50		0.10	12.30		1.50
Sweetwater	BP America Production Company	Two Rim 20-03	CT-2966					0.90		0.20	12.60		
Sweetwater	BP America Production Company	Two Rim 20-04	CT-3006					0.40		0.10	13.70		
Sweetwater	BP America Production Company	Two Rim 20-2	CT-2525					0.70		0.10	16.10	2.50	
Sweetwater	BP America Production Company	Two Rim 21-04	CT-2979					0.50		0.20	14.10		
Sweetwater	BP America Production Company	Two Rim 21-1	CT-3757					0.50		0.10	11.70		1.40
Sweetwater	BP America Production Company	Two Rim 27-1	CT-3675					0.50		0.10	12.00		1.40
Sweetwater	BP America Production Company	Two Rim 29-5	CT-3533					0.50		0.20	14.20		1.60
Sweetwater	BP America Production Company	Two Rim 29-6	CT-3528					0.40		0.10	14.50		1.60
Sweetwater	BP America Production Company	Two Rim 29-7	CT-3498					0.30		0.10	11.80		1.60
Sweetwater	BP America Production Company	Two Rim 2-S1	CT-3334					0.40		0.10	12.20		1.50
Sweetwater	BP America Production Company	Two Rim 30-03	CT-2936					0.90		0.20	12.30		
Sweetwater	BP America Production Company	Two Rim 3-2	CT-3313					0.40		0.10	12.70		1.50
Sweetwater	BP America Production Company	Two Rim 35-1	CT-3525					0.50		0.20	13.20		1.50
Sweetwater	BP America Production Company	Two Rim 36-02	CT-3160					0.40		0.10	12.80		
Sweetwater	BP America Production Company	Two Rim 36-4	CT-3311					0.40		0.10	12.30		1.50
Sweetwater	BP America Production Company	Two Rim Unit 21-5	CT-3959					0.40		0.10	13.60		1.50
Sweetwater	BP America Production Company	Two Rim Unit 9-1	CT-3886					0.50		0.10	12.00		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 1-11	CT-4281					0.40		0.10	12.00		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 1-13	CT-4307					0.40		0.10	12.40		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 1-4	CT-4257					0.40		0.10	12.30		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 15-13	CT-4250					0.40		0.10	12.40		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 15-2	CT-3726					0.40		0.10	11.60		1.40
Sweetwater	BP America Production Company	Wamsutter Rim 15-5	CT-4233					0.30		0.10	11.50		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 1-7	CT-4293					0.40		0.10	12.70		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 1-9	CT-4279					0.40		0.10	13.20		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 23-10	CT-4252					0.40		0.10	12.20		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 27-11	CT-4278					0.40		0.10	13.70		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 27-13	CT-4294					0.40		0.10	12.70		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 27-5	CT-4305					0.40		0.10	12.30		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 34-2	CT-3309					0.40		0.10	12.80		1.50
Sweetwater	BP America Production Company	Wamsutter Rim 9-1	CT-3759					0.50		0.10	11.90		1.40
Sweetwater	BP America Production Company	Wild Rose 13-01	CT-2925					0.90		0.20	12.10		
Sweetwater	BP America Production Company	Wild Rose 13-02	CT-2918					0.90		0.20	12.30		
Sweetwater	BP America Production Company	Wild Rose 13-03	CT-2967					0.90		0.20	12.10		
Sweetwater	BP America Production Company	Wild Rose 13-04	CT-2877					0.40		0.10	16.30		
Sweetwater	BP America Production Company	Wild Rose 35-1	CT-3931					0.40		0.10	11.80		1.40
Sweetwater	BP America Production Company	Windy Hill 5-01	CT-4235					0.30		0.10	11.40		1.40
Sweetwater	Cabot Oil & Gas Corporation	Wamsutter 30-26	CT-3241					1.20		0.30	4.90		0.10
Sweetwater	Chevron USA, Inc.	Table Rock Field-Battery #3	MD-746					0.20		0.60	4.70		
Sweetwater	Colorado Interstate Gas	Table Rock Compressor Station	MD-740					0.20		0.30	11.70	0.00	
Sweetwater	Devon Energy Production Company, L.P.	Red Lakes No. 16-6-18-94	CT-2714					0.40			3.50		
Sweetwater	EnCana Oil and Gas (USA), Inc.	Bravo Unit 02 Central Tank Battery	MD-617	7.32	422	47.85	0.3	19.00		0.80	11.30		
Sweetwater	EnCana Oil and Gas (USA), Inc.	Bravo Unit 02 Central Tank Battery	MD-688					26.50		11.70	51.30		
Sweetwater	EnCana Oil and Gas (USA), Inc.	Great Divide #14	CT-2922					1.40		0.40	8.30		
Sweetwater	EnCana Oil and Gas (USA), Inc.	Hay Reservoir Unit #77	CT-2660					1.40		0.40	4.80		
Sweetwater	EnCana Oil and Gas (USA), Inc.	Jade Unit 1	CT-2724					0.80		0.10	23.20		
Sweetwater	EOG Resources	North Ruger 35-29D	CT-3257					0.90		0.20	21.60		4.50
Sweetwater	Excalibar Minerals, Inc.	Kemmerer Plant	CT-4139					0.70	3.00	0.60			
Sweetwater	Forest Oil Corporation	Forest 1-4-17-94	CT-3097					0.50		0.10	3.90		
Sweetwater	Forest Oil Corporation	Forest 2-32-18-94	CT-3172					0.60		0.10	3.90		

Table 4 (continued). Wyoming Included RFFA Sources

Sweetwater	Forest Oil Corporation	Forest 9-32-18-94	CT-3108					0.40			0.10	3.40		
Sweetwater	Forest Oil Corporation	Wild Rose Federal 11-18	CT-3303					0.60			0.20	3.50		
Sweetwater	Forest Oil Corporation	Wild Rose Federal 11-26	CT-3482					0.50			0.20	3.10		0.10
Sweetwater	Forest Oil Corporation	Wild Rose Federal 2-18-17-94	CT-3147					0.50			0.10	4.40		
Sweetwater	Forest Oil Corporation	Wild Rose Federal 3-26	CT-3463					0.50			0.20	7.10		
Sweetwater	Forest Oil Corporation	Wild Rose Federal 9-18	CT-3317					1.20			0.30	6.00		0.10
Sweetwater	Kerr-McGee Oil & Gas Onshore LP	Echo Springs 4-28-20-93	CT-3554					0.30			0.00	3.20		0.00
Sweetwater	Kerr-McGee Oil & Gas Onshore LP	Shute Creek 23-8	CT-4108					0.20			0.10	3.40		0.20
Sweetwater	Kerr-McGee Oil & Gas Onshore LP	Shute Creek 43-7	CT-4107					0.40			0.10	3.40		0.20
Sweetwater	Marathon Oil Company	Wamsutter 12-32	CT-2703					0.60			0.20	8.60		
Sweetwater	Mountain Gas Resources	AM Tripp NCT 1-2	CT-3212									14.60		6.50
Sweetwater	Mountain Gas Resources	Bitter Creek 21-4	CT-3289									8.60		5.00
Sweetwater	Mountain Gas Resources	Black Butte 11-18-100 Compressor Station	CT-2605	9.14	422	39.62	0.25	7.70			15.40	7.90	0.50	
Sweetwater	Mountain Gas Resources	Black Butte 1-18-100 Compressor Station	CT-2373	12.19	422	42.37	0.25	5.80			11.60	6.00	0.50	
Sweetwater	Mountain Gas Resources	Black Butte 13-18-100 Compressor Station	CT-2606	9.14	422	39.62	0.25	5.80			11.60	6.00	0.30	
Sweetwater	Mountain Gas Resources	Black Butte 23-19-100 Compressor Station	CT-2397A					1.90			3.90	1.90	0.20	
Sweetwater	Mountain Gas Resources	Black Butte 25-19-100 Compressor Station	CT-2607					7.70			15.40	7.90	0.70	
Sweetwater	Mountain Gas Resources	Blue Forest 30-13F	CT-3115									8.30		6.40
Sweetwater	Mountain Gas Resources	Blue Forest 30-14A Well	CT-2923									14.50		2.50
Sweetwater	Mountain Gas Resources	Blue Forest 40-13 Well	CT-2924									9.40		6.80
Sweetwater	Mountain Gas Resources	Blue Forest 40-33	CT-2886									14.30		2.10
Sweetwater	Mountain Gas Resources	Bruff 2-14	CT-3212									13.70		6.80
Sweetwater	Mountain Gas Resources	Bruff 50-24	CT-2596									11.50		
Sweetwater	Mountain Gas Resources	Fabian Ditch 4-2	CT-3212									12.40		6.90
Sweetwater	Mountain Gas Resources	Fabian Ditch Compressor Station	MD-642	7.62	509.82	28.96	0.41	17.50			33.50	10.00	1.00	
Sweetwater	Mountain Gas Resources	Farson Cutttoff 34-26A	CT-2886					0.10				13.30		3.80
Sweetwater	Mountain Gas Resources	Farson Federal 40-35	CT-2886					0.10				12.70		6.80
Sweetwater	Mountain Gas Resources	Farson Federal 60-26	CT-2886									14.30		6.70
Sweetwater	Mountain Gas Resources	Govt. McNamara NCT 1-2	CT-3212									11.40		6.10
Sweetwater	Mountain Gas Resources	Granger Gas Plant	MD-644	4.88	833	24.38	0.06	4.20			2.90	10.70		
Sweetwater	Mountain Gas Resources	Hay Reservoir Central Compressor Station	CT-3101	6.1	422	42.03	0.3	29.00			56.20	35.10		
Sweetwater	Mountain Gas Resources	Horse Shoe Unit 10-34	CT-3143									9.60		6.50
Sweetwater	Mountain Gas Resources	Kinney Springs 3-1	CT-3433					0.10				11.80		6.60
Sweetwater	Mountain Gas Resources	Laney Rim 35-3	CT-3324					0.50			0.10	8.00		6.50
Sweetwater	Mountain Gas Resources	Laney Wash 21-2	CT-4175					0.10				8.00		6.60
Sweetwater	Mountain Gas Resources	Lincoln Road 20-34	CT-2886									14.40		2.20
Sweetwater	Mountain Gas Resources	Lincoln Road 20-9	CT-2886									14.40		1.20
Sweetwater	Mountain Gas Resources	Lincoln Road 40-26	CT-2886									14.30		6.50
Sweetwater	Mountain Gas Resources	Lincoln Road 40-34	CT-2886									14.30		1.20
Sweetwater	Mountain Gas Resources	Lincoln Road 65-4	CT-2886									14.40		2.00
Sweetwater	Mountain Gas Resources	Little Monument 40-27	CT-2886									12.50		6.80
Sweetwater	Mountain Gas Resources	Mesa Federal 40-24	CT-2886									14.40		6.90
Sweetwater	Mountain Gas Resources	Monument Butte 21-28	CT-2886									14.30		
Sweetwater	Mountain Gas Resources	Monument Butte 21-29	CT-2886					0.10				14.40		4.30
Sweetwater	Mountain Gas Resources	Moxa Unit	CT-3212									9.90		6.60
Sweetwater	Mountain Gas Resources	Platnium Federal 30-25	CT-2886									10.50		6.80
Sweetwater	Mountain Gas Resources	Raptor 10-17	CT-2886									14.20		2.50
Sweetwater	Mountain Gas Resources	Red Desert Gas Plant	MD-1143					61.60			115.20	50.50	3.00	3.10
Sweetwater	Mountain Gas Resources	State of WY NCT 2-1	CT-3212									13.80		6.40
Sweetwater	Mountain Gas Resources	Sugarloaf 40-19	CT-3212									14.80		3.60
Sweetwater	Mountain Gas Resources	Texaco V-1 HP	CT-2583									14.30		1.30
Sweetwater	Nance Petroleum Corporation	Monument Lake 4-28	CT-3717					0.30			0.10	47.40		6.90
Sweetwater	Nance Petroleum Corporation	Monument Lake Compressor	MD-949					1.10			4.90	2.20		1.60
Sweetwater	New Mexico Resources, LLC	Bitter Creek Zeolite Mine/Processing Plant	CT-3490	15	422	10	0.31	38.00	9.80	7.90	23.80	3.00		
Sweetwater	Northwest Pipeline Corporation	Green River Compressor Station	MD-1008					7.10			7.10	3.60		
Sweetwater	Questar Exploration & Production Company	Federal Well 19-1	CT-2976					0.90			0.10	17.60		
Sweetwater	Questar Exploration & Production Company	Red Lakes South 10-2	CT-3880					1.40			0.30	3.20		0.30
Sweetwater	Questar Exploration & Production Company	South Baxter Unit 22	CT-3548					0.60				12.80		6.50
Sweetwater	Questar Exploration & Production Company	Wedge 6	CT-2762					1.20			0.20	33.30		
Sweetwater	Questar Exploration & Production Company	Wedge Unit 14	CT-3820					1.20			0.30	25.70		8.10
Sweetwater	Questar Gas Management Company	Blacks Fork Gas Plant	MD-1106					1.10			0.20	6.10	0.00	0.70
Sweetwater	Questar Gas Management Company	Blacks Fork Gas Plant	MD-638	9.14	869	69.17	0.46	32.40			32.40	4.80	1.60	
Sweetwater	Questar Gas Management Company	Dripping Rock Compressor Station	MD-780					0.00			0.00	1.40		
Sweetwater	Questar Gas Management Company	Dripping Rock Compressor Station	MD-943					0.00			0.00	2.90	1.20	2.50
Sweetwater	Questar Gas Management Company	South Baxter Compressor Station	CT-3730					13.80			4.80	28.30		1.60
Sweetwater	Questar Gas Management Company	Vermillion Creek Compressor Station	MD-549A	9.05	509.82	12.5	0.76	3.60			4.30	0.00		
Sweetwater	Samson Resources Company	Battle Federal 1-30-24-94	CT-3504					11.60			5.80	11.60	0.80	0.80
Sweetwater	Samson Resources Company	Janet Federal 1	MD-1338					0.50			0.10	10.60		6.20
Sweetwater	Saurus Resources Incorporated	MH-1 Compressor Station	CT-2301	9.05	509.82	12.5	0.76	12.20			12.10	8.90	0.80	
Sweetwater	Saurus Resources Incorporated	MH-1 Compressor Station	MD-660	9.05	509.82	12.5	0.76	20.00			6.70	5.90	0.80	
Sweetwater	Simplot Phosphates LLC	Rock Springs Facility	MD-1130					0.00		145.90	0.00	0.00		
Sweetwater	True Oil LLC	Mull Federal 11-18	CT-3385					0.30			0.10	20.80		2.20
Sweetwater	Warren E & P, Inc.	Pacific Rim Compressor Station #1	CT-3471	9.05	509.82	12.5	0.76	17.10			5.70	11.10	0.80	0.80
Sweetwater	Western Gas Resources, Inc.	Church Butte	CT-2739					0.20			0.30	4.50		1.70
Sweetwater	Western Gas Resources, Inc.	Church Butte	MD-821					19.40			6.50	12.90	0.70	2.40
Sweetwater	Western Gas Resources, Inc.	Forest 1-4	CT-3021					0.10			0.00	14.60		
Sweetwater	Western Gas Resources, Inc.	Forest 2-32	CT-3142					0.10				12.10		
Sweetwater	Western Gas Resources, Inc.	Forest 3-4	CT-3047					0.10				14.30		
Sweetwater	Western Gas Resources, Inc.	Forest 4-32	CT-3037					0.10				14.30		
Sweetwater	Western Gas Resources, Inc.	Forest 9-32	CT-3020					0.10				14.30		
Sweetwater	Western Gas Resources, Inc.	Forest 9-4	CT-3023					0.10			0.00	14.50		
Sweetwater	Western Gas Resources, Inc.	Red Lakes 12-10	CT-2999					0.10				14.10		
Sweetwater	Western Gas Resources, Inc.	Red Lakes 13-6-18-94	CT-3096					0.10				11.90		
Sweetwater	Western Gas Resources, Inc.	Red Lakes 8-1	CT-3011					0.10				14.30		
Sweetwater	Western Gas Resources, Inc.	Redlakes #2	CT-2275					0.10			0.01	11.00		
Sweetwater	Western Gas Resources, Inc.	Tierney 2-32	CT-3209					0.10				11.60		2.00
Sweetwater	Western Gas Resources, Inc.	Wamsutter Regulator	MD-741	9.05	509.82	12.5	0.76	2.50			10.10	43.90	0.00	
Sweetwater	Western Gas Resources, Inc.	Wild Rose 11-18	CT-3239					0.10				10.20		6.40
Sweetwater	Western Gas Resources, Inc.	Wild Rose 1-26	CT-3048					0.10				14.10		
Sweetwater	Western Gas Resources, Inc.	Wild Rose 2-18	CT-3041					0.10				14.40		
Sweetwater	Western Gas Resources, Inc.	Wild Rose 9-18	CT-3291					0.10			0.00	14.40		6.00
Sweetwater	Western Gas Resources, Inc.	Wild Rose Federal 1-6	CT-3221					0.10				13.20		6.90
Sweetwater	Western Gas Resources, Inc.	Wild Rose Federal 2-10	CT-3126					0.10				11.30		
Sweetwater	Wexpro Company	Bruff 35	CT-2748					1.00			0.20	15.50		
Sweetwater	Wexpro Company	Canyon Creek 11	CT-2556					0.20				14.50		
Sweetwater	Wexpro Company	Canyon Creek 15	CT-2556					0.40				14.30		
Sweetwater	Wexpro Company	Canyon Creek 19	CT-2556					0.20				14.50		
Sweetwater	Wexpro Company	Canyon Creek 22	CT-2556					0.50				14.40		
Sweetwater	Wexpro Company	Canyon Creek 23	CT-2556					0.50				14.30		
Sweetwater	Wexpro Company	Canyon Creek 27	CT-2556					0.40				14.40		

Table 4 (concluded). Wyoming Included RFFA Sources

Sweetwater	Wexpro Company	Canyon Creek 6	CT-2556					0.10				14.40		
Sweetwater	Wexpro Company	Canyon Creek/Vermillion Complex	MD-605	15	422	10	0.31	34.10			46.40	30.70		
Sweetwater	Wexpro Company	Church Buttes 137	CT-2743					0.40			0.10	14.10		
Sweetwater	Wexpro Company	Church Buttes 49	CT-2743					0.40			0.10	14.20		
Sweetwater	Wexpro Company	Church Buttes 91	CT-2743					0.40			0.10	14.30		
Sweetwater	Wexpro Company	Church Buttes 96	CT-2743					0.50			0.10	14.40		
Sweetwater	Wexpro Company	Church Buttes Unit 104	CT-2743					0.40			0.10	13.30		
Sweetwater	Wexpro Company	Church Buttes Unit 106	CT-2743					0.40			0.10	11.70		
Sweetwater	Wexpro Company	Church Buttes Unit 109	CT-2743					0.40			0.10	14.20		
Sweetwater	Wexpro Company	Church Buttes Unit 117	CT-2743					0.30			0.10	12.00		
Sweetwater	Wexpro Company	Church Buttes Unit 119	CT-2743					0.40			0.10	14.40		
Sweetwater	Wexpro Company	Church Buttes Unit 124	CT-2743					0.40			0.10	11.00		
Sweetwater	Wexpro Company	Church Buttes Unit 125	CT-2743					0.30			0.10	14.40		
Sweetwater	Wexpro Company	Church Buttes Unit 126	CT-2743					0.40			0.10	12.10		
Sweetwater	Wexpro Company	Church Buttes Unit 130	CT-2743					0.40			0.10	14.10		
Sweetwater	Wexpro Company	Church Buttes Unit 133	CT-2743					0.30			0.10	10.70		
Sweetwater	Wexpro Company	Church Buttes Unit 138	CT-2743					0.40			0.10	11.20		
Sweetwater	Wexpro Company	Church Buttes Unit 29	CT-2743					0.30			0.10	14.30		
Sweetwater	Wexpro Company	Church Buttes Unit 30	CT-2743					0.30				12.30		
Sweetwater	Wexpro Company	Church Buttes Unit 32	CT-2743					0.20				13.90		
Sweetwater	Wexpro Company	Church Buttes Unit 34	CT-2743					0.20				14.30		
Sweetwater	Wexpro Company	Church Buttes Unit 40	CT-2743					0.30				12.00		
Sweetwater	Wexpro Company	Church Buttes Unit 41	CT-2743					0.60			0.10	13.90		
Sweetwater	Wexpro Company	Church Buttes Unit 43	CT-2743					0.60			0.10	11.80		
Sweetwater	Wexpro Company	Church Buttes Unit 46	CT-2743					0.60			0.10	14.20		
Sweetwater	Wexpro Company	Church Buttes Unit 47	CT-2743					0.40			0.10	13.70		
Sweetwater	Wexpro Company	Church Buttes Unit 51	CT-2743					0.30			0.10	14.40		
Sweetwater	Wexpro Company	Church Buttes Unit 52	CT-2743					0.30			0.10	14.30		
Sweetwater	Wexpro Company	Church Buttes Unit 60	CT-2743					0.30			0.10	13.10		
Sweetwater	Wexpro Company	Church Buttes Unit 94	CT-2743					0.50			0.10	10.50		
Sweetwater	Wexpro Company	Church Buttes Unit 99	CT-2743					0.50			0.10	13.40		
Sweetwater	Wexpro Company	Church Buttes Unit Well 155	CT-3012					0.40			0.20	8.70		
Sweetwater	Wexpro Company	Church Buttes Units 139	CT-2743					0.40			0.10	12.30		
Sweetwater	Wexpro Company	Kinney 13-1	CT-2710					1.40			0.30	14.10		
Sweetwater	Wexpro Company	Kinney 5	CT-2709					0.30				14.40		
Sweetwater	Wexpro Company	MFS 10-3	CT-2750					0.50			0.10	22.10		
Sweetwater	Wexpro Company	Trail 12	CT-2706					0.20				23.20		
Sweetwater	Wexpro Company	Trail 13	CT-2707					0.40				32.00		
Sweetwater	Wexpro Company	Trail 18	CT-2708					0.70			0.10	44.70		
Sweetwater	Wexpro Company	Trail Unit 21	CT-4237					0.80			0.20	11.50		2.40
Sweetwater	Wexpro Company	Trail Unit Well 15	CT-3258					0.40			0.10	11.00		4.20
Sweetwater	Williams Field Services Company	Janet Federal 10-34	CT-2812					0.30			0.10	9.10		
Sweetwater	Williams Field Services Company	Monument Lake Compressor Station	MD-1237					24.00			29.30	25.70		0.10
Sweetwater	Williams Field Services Company	Wamsutter 12-32	CT-2813					0.30			0.10	9.10		
Sweetwater	Williams Field Services Company	Washakie Point #49	CT-2705					1.00			0.20	5.20		
Sweetwater	Wyoming Interstate Company	Creston Compressor Station	CT-3563					16.50			7.40	11.50	1.60	1.60
		Sweetwater County Total		9.82	633.80	30.08	0.51	801.80	12.80	233.90	591.31	5,227.70	20.50	492.91
Uinta	Cabot Oil & Gas Corporation	Henry 11	MD-805					0.90			0.20	6.00		
Uinta	Clear Creek Storage Company LLC	Clear Creek Gas Storage Facility	MD-956					29.10			18.90	1.60		3.10
Uinta	Harper Contracting, Incorporated	Pit 26	CT-3380						11.20					
Uinta	Kern River Gas Transmission	Coyote Creek	CT-3003	5.39	422	12.5	0.41	44.00			52.90	13.20	0.30	
Uinta	Kerr-McGee Oil & Gas Onshore LP	Berkley Federal 4	CT-4132					0.20			0.10	3.00		0.20
Uinta	Kerr-McGee Oil & Gas Onshore LP	Grace 1-6 #4	CT-3592					0.30				22.30		0.30
Uinta	Questar Exploration & Production Company	Church Buttes 159	CT-4320					0.90			0.20	11.30		7.00
Uinta	Questar Exploration & Production Company	Eakin Ranch 4	CT-2763					1.50			0.40	13.20		
Uinta	Questar Gas Management Company	Emigrant Trail Gas Plant	MD-774					0.30			0.10	33.30	0.00	
Uinta	Union Tank Car Company	Evanston Facility	MD-881					1.00	0.00		0.00	0.00		1.50
Uinta	Wexpro Company	Bruff 13	CT-2745					0.60			0.10	21.90		
Uinta	Wexpro Company	Bruff 24	CT-2746					0.40				22.40		
Uinta	Wexpro Company	Bruff 33	CT-2747					0.20				34.70		
Uinta	Wexpro Company	Butcherknife Spring Unit 8	CT-2742					2.10			0.40	24.90		
Uinta	Wexpro Company	Church Buttes 59	CT-2744					0.30				14.40		
Uinta	Wexpro Company	Church Buttes Unit 103	CT-2744					0.40			0.10	11.60		
Uinta	Wexpro Company	Church Buttes Unit 105	CT-2744					0.40			0.10	14.40		
Uinta	Wexpro Company	Church Buttes Unit 107	CT-2744					0.40			0.10	14.40		
Uinta	Wexpro Company	Church Buttes Unit 11	CT-2744					0.10				14.20		
Uinta	Wexpro Company	Church Buttes Unit 110	CT-2744					0.40			0.10	14.40		
Uinta	Wexpro Company	Church Buttes Unit 111	CT-2744					0.40			0.10	13.60		
Uinta	Wexpro Company	Church Buttes Unit 113	CT-2744					0.40			0.10	13.80		
Uinta	Wexpro Company	Church Buttes Unit 114	CT-2744					0.40			0.10	14.40		
Uinta	Wexpro Company	Church Buttes Unit 120	CT-2744					0.50			0.10	12.40		
Uinta	Wexpro Company	Church Buttes Unit 127	CT-2744					0.40			0.10	12.90		
Uinta	Wexpro Company	Church Buttes Unit 128	CT-2744					0.40			0.10	14.40		
Uinta	Wexpro Company	Church Buttes Unit 129	CT-2744					0.40			0.10	11.20		
Uinta	Wexpro Company	Church Buttes Unit 134	CT-2744					0.40			0.10	11.60		
Uinta	Wexpro Company	Church Buttes Unit 140	CT-2744					0.40			0.10	14.40		
Uinta	Wexpro Company	Church Buttes Unit 4	CT-2744					0.60			0.10	12.80		
Uinta	Wexpro Company	Church Buttes Unit 55	CT-2744					0.60			0.10	12.10		
Uinta	Wexpro Company	Church Buttes Unit 65	CT-2744					0.60			0.10	14.20		
Uinta	Wexpro Company	Church Buttes Unit 68	CT-2744					0.30			0.10	14.20		
Uinta	Wexpro Company	Church Buttes Unit 79	CT-2744					0.50			0.10	11.10		
Uinta	Wexpro Company	Church Buttes Unit 93	CT-2744					0.40			0.10	11.70		
Uinta	Wexpro Company	Church Buttes Unit 95	CT-2744					0.30			0.10	11.10		
Uinta	Wexpro Company	Church Buttes Unit Well 154	CT-3013					0.40			0.20	14.60		
Uinta	Wexpro Company	Church ButtesUnit 36	CT-2744					0.20				12.80		
Uinta	Wexpro Company	Lansdale 10-1	CT-2753					0.80			0.10	21.00		
Uinta	Wexpro Company	Lansdale 4-3	CT-2754					0.40			0.10	18.80		
Uinta	Whiting Oil and Gas Corporation	Whiskey Springs 4	CT-3790					5.60			3.80	2.70		0.20
Uinta	Whiting Oil and Gas Corporation	Whiskey Springs C-1	CT-3789					2.50			2.10	24.10		3.40
Uinta	Whiting Petroleum	Big Springs 15-23	CT-3763					0.50			0.30	3.10		0.20
		Unita County Total		9.82	633.80	30.08	0.51	100.90	11.20	0.00	81.90	594.20	0.30	15.90
Unknown	BP America Production Company	Two Rim 36-3	CT-3312					0.40			0.10	12.10		1.50
Unknown	Devon Energy Production Company, L.P.	Yellow Point 6-1-28-109	CT-2642					0.30			0.10	14.40		
Unknown	EOG Resources	North Ruger 36-32D	CT-3372					0.90			0.20	8.40		4.50
Unknown	EOG Resources	North Ruger 36-32D	CT-3333					0.90			0.70	8.90		4.70
Unknown	McMurry Oil Company	Stud Horse Butte 12-29-29-108	CT-3118					0.30			0.10	48.40		
Unknown	Mountain Gas Resources	Stud Horse Butte 4-24	CT-2541									14.10	6.10	
Unknown	NFP West, RLLP	Farrowing Farms 1&2	CT-3685					0.96		3.50	0.08			
Unknown	Questar Gas Management Company	Creston 22-1 Compressor Station	CT-3691					39.80			39.70	9.40		2.60
Unknown	Ultra Resources Incorporated	War Bonnet 8-26 & War Bonnet 1-26D	CT-3244					1.30			0.40	4.20		0.50
Unknown	Ultra Resources Incorporated	Warbonnet 10-4 Facility	CT-4025					1.40			0.40	3.90		
Unknown	Ultra Resources Incorporated	Warbonnet 1-21	CT-4274					0.70			0.20	3.80		0.10
Unknown	Warren E & P, Inc.	Chicken Springs CS #1	CT-3710					11.30			5.50	10.90		0.80
Unknown	Wexpro Company	Creston Federal 22-2	CT-2579					1.10			0.30	15.30		
		Unknown Location Total		9.82	633.80	30.08	0.51	59.36	0.00	3.50	47.78	153.80	6.10	14.70
Washakie	Hiland Partners, LP	Worland Plant	MD-641					0.00		0.00	0.00	5.80		
Washakie	Red Butte Pipe Line Company	Chatham Station	MD-275A									1.20		
		Washakie County Total		9.82	633.80	30.08	0.51	0.00	0.00	0.00	0.00	7.00	0.00	0.00
			Wyoming Total State-Permitted Source Emissions					4,911.26	164.84	(1,257.67)	(4,318.31)	11,747.60	160.71	903.36

Table 5. State Permitted Wells: Colorado, Wyoming, and Utah

State-Permitted Source Inventory - COGCC, WOGCC, and UDNR-DOGM - Table of Wells by State, Permitted after January 1, 2001

State[1]	County[2]	Total NO_x Emissions per County (tpy)	Percent of County within the Moxa Modeling Domain	Total NO_x Emissions Modeled per County (tpy)
Colorado	Boulder	46.40	58.9%	27.33
	Garfield	1086.20	16.9%	183.02
	Jackson	27.80	100.0%	27.80
	Larimer	33.60	70.1%	23.55
	Moffat	113.40	100.0%	113.40
	Rio Blanco	454.80	86.6%	393.90
	Routt	9.00	100.0%	9.00
			Total Emissions Modeled for Colorado Counties	778.01
Utah	Daggett	0.20	100.0%	0.20
	Duchesne	-31.00	100.0%	-30.99
	Summit	-0.50	46.4%	-0.23
	Uintah	318.20	74.1%	235.82
			Total Emissions Modeled for Utah Counties	204.79
Wyoming	Albany	-1.70	100.0%	-1.70
	Carbon	77.10	100.0%	77.10
	Converse	-56.00	87.2%	-48.84
	Fremont	30.70	89.7%	27.53
	Hot Springs	-88.40	14.7%	-12.96
	Johnson	233.20	1.3%	3.10
	Laramie	-13.00	7.8%	-1.01
	Lincoln	47.20	97.4%	45.96
	Natrona	-112.30	100.0%	-112.26
	Sublette	272.20	100.0%	272.20
	Sweetwater	159.10	100.0%	159.10
	Unita	83.10	98.1%	81.54
	Washakie	-29.30	2.5%	-0.73
			Total Emissions Modeled for Wyoming Counties	489.04
			Total Emissions Modeled for Wyoming Counties	1471.84

[1] Counties for each state shown only if they are within Moxa modeling domain
[2] Counties that are within the Domain but are not listed here did not have any wells listed for the years of interest

Table 6. Utah Included Permitted Industrial Sources

Company Name	S ID	S Name	Cmpnt ID	Cmpnt Unit ID	Cmpnt Description	Cmpnt Stack ID	Stack Height (ft)	Stack Inner Diam (ft)	Stack Exit Temp (F)	Stack Act Flow Rate (cfs)	zPltnt DAQ Long Name	Pltnt ByYr Actual Emsn
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	19464	17	E G Dehydrator	0	0	0.00	0	0.0	VOC	2.6
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	11782	17	high-pressure tank trucks, propane cars	0	0	0.00	0	0.0	VOC	2.0
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5583	8	Reciprocating Driven IC Engines	3301	11.7	0.80	800	54.6	CO	34.0
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5582	7	Reciprocating Driven IC Engines	3300	33.7	0.80	800	54.6	CO	20.8
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5582	7	Reciprocating Driven IC Engines	3300	33.67	0.83	800	54.6	CO	20.8
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5582	07	Reciprocating Driven IC Engines	20309	33.7	0.80	800	54.6	CO	5.8
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5582	07	Reciprocating Driven IC Engines	20309	33.7	0.80	800	54.6	CO	5.8
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5580	05	Reciprocating Driven IC Engines	20307	33.7	0.80		0.0	CO	42.7
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5580	05	Reciprocating Driven IC Engines	20307	33.7	0.80		0.0	CO	42.7
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5578	3	Reciprocating Driven IC Engines	3296	33.67	0.83	800	54.6	CO	5.1
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5578	03	Reciprocating Driven IC Engines	20305	33.7	0.80	800	54.6	CO	24.9
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5578	03	Reciprocating Driven IC Engines	20305	33.7	0.80	800	54.6	CO	24.9
El Paso Field Operations Company	10005	Altamont Main Gas Processing Plant	5577	2	Reciprocating Driven IC Engines	3295	33.67	0.83	800	54.6	CO	26.1
El Paso Field Operations Company	10209	Altamont East Compressor Station	5589	3	Reciprocating Driven IC Engines	20315	31	1.00	800	54.6	CO	66.3
El Paso Field Operations Company	10209	Altamont East Compressor Station	5589	3	Reciprocating Driven IC Engines	20315	31	1.00	800	54.6	CO	31.6
El Paso Field Operations Company	10209	Altamont East Compressor Station	5589	3	Reciprocating Driven IC Engines	20315	31	1.00	800	54.6	CO	31.6
El Paso Field Operations Company	10209	Altamont East Compressor Station	5588	2	Reciprocating Driven IC Engines	20314	31	1.00	800	54.6	CO	44.4
El Paso Field Operations Company	10209	Altamont East Compressor Station	5588	2	Reciprocating Driven IC Engines	20314	31	1.00	800	54.6	CO	68.2
El Paso Field Operations Company	10209	Altamont East Compressor Station	5588	2	Reciprocating Driven IC Engines	20314	31	1.00	800	54.6	CO	68.2
El Paso Field Operations Company	10211	Altamont South Compressor Station	5598	1	Reciprocating Driven IC Engines	20324	31.3	1.30	650	202.9	PM2.5	1.5
El Paso Field Operations Company	10211	Altamont South Compressor Station	5598	1	Reciprocating Driven IC Engines	20324	31.3	1.30	650	202.9	PM10	1.5
El Paso Field Operations Company	10211	Altamont South Compressor Station	5598	1	Reciprocating Driven IC Engines	20324	31.3	1.30	650	202.9	CO	14.7
El Paso Field Operations Company	10219	Bluebell Gas Plant	173743	1	Flare - Emergency	2352	29	0.90	720	49.0	CO	25.0
El Paso Field Operations Company	10219	Bluebell Gas Plant	173743	1	Flare - Emergency	2352	29	0.89	720	49.0	CO	25.0
El Paso Field Operations Company	10219	Bluebell Gas Plant	173743	1	Flare - Emergency	2352	29	0.89	720	49.0	VOC	9.5
El Paso Field Operations Company	10219	Bluebell Gas Plant	12175	1	Submerged-Normal	0	0	0.00	0	0.0	VOC	5.9
El Paso Field Operations Company	10219	Bluebell Gas Plant	5615	13	Reciprocating Driven IC Engines	2357	19	0.72	300	2.0	CO	4.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5615	13	Reciprocating Driven IC Engines	2357	19	0.70	300	2.0	CO	4.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5615	13	Reciprocating Driven IC Engines	2357	19	0.72	300	2.0	VOC	1.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5615	13	Reciprocating Driven IC Engines	2357	19	0.70	300	2.0	VOC	1.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5615	13	Reciprocating Driven IC Engines	2364	25.5	1.17	750	38.0	CO	47.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5615	13	Reciprocating Driven IC Engines	2364	25.5	1.17	750	38.0	CO	47.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5614	12	Reciprocating Driven IC Engines	2356	19	0.72	300	2.0	CO	1.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5614	12	Reciprocating Driven IC Engines	2356	19	0.70	300	2.0	CO	1.8
El Paso Field Operations Company	10219	Bluebell Gas Plant	5605	3	Reciprocating Driven IC Engines	2354	29	0.89	720	49.0	CO	68.9
El Paso Field Operations Company	10219	Bluebell Gas Plant	5605	3	Reciprocating Driven IC Engines	2354	29	0.89	720	49.0	CO	68.9
El Paso Field Operations Company	10219	Bluebell Gas Plant	5605	3	Reciprocating Driven IC Engines	2362	29	0.89	720	49.0	CO	60.9
El Paso Field Operations Company	10219	Bluebell Gas Plant	5604	2	Reciprocating Driven IC Engines	2361	70	0.89	800	3.8	CO	29.6
El Paso Field Operations Company	10219	Bluebell Gas Plant	5603	1	Reciprocating Driven IC Engines	2352	29	0.89	720	49.0	CO	50.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	13181	Fugitive	Pipeline valves	0	0	0.00	0	0.0	VOC	2.0
Merit Energy Company	10679	Bridger Lake Plant	13181	Fugitive	Pipeline valves	0	0	0.00	0	0.0	VOC	2.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5498	8	Reciprocating Driven IC Engines	2265	13.5	0.83	690	49.3	CO	57.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5498	8	Reciprocating Driven IC Engines	2265	13.5	0.83	690	49.3	CO	46.0
Merit Energy Company	10679	Bridger Lake Plant	5498	8	Reciprocating Driven IC Engines	2265	13.5	0.83	690	49.3	CO	46.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5498	8	Reciprocating Driven IC Engines	2265	13.5	0.80	690	49.3	CO	57.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5494	4	Reciprocating Driven IC Engines	2261	13.5	0.83	690	49.3	CO	46.0
Merit Energy Company	10679	Bridger Lake Plant	5494	4	Reciprocating Driven IC Engines	2261	13.5	0.83	690	49.3	CO	46.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5494	4	Reciprocating Driven IC Engines	2261	13.5	0.80	690	49.3	CO	7.2
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5493	3	Reciprocating Driven IC Engines	2260	13.5	0.83	690	49.3	CO	50.3
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5493	3	Reciprocating Driven IC Engines	2260	13.5	0.83	690	49.3	CO	46.0
Merit Energy Company	10679	Bridger Lake Plant	5493	3	Reciprocating Driven IC Engines	2260	13.5	0.83	690	49.3	CO	46.0
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5493	3	Reciprocating Driven IC Engines	2260	13.5	0.80	690	49.3	CO	50.3
Whiting Oil and Gas Corporation	10679	Bridger Lake Plant	5491	1	Reciprocating Driven IC Engines	2258	14.5	0.80	690	49.3	CO	59.2
Simplot Phosphates LLC	10749	Vernal Phosphate Operations	13395	12	Road Maintenance	0	0	0.00	0	0.0	PM2.5	1.8
Simplot Phosphates LLC	10749	Vernal Phosphate Operations	6929	4	Tailings Dam Construction	0	0	0.00	0	0.0	PM10	1.2
Simplot Phosphates LLC	10749	Vernal Phosphate Operations	5244	01	Disturbed Area	0	0	0.00	0	0.0	PM2.5	4.2
Simplot Phosphates LLC	10749	Vernal Phosphate Operations	5244	01	Disturbed Area	0	0	0.00	0	0.0	PM10	21.0
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	172873	CBOP-3	Ethylen Glycol Dehy.	0	0	0.00	0	0.0	VOC	5.4
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	172873	CBDP-3	Ethylen Glycol Dehy.	0	0	0.00	0	0.0	Benzen	2.1
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	172873	CBDP-3	Ethylen Glycol Dehy.	0	0	0.00	0	0.0	Toluen	4.0
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	172873	CBDP-3	Ethylen Glycol Dehy.	0	0	0.00	0	0.0	VOC	10.5
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	172873	CBDP-3	Ethylen Glycol Dehy.	0	0	0.00	0	0.0	Toluen	4.4
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	172873	CBDP-3	Ethylen Glycol Dehy.	0	0	0.00	0	0.0	VOC	11.6
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5557	08	Taurus Turbine #8	2319	40	3.20	920	71503.0	CO	3.1
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5556	07	Taurus Turbine #7	2318	40	3.20	920	71503.0	CO	2.9
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5555	06	Taurus Turbine #6	2317	40	3.20	920	71503.0	CO	3.9
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5554	5	I-R KVSR Unit 5	2316	46	1.96	750	20678.0	CO	14.0
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5554	5	I-R KVSR Unit 5	2316	46	1.96	750	20678.0	VOC	9.3
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5553	4	I-R KVSR Unit 4	2315	46	1.96	750	20678.0	CO	13.4
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5553	4	I-R KVSR Unit 4	2315	46	1.96	750	20678.0	VOC	8.9
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5552	3	I-R KVSR Unit 3	2314	46	1.96	750	20678.0	CO	11.4
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5552	3	I-R KVSR Unit 3	2314	46	1.96	750	20678.0	VOC	7.6
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5551	02	I-R KVSR Unit 2	2313	46	1.96	750	20678.0	CO	16.6
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5551	2	I-R KVSR Unit 2	2313	46	1.96	750	20678.0	CO	13.1
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5551	2	I-R KVSR Unit 2	2313	46	1.96	750	20678.0	VOC	8.7
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5550	1	I-R KVSR Unit 1	2312	46	1.96	750	20678.0	CO	12.5
Questar Pipeline Company	11532	Kastler/Marushack Compressor Station	5550	1	I-R KVSR Unit 1	2312	46	1.96	750	20678.0	VOC	8.3
Ned B. Mitchell Inc.	12098	Vernal Asphalt Plant	20605	SN# CC	Hot Oil Plant, Counter Flow Drum	17113	18.6	2.80	185.5	346.0	CO	1.5

Table 7. Colorado Included Permitted Industrial Sources.

county fips	site id	pollutant code	emission process description	proc emis estim (tpy)	facility name	exit gas flow rate (acfm)	exit gas temp (F)	exit gas velocity (ft per s)	stack diam (ft)	stack height (ft)	construction permit number
081	0152	100414	GLYCOL DEHYDRATOR	1.34	JOURNEY OPERATING LLC	4	212	3.10	0.16	15	97MF0492
081	0152	108883	GLYCOL DEHYDRATOR	1.16	JOURNEY OPERATING LLC	4	212	3.10	0.16	15	97MF0492
081	0049	108883	DEHYDRATION REBOILER	1.07	QUESTAR GAS MANAGEMENT COMPANY	462	350	4.40	0.8	16	
081	0152	1330207	GLYCOL DEHYDRATOR	3.62	JOURNEY OPERATING LLC	4	212	3.10	0.16	15	97MF0492
081	0161	50000	CATERPILLAR G3512TALE RATED AT 812 HP	1.77	QUESTAR GAS MANAGEMENT CO. - LION C.S.	4386	0	93.10	1	15	01MF0787
081	0161	50000	WAUKESHA 17402GL ENGINE RATED AT 1,478 HP	4.10	QUESTAR GAS MANAGEMENT CO. - LION C.S.	0	1100	0.00	1	15	03MF0662
081	0076	50000	WAUKESHA NAT GAS FIRED ICE	1.03	QUESTAR GAS MANAGEMENT - E HIAWATHA C.S.	5498	865	11.60	1	15	04MF0936
081	0067	50000	WAUKESHA L5790GL #397932	1.75	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	6538	650	199.90	0.7	20	91MF625
081	0178	CO	INTERNATIONAL DUAL FUEL GENERATOR	26.23	KOCH EXPLORATION CO LLC - WALKER 12-4	1394	1040	0.00	0.33	7	03MF0810
081	0177	CO	INTERNATIONAL DIESEL/NAT GAS GENERATOR	26.23	KOCH EXPLORATION CO LLC - WALKER 12-2	1394	1040	0.00	0.33	7	03MF0809
081	0269	CO	INTERNATIONAL DUEL FUEL DIESEL/NAT GAS GENERATOR	26.23	KOCH EXPLORATION CO., LLC - CULVERWELL	1394	1040	0.00	0.33	7	03MF1070
081	0224	CO	INTERNATIONAL NAT GAS /DIESEL GENERATOR	6.26	KOCH EXPLORATION CO LLC - WALKER 3-4	1394	1040	0.00	0.33	7	03MF0812
081	0223	CO	JOHN DEERE, SN: RG6081A64535 ENG RATED AT 190 HP	6.26	KOCH EXPLORATION CO LLC - WALKER 3-2	1394	1040	0.00	0.33	7	03MF0811
081	0228	CO	JOHN DEERE/6081,SN:RG6081A164355 ENG RATED @ 190HP	6.26	KOCH EXPLORATION CO, LLC - WALKER 3-3	1394	1040	0.00	0.33	7	03MF0943
081	0143	CO	CATERPILLAR NAT GAS ENGINE RATED AT 95 HP	1.31	JOURNEY OPERATING, LLC - SANDHILLS LEASE	455	0	87.10	0.33	8	01MF0993
081	0272	CO	JOHN DEERE GENERATOR RATED AT 192 HP	6.26	KOCH EXPLORATION - WALKER 3-5	0	900	0.00	0.25	8	04MF1135
081	0168	CO	WASTE GAS FLARE RATED AT 0.15 MMBTU PER HOUR	68.30	KOCH EXPLORATION CO LLC - WALKER 12-5	191	0	37.20	0.3	8	02MF0371
081	0133	CO	CATERPILLAR G3306TA NAT GAS ENGINE	1.30	ARGALI EXPLORATION COMPANY	907	0	176.70	0.33	9	02MF0001
081	0168	CO	2 CUMMINS NAT GAS/DIESEL FUELED ICE	19.40	KOCH EXPLORATION CO LLC - WALKER 12-5	835	995	0.00	0.33	10	03MF0808
081	0169	CO	3 CUMMINS 6BT5.9 170 HP ICE	5.20	KOCH EXPLORATION CO LLC - WALKER 3-1	835	995	0.00	0.33	10	03MF0434
081	0157	CO	NATURAL GAS ENGINE RATED AT 147 HP	1.08	TRUE OIL LLC - CADDIS FEDERAL 33-9	425	0	82.70	0.3	10	00MF0474
081	0268	CO	CATERPILLAR, G3304 ENGINE RATED AT 95HP	2.00	WESTERN GAS RESOURCES - FEDERAL 1-14-28	0	1045	320.00	0.3	11	05MF0004
081	0108	CO	CATERPILLAR G3306-TA	1.50	NANCE PETROLEUM CORP - BLUE GRAVEL FACIL	1019	0	48.30	0.67	11	95MF004-2
081	0105	CO	WAUKESHA ICE 7817OU SN:218057	1.47	JETTA OPERATING CO., INC. CRAIG 1-7	500	0	169.60	0.25	13	94MF789
081	0248	CO	CATERPILLAR, G379-SI-TA-HCR RATED AT 405 HP	43.70	CEDAR RIDGE LLC - CF&8 CORP. #1	0	70	0.00	0.03	14	04MF0467
081	0161	CO	CATERPILLAR G3512TALE RATED AT 812 HP	12.50	QUESTAR GAS MANAGEMENT CO. - LION C.S.	4386	0	93.10	1	15	01MF0787
081	0075	CO	NATURAL GAS FIRED SATURN TURBINE	1.09	QUESTAR PIPELINE CO STATE LINE COMP STA	38967	850	242.20	1.5	15	95MF955-1
081	0169	CO	NATURAL GAS COMBUSTION	83.93	KOCH EXPLORATION CO LLC - WALKER 3-1	0	1000	0.00	0.33	15	02MF0686
081	0067	CO	WAUKESHA ENGINE RATED AT 1300 HP	12.39	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	4840	0	102.60	1	15	01MF0039
081	0161	CO	WAUKESHA 17402GL ENGINE RATED AT 1,478 HP	14.30	QUESTAR GAS MANAGEMENT CO. - LION C.S.	0	1100	0.00	1	15	03MF0662
081	0076	CO	WAUKESHA NAT GAS FIRED ICE	8.20	QUESTAR GAS MANAGEMENT - E HIAWATHA C.S.	5498	865	11.60	1	15	04MF0936
081	0152	CO	CAT G379TA NAT GAS ENGINE	20.04	JOURNEY OPERATING LLC	0	1037	18.90	0.5	16	97MF0493
081	0067	CO	CATERPILLER, G3516LE RATED @ 1,340 HP	2.50	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	0	1100	0.00	2	20	05MF0723
081	0067	CO	WAUKESHA L5790GL #397932	23.90	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	6538	650	199.90	0.7	20	91MF625
081	0049	CO	NATURAL GAS FIRED ICE	13.30	QUESTAR GAS MANAGEMENT COMPANY	0	1100	0.00	2	20	05MF0534
081	0153	CO	WAUKESHA ENGINE RATED AT 827 HP	25.90	WESTERN GAS RESOURCES INC SAND WASH STA	4090	515	14.00	1.44	25	97MF0649
081	0049	CO	WAUKESHA L7042G S/N193857	115.90	QUESTAR GAS MANAGEMENT COMPANY	4100	1050	126.30	0.8	28	
081	0049	CO	INGERSALL RAND 8-XVG	29.20	QUESTAR GAS MANAGEMENT COMPANY	1588	1025	48.90	0.8	32	
081	0049	CO	WAUKESHA L5788G 615HP #1B	118.30	QUESTAR GAS MANAGEMENT COMPANY	3436	1025	162.40	0.67	36	
081	0049	CO	615HP WAUKESHA L5788G #2	138.40	QUESTAR GAS MANAGEMENT COMPANY	3436	1025	162.40	0.67	36	
081	0178	NO2	INTERNATIONAL DUAL FUEL GENERATOR	31.23	KOCH EXPLORATION CO LLC - WALKER 12-4	1394	1040	0.00	0.33	7	03MF0810
081	0177	NO2	INTERNATIONAL DIESEL/NAT GAS GENERATOR	31.23	KOCH EXPLORATION CO LLC - WALKER 12-2	1394	1040	0.00	0.33	7	03MF0809
081	0269	NO2	INTERNATIONAL DUEL FUEL DIESEL/NAT GAS GENERATOR	31.23	KOCH EXPLORATION CO., LLC - CULVERWELL	1394	1040	0.00	0.33	7	03MF1070
081	0224	NO2	INTERNATIONAL NAT GAS /DIESEL GENERATOR	25.80	KOCH EXPLORATION CO LLC - WALKER 3-4	1394	1040	0.00	0.33	7	03MF0812
081	0223	NO2	JOHN DEERE, SN: RG6081A64535 ENG RATED AT 190 HP	25.80	KOCH EXPLORATION CO LLC - WALKER 3-2	1394	1040	0.00	0.33	7	03MF0811
081	0228	NO2	JOHN DEERE/6081,SN:RG6081A164355 ENG RATED @ 190HP	25.80	KOCH EXPLORATION CO, LLC - WALKER 3-3	1394	1040	0.00	0.33	7	03MF0943
081	0143	NO2	CATERPILLAR NAT GAS ENGINE RATED AT 95 HP	1.32	JOURNEY OPERATING, LLC - SANDHILLS LEASE	455	0	87.10	0.33	8	01MF0993
081	0272	NO2	JOHN DEERE GENERATOR RATED AT 192 HP	25.80	KOCH EXPLORATION - WALKER 3-5	0	900	0.00	0.25	8	04MF1135
081	0168	NO2	WASTE GAS FLARE RATED AT 0.15 MMBTU PER HOUR	8.00	KOCH EXPLORATION CO LLC - WALKER 12-5	191	0	37.20	0.3	8	02MF0371
081	0133	NO2	CATERPILLAR G3306TA NAT GAS ENGINE	43.40	ARGALI EXPLORATION COMPANY	907	0	176.70	0.33	9	02MF0001
081	0168	NO2	2 CUMMINS NAT GAS/DIESEL FUELED ICE	11.50	KOCH EXPLORATION CO LLC - WALKER 12-5	835	995	0.00	0.33	10	03MF0808
081	0169	NO2	3 CUMMINS 6BT5.9 170 HP ICE	21.45	KOCH EXPLORATION CO LLC - WALKER 3-1	835	995	0.00	0.33	10	03MF0434
081	0085	NO2	AJAX EA30 PUMPJACK ENGINE	4.72	QUESTAR E & P-JACKS DRAW 16	54	975	0.00	1.25	10	93MF1655-1XP
081	0157	NO2	NATURAL GAS ENGINE RATED AT 147 HP	8.50	TRUE OIL LLC - CADDIS FEDERAL 33-9	425	0	82.70	0.3	10	00MF0474
081	0156	NO2	CATERPIILLAR RATED AT 102 HP	7.13	TRUE OIL LLC - BTA FEDERAL #12-33	326	0	62.30	6	10	00MF0111
081	0268	NO2	CATERPILLAR, G3304 ENGINE RATED AT 95HP	2.00	WESTERN GAS RESOURCES - FEDERAL 1-14-28	0	1045	320.00	0.3	11	05MF0004
081	0108	NO2	CATERPILLAR G3306-TA	19.00	NANCE PETROLEUM CORP - BLUE GRAVEL FACIL	1019	0	48.30	0.67	11	95MF004-2
081	0105	NO2	WAUKESHA ICE 7817OU SN:218057	10.82	JETTA OPERATING CO., INC. CRAIG 1-7	500	0	169.60	0.25	13	94MF789
081	0248	NO2	CATERPILLAR, G379-SI-TA-HCR RATED AT 405 HP	36.00	CEDAR RIDGE LLC - CF&8 CORP. #1	0	70	0.00	0.03	14	04MF0467
081	0161	NO2	CATERPILLAR G3512TALE RATED AT 812 HP	15.70	QUESTAR GAS MANAGEMENT CO. - LION C.S.	4386	0	93.10	1	15	01MF0787
081	0169	NO2	NATURAL GAS COMBUSTION	9.79	KOCH EXPLORATION CO LLC - WALKER 3-1	0	1000	0.00	0.33	15	02MF0686
081	0067	NO2	WAUKESHA ENGINE RATED AT 1300 HP	12.39	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	4840	0	102.60	1	15	01MF0039
081	0161	NO2	WAUKESHA 17402GL ENGINE RATED AT 1,478 HP	14.30	QUESTAR GAS MANAGEMENT CO. - LION C.S.	0	1100	0.00	1	15	03MF0662
081	0076	NO2	WAUKESHA NAT GAS FIRED ICE	8.20	QUESTAR GAS MANAGEMENT - E HIAWATHA C.S.	5498	865	11.60	1	15	04MF0936
081	0152	NO2	CAT G379TA NAT GAS ENGINE	16.03	JOURNEY OPERATING LLC	0	1037	18.90	0.5	16	97MF0493
081	0067	NO2	CATERPILLER, G3516LE RATED @ 1,340 HP	19.40	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	0	1100	0.00	2	20	05MF0723
081	0067	NO2	WAUKESHA L5790GL #397932	19.20	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	6538	650	199.90	0.7	20	91MF625
081	0049	NO2	NATURAL GAS FIRED ICE	13.30	QUESTAR GAS MANAGEMENT COMPANY	0	1100	0.00	2	20	05MF0534
081	0153	NO2	WAUKESHA ENGINE RATED AT 827 HP	25.90	WESTERN GAS RESOURCES INC SAND WASH STA	4090	515	14.00	1.44	25	97MF0649
081	0049	NO2	WAUKESHA L7042G S/N193857	119.70	QUESTAR GAS MANAGEMENT COMPANY	4100	1050	126.30	0.8	28	
081	0049	NO2	INGERSALL RAND 8-XVG	33.40	QUESTAR GAS MANAGEMENT COMPANY	1588	1025	48.90	0.8	32	
081	0049	NO2	WAUKESHA L5788G 615HP #1B	99.40	QUESTAR GAS MANAGEMENT COMPANY	3436	1025	162.40	0.67	36	
081	0049	NO2	615HP WAUKESHA L5788G #2	107.40	QUESTAR GAS MANAGEMENT COMPANY	3436	1025	162.40	0.67	36	
081	0178	PM10	INTERNATIONAL DUAL FUEL GENERATOR	2.22	KOCH EXPLORATION CO LLC - WALKER 12-4	1394	1040	0.00	0.33	7	03MF0810
081	0177	PM10	INTERNATIONAL DIESEL/NAT GAS GENERATOR	2.22	KOCH EXPLORATION CO LLC - WALKER 12-2	1394	1040	0.00	0.33	7	03MF0809
081	0269	PM10	INTERNATIONAL DUEL FUEL DIESEL/NAT GAS GENERATOR	2.22	KOCH EXPLORATION CO., LLC - CULVERWELL	1394	1040	0.00	0.33	7	03MF1070
081	0224	PM10	INTERNATIONAL NAT GAS /DIESEL GENERATOR	1.83	KOCH EXPLORATION CO LLC - WALKER 3-4	1394	1040	0.00	0.33	7	03MF0812
081	0223	PM10	JOHN DEERE, SN: RG6081A64535 ENG RATED AT 190 HP	1.83	KOCH EXPLORATION CO LLC - WALKER 3-2	1394	1040	0.00	0.33	7	03MF0811
081	0228	PM10	JOHN DEERE/6081,SN:RG6081A164355 ENG RATED @ 190HP	1.83	KOCH EXPLORATION CO, LLC - WALKER 3-3	1394	1040	0.00	0.33	7	03MF0943
081	0272	PM10	JOHN DEERE GENERATOR RATED AT 192 HP	1.83	KOCH EXPLORATION - WALKER 3-5	0	900	0.00	0.25	8	04MF1135
081	0169	PM10	3 CUMMINS 6BT5.9 170 HP ICE	1.52	KOCH EXPLORATION CO LLC - WALKER 3-1	835	995	0.00	0.33	10	03MF0434
081	0178	SO2	INTERNATIONAL DUAL FUEL GENERATOR	2.07	KOCH EXPLORATION CO LLC - WALKER 12-4	1394	1040	0.00	0.33	7	03MF0810
081	0177	SO2	INTERNATIONAL DIESEL/NAT GAS GENERATOR	2.07	KOCH EXPLORATION CO LLC - WALKER 12-2	1394	1040	0.00	0.33	7	03MF0809
081	0269	SO2	INTERNATIONAL DUEL FUEL DIESEL/NAT GAS GENERATOR	2.07	KOCH EXPLORATION CO., LLC - CULVERWELL	1394	1040	0.00	0.33	7	03MF1070
081	0224	SO2	INTERNATIONAL NAT GAS /DIESEL GENERATOR	1.71	KOCH EXPLORATION CO LLC - WALKER 3-4	1394	1040	0.00	0.33	7	03MF0812
081	0223	SO2	JOHN DEERE, SN: RG6081A64535 ENG RATED AT 190 HP	1.71	KOCH EXPLORATION CO LLC - WALKER 3-2	1394	1040	0.00	0.33	7	03MF0811
081	0228	SO2	JOHN DEERE/6081,SN:RG6081A164355 ENG RATED @ 190HP	1.71	KOCH EXPLORATION CO, LLC - WALKER 3-3	1394	1040	0.00	0.33	7	03MF0943
081	0272	SO2	JOHN DEERE GENERATOR RATED AT 192 HP	1.71	KOCH EXPLORATION - WALKER 3-5	0	900	0.00	0.25	8	04MF1135
081	0168	SO2	2 CUMMINS NAT GAS/DIESEL FUELED ICE	1.50	KOCH EXPLORATION CO LLC - WALKER 12-5	835	995	0.00	0.33	10	03MF0808
081	0169	SO2	3 CUMMINS 6BT5.9 170 HP ICE	1.42	KOCH EXPLORATION CO LLC - WALKER 3-1	835	995	0.00	0.33	10	03MF0434
081	0178	VOC	INTERNATIONAL DUAL FUEL GENERATOR	2.49	KOCH EXPLORATION CO LLC - WALKER 12-4	1394	1040	0.00	0.33	7	03MF0810
081	0177	VOC	INTERNATIONAL DIESEL/NAT GAS GENERATOR	2.49	KOCH EXPLORATION CO LLC - WALKER 12-2	1394	1040	0.00	0.33	7	03MF0809

Table 7. Colorado Included Permitted Industrial Sources (continued).

county fips	site id	pollutant code	emission process description	proc emis estim (tpy)	facility name	exit gas flow rate (acfm)	exit gas temp (F)	exit gas velocity (ft per s)	stack diam (ft)	stack height (ft)	construction permit number
081	0269	VOC	INTERNATIONAL DUEL FUEL DIESEL/NAT GAS GENERATOR	2.49	KOCH EXPLORATION CO., LLC - CULVERWELL	1394	1040	0.00	0.33	7	03MF1070
081	0224	VOC	INTERNATIONAL NAT GAS /DIESEL GENERATOR	2.09	KOCH EXPLORATION CO LLC - WALKER 3-4	1394	1040	0.00	0.33	7	03MF0812
081	0223	VOC	JOHN DEERE, SN: RG6081A64535 ENG RATED AT 190 HP	2.09	KOCH EXPLORATION CO LLC - WALKER 3-2	1394	1040	0.00	0.33	7	03MF0811
081	0228	VOC	JOHN DEERE/6081,SN:RG6081A164355 ENG RATED @ 190HP	2.09	KOCH EXPLORATION CO, LLC - WALKER 3-3	1394	1040	0.00	0.33	7	03MF0943
081	0272	VOC	JOHN DEERE GENERATOR RATED AT 192 HP	2.09	KOCH EXPLORATION - WALKER 3-5	0	900	0.00	0.25	8	04MF1135
081	0168	VOC	WASTE GAS FLARE RATED AT 0.15 MMBTU PER HOUR	26.40	KOCH EXPLORATION CO LLC - WALKER 12-5	191	0	37.20	0.3	8	02MF0371
081	0168	VOC	2 CUMMINS NAT GAS/DIESEL FUELED ICE	1.00	KOCH EXPLORATION CO LLC - WALKER 12-5	835	995	0.00	0.33	10	03MF0808
081	0169	VOC	3 CUMMINS 6BT5.9 170 HP ICE	1.74	KOCH EXPLORATION CO LLC - WALKER 3-1	835	995	0.00	0.33	10	03MF0434
081	0108	VOC	REBOILER STILL VENT	1.57	NANCE PETROLEUM CORP - BLUE GRAVEL FACIL	1019	800	48.30	0.67	10	95MF004-1
081	0161	VOC	CATERPILLAR G3512TALE RATED AT 812 HP	3.10	QUESTAR GAS MANAGEMENT CO. - LION C.S.	4386	0	93.10	1	15	01MF0787
081	0152	VOC	GLYCOL DEHYDRATOR	17.01	JOURNEY OPERATING LLC	4	212	3.10	0.16	15	97MF0492
081	0169	VOC	NATURAL GAS COMBUSTION	20.40	KOCH EXPLORATION CO LLC - WALKER 3-1	0	1000	0.00	0.33	15	02MF0686
081	0067	VOC	WAUKESHA ENGINE RATED AT 1300 HP	6.25	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	4840	0	102.60	1	15	01MF0039
081	0161	VOC	WAUKESHA 17402GL ENGINE RATED AT 1,478 HP	7.10	QUESTAR GAS MANAGEMENT CO. - LION C.S.	0	1100	0.00	1	15	03MF0662
081	0076	VOC	WAUKESHA NAT GAS FIRED ICE	4.10	QUESTAR GAS MANAGEMENT - E HIAWATHA C.S.	5498	865	11.60	1	15	04MF0936
081	0152	VOC	CAT G379TA NAT GAS ENGINE	4.00	JOURNEY OPERATING LLC	0	1037	18.90	0.5	16	97MF0493
081	0049	VOC	DEHYDRATION REBOILER	4.30	QUESTAR GAS MANAGEMENT COMPANY	462	350	4.40	0.8	16	
081	0152	VOC	AMINE TREATING	6.73	JOURNEY OPERATING LLC	131	135	44.40	0.25	20	97MF0491
081	0067	VOC	CATERPILLER, G3516LE RATED @ 1,340 HP	1.00	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	0	1100	0.00	2	20	05MF0723
081	0067	VOC	WAUKESHA L5790GL #397932	1.00	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	6538	650	199.90	0.7	20	91MF625
081	0049	VOC	NATURAL GAS FIRED ICE	6.60	QUESTAR GAS MANAGEMENT COMPANY	0	1100	0.00	2	20	05MF0534
081	0153	VOC	WAUKESHA ENGINE RATED AT 827 HP	4.31	WESTERN GAS RESOURCES INC SAND WASH STA	4090	515	14.00	1.44	25	97MF0649
081	0049	VOC	WAUKESHA L7042G S/N193857	1.00	QUESTAR GAS MANAGEMENT COMPANY	4100	1050	126.30	0.8	28	
081	0049	VOC	INGERSALL RAND 8-XVG	2.90	QUESTAR GAS MANAGEMENT COMPANY	1588	1025	48.90	0.8	32	
081	0227	NO2	AJAX, DPC-230 LE NAT GAS ENG RATED AT 190 HP	3.70	TOM BROWN, INC - MOFFAT COUNTY 24-29	1062	368	33.90	12	190	04MF1324 XP
081	0227	CO	AJAX, DPC-230 LE NAT GAS ENG RATED AT 190 HP	5.60	TOM BROWN, INC - MOFFAT COUNTY 24-29	1062	368	33.90	12	190	04MF1324 XP
081	0227	VOC	AJAX, DPC-230 LE NAT GAS ENG RATED AT 190 HP	1.80	TOM BROWN, INC - MOFFAT COUNTY 24-29	1062	368	33.90	12	190	04MF1324 XP
103	0010	NO2	CAT G398 IC ENG 500 HP	10.60	CHEVRON USA - WILSON CREEK GAS PLT	2251	1100	107.70	0.67	15	97RB0187
103	0010	CO	CAT G398 IC ENG 500 HP	16.00	CHEVRON USA - WILSON CREEK GAS PLT	2251	1100	107.70	0.67	15	97RB0187
103	0010	VOC	CAT G398 IC ENG 500 HP	5.30	CHEVRON USA - WILSON CREEK GAS PLT	2251	1100	107.70	0.67	15	97RB0187
103	0010	SO2	EMERGENCY FLARE	1.00	CHEVRON USA - WILSON CREEK GAS PLT	0	0	0.00	0.3	30	03RB0233
107	0086	CO	NAT GAS FIRED WAUKESHA ICE	4.60	INFINITY OIL AND GAS OF WYO-WOLF MTN	0	899	693.00	0	0	05RO0546
107	0077	CO	DIESEL RECIPROCATING ENGINE RATED AT 2157 HP	1.05	TOWN OF OAK CREEK	12210	885	0.00	1	13	99RO0828
107	0086	CO	CONDENSATE STORAGE TANKS	5.00	INFINITY OIL AND GAS OF WYO-WOLF MTN	5916	700	10.00	2	20	05RO0547
107	0086	NO2	NAT GAS FIRED WAUKESHA ICE	13.10	INFINITY OIL AND GAS OF WYO-WOLF MTN	0	899	693.00	0	0	05RO0546
107	0077	NO2	DIESEL RECIPROCATING ENGINE RATED AT 2157 HP	3.97	TOWN OF OAK CREEK	12210	885	0.00	1	13	99RO0828
107	0086	NO2	CONDENSATE STORAGE TANKS	1.25	INFINITY OIL AND GAS OF WYO-WOLF MTN	5916	700	10.00	2	20	05RO0547
107	0061	SO2	COAL FIRED FURNACE	1.06	OAK CREEK JUNIOR HIGH S ROUTT CNTY SD	0	250	0.00	2.5	26	
107	0086	VOC	CONDENSATE STORAGE TANKS	16.30	INFINITY OIL AND GAS OF WYO-WOLF MTN	5916	700	10.00	2	20	05RO0547
107	0001	PM10	BOILER #1 - COAL	91.30	PUBLIC SERVICE CO HAYDEN PLT	781891	285	32.00	22	250	GRAND.000022
107	0001	CO	BOILER #1 - COAL	196.00	PUBLIC SERVICE CO HAYDEN PLT	781891	285	32.00	22	250	GRAND.000022
107	0001	SO2	BOILER #1 - COAL	1297.50	PUBLIC SERVICE CO HAYDEN PLT	781891	285	32.00	22	250	GRAND.000022
107	0001	NO2	BOILER #1 - COAL	4094.70	PUBLIC SERVICE CO HAYDEN PLT	781891	285	32.00	22	250	GRAND.000022
107	0001	VOC	BOILER #1 - COAL	23.50	PUBLIC SERVICE CO HAYDEN PLT	781891	285	32.00	22	250	GRAND.000022
057	0022	VOC	CONDENSATE TANKS	6.12	NIELSON & ASSOCIATES FEDERAL #8-3	0	70	0.00	0	0	
057	0012	VOC	TWO CRUDE OIL TANKS	9.03	NIELSON & ASSOCIATES INC -MCCALLUM FIELD	0	70	0.00	0.33	20	95JA129
057	0010	VOC	AG GASOLINE TANKS	10.85	CORKLE'S OIL CO	0	70	0.00	0	0	96JA301
057	0012	110543	VENTING OF CASINGHEAD GAS	2.18	NIELSON & ASSOCIATES INC -MCCALLUM FIELD	0	70	0.00	0.17	2	95JA129
057	0012	VOC	VENTING OF CASINGHEAD GAS	67.22	NIELSON & ASSOCIATES INC -MCCALLUM FIELD	0	70	0.00	0.17	2	95JA129
069	0255	VOC	VAPOR LOSS W/O CONTROL	4.55	SCHRADER OIL CO	0	70	0.00	0	0	
081	0231	100414	JW WILLIAMS GLYCOL DEHYDRATOR COMO UNIT	2.19	CHEVRON USA, INC. - DUNCAN 2-5	0	70	0.00	0	0	04MF0187
081	0167	108883	JW WILLIAMS GLYCOL DEHYDRATOR	1.12	CHEVRON USA, INC. - DUNCAN 3-2	0	70	0.00	0	0	02MF0306
081	0182	108883	PESCO GLYCOL DEHYDRATOR	1.12	CHEVRON USA - DUNCAN UNIT 2 #2	0	70	0.00	0	0	03MF0138
081	0189	108883	JW WILLIAMS GLYCOL DEHYDRATOR	1.20	CHEVRON USA - DYER C #2	0	70	0.00	0	0	03MF0145
081	0188	108883	P&A GLYCOL DEHYDRATOR	1.20	CHEVRON USA - DYER B #2	0	70	0.00	0	0	03MF0144
081	0184	108883	PESCO DEHYDRATOR	1.20	CHEVRON USA - DUNCAN B #5	0	70	0.00	0	0	03MF0140
081	0147	108883	CE NATCO SN: 6214	1.31	CHEVRON USA, INC. - DUNCAN 1-3	0	70	0.00	0	0	96MF515
081	0148	108883	CUSTOM GLYCOL DEHYDRATOR	1.75	J-W OPERATING COMPANY -SAND HILLS	0	70	0.00	0	0	99MF0798
081	0175	108883	JW WILLIAMS GLYCOL DEHYDRATOR	1.80	CHEVRON USA, INC. - DUNCAN B-12	0	70	0.00	0	0	03MF0136
081	0273	108883	HANOVER GLYCOL DEHYDRATOR, SN: CW1001	1.85	YATES PETROLEUM - BAKERS PEAK UNIT #2	0	70	0.00	0	0	05MF0264
081	0164	108883	JW WILLIAMS NATURAL GAS FIRED REBOILER GLYCOL DEHY	2.00	CHEVRON USA, INC. - VAN SCHAICK A-6	0	70	0.00	0	0	02MF0131
081	0191	108883	JW WILLIAMS DEHYDRATOR	2.03	CHEVRON USA - VAN SCHAIK UNIT #4	0	70	0.00	0	0	03MF0147
081	0166	108883	JW WILLIAMS GLYCOL DEHYDRATOR	2.03	CHEVRON USA, INC. - HIAWATHA B-3	0	70	0.00	0	0	02MF0282
081	0276	108883	J.W. WILLIAMS GLYCOL DEHYDRATOR	2.05	CHEVRON USA, INC. - VAN SCHAICK A-7	0	70	0.00	0	0	05MF0545
081	0183	108883	JW WILLIAMS GLYCOL DEHYDRATOR	2.13	CHEVRON USA - DUNCAN UNIT 2 #4	0	70	0.00	0	0	03MF0139
081	0163	108883	JW WILLIAMS GLYCOL DEHYDRATOR	2.24	CHEVRON USA, INC. - DUNCAN 1-5	0	70	0.00	0	0	02MF0130
081	0153	108883	ENERTEK DEHYVENT-1	2.26	WESTERN GAS RESOURCES INC SAND WASH STA	0	70	0.00	0	0	97MF0651
081	0153	108883	ENERTEC DEHYVENT-2	2.26	WESTERN GAS RESOURCES INC SAND WASH STA	0	70	0.00	0	0	97MF0652
081	0181	108883	JW WILLIAMS GLYCOL DEHYDRATOR	2.31	CHEVRON USA - DUNCAN UNIT 1 #4	0	70	0.00	0	0	03MF0137
081	0031	108883	TRIETHYLENE GLYCOL DEHYDRATOR	2.32	CHEVRON USA, INC. - VAN SCHAICK A-3	0	70	0.00	0	0	02MF0532
081	0186	108883	PESCO DEHYDRATOR	2.34	CHEVRON USA - DUNCAN B #10	0	70	0.00	0	0	03MF0142
081	0180	108883	JW WILLIAMS GLYCOL DEHYDRATOR	2.48	CHEVRON USA - DUNCAN 1-6	0	70	0.00	0	0	03MF0135
081	0192	108883	PESCO DEHYDRATOR	2.48	CHEVRON USA - VAN SCHAIK UNIT #5	0	70	0.00	0	0	03MF0148
081	0187	108883	JW WILLIAMS GLYCOL DEHYDRATOR	2.48	CHEVRON USA - DUNCAN B #11	0	70	0.00	0	0	03MF0143
081	0281	108883	JW WILLIAMS GLYCOL DEHYDRATOR, SN: 9100	2.52	CHEVRON USA- DUNCAN B-15	0	70	0.00	0	0	05MF0786
081	0159	108883	TWO GLYCOL DEHYDRATORS	2.97	CHEVRON USA, INC. - DUNCAN 3-3	0	70	0.00	0	0	00MF0511
081	0162	108883	JW WILLIAMS GLYCOL DEHYDRATOR	3.67	CHEVRON USA, INC. -DUNCAN VANSCHAICK 1-3	0	70	0.00	0	0	02MF0056
081	0049	108883	GLYCOL DEHYDRATOR	3.79	QUESTAR GAS MANAGEMENT COMPANY	0	70	0.00	0	0	GRAND.000007
081	0158	108883	TWO GLYCOL DEHYDRATORS	4.36	CHEVRON USA, INC. - VAN SCHAICK A-5	0	70	0.00	0	0	00MF0510
081	0111	110543	AMER & TEXAS DEHY SN: 981	1.04	THOMAS OP CO - POWDER WASH STATION	0	70	0.00	0	0	95MF0024
081	0111	110543	TEXAS GLY DEHY	1.04	THOMAS OP CO - POWDER WASH STATION	0	70	0.00	0	0	95MF0024
081	0220	110543	CONDENSATE STORAGE TANKS	1.20	NANCE PETROLEUM CORP - KOWACH #1-9	0	70	0.00	0	0	06MF0345
081	0230	110543	J.W.WILLIAMS GLYCOL DEHYDRATOR	1.85	CHEVRON USA, INC. (MO) - DUNCAN B-13	0	70	0.00	0	0	04MF0086
081	0189	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	1.01	CHEVRON USA - DYER C #2	0	70	0.00	0	0	03MF0145
081	0188	1330207	P&A GLYCOL DEHYDRATOR	1.01	CHEVRON USA - DYER B #2	0	70	0.00	0	0	03MF0144
081	0184	1330207	PESCO DEHYDRATOR	1.01	CHEVRON USA - DUNCAN B #5	0	70	0.00	0	0	03MF0140
081	0067	1330207	GLYCOL DEHYDRATOR	1.12	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	0	70	0.00	0	0	95MF922-1
081	0166	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	1.30	CHEVRON USA, INC. - HIAWATHA B-3	0	70	0.00	0	0	02MF0282
081	0175	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	1.53	CHEVRON USA, INC. - DUNCAN B-12	0	70	0.00	0	0	03MF0136
081	0191	1330207	JW WILLIAMS DEHYDRATOR	1.73	CHEVRON USA - VAN SCHAIK UNIT #4	0	70	0.00	0	0	03MF0147
081	0276	1330207	J.W. WILLIAMS GLYCOL DEHYDRATOR	1.79	CHEVRON USA, INC. - VAN SCHAICK A-7	0	70	0.00	0	0	05MF0545
081	0183	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	1.81	CHEVRON USA - DUNCAN UNIT 2 #4	0	70	0.00	0	0	03MF0139
081	0231	1330207	JW WILLIAMS GLYCOL DEHYDRATOR COMO UNIT	1.84	CHEVRON USA, INC. - DUNCAN 2-5	0	70	0.00	0	0	04MF0187
081	0181	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	1.88	CHEVRON USA - DUNCAN UNIT 1 #4	0	70	0.00	0	0	03MF0137
081	0031	1330207	TRIETHYLENE GLYCOL DEHYDRATOR	1.94	CHEVRON USA, INC. - VAN SCHAICK A-3	0	70	0.00	0	0	02MF0532
081	0186	1330207	PESCO DEHYDRATOR	2.00	CHEVRON USA - DUNCAN B #10	0	70	0.00	0	0	03MF0142
081	0180	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	2.12	CHEVRON USA - DUNCAN 1-6	0	70	0.00	0	0	03MF0135
081	0192	1330207	PESCO DEHYDRATOR	2.14	CHEVRON USA - VAN SCHAIK UNIT #5	0	70	0.00	0	0	03MF0148
081	0187	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	2.16	CHEVRON USA - DUNCAN B #11	0	70	0.00	0	0	03MF0143

Table 7. Colorado Included Permitted Industrial Sources (continued).

county fips	site id	pollutant code	emission process description	proc emis estim (tpy)	facility name	exit gas flow rate (acfm)	exit gas temp (F)	exit gas velocity (ft per s)	stack diam (ft)	stack height (ft)	construction permit number
081	0230	1330207	J.W.WILLIAMS GLYCOL DEHYDRATOR	2.20	CHEVRON USA, INC. (MO) - DUNCAN B-13	0	70	0.00	0	0	04MF0086
081	0164	1330207	JW WILLIAMS NATURAL GAS FIRED REBOILER GLYCOL DEHY	2.22	CHEVRON USA, INC. - VAN SCHAICK A-6	0	70	0.00	0	0	02MF0131
081	0163	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	2.30	CHEVRON USA, INC. - DUNCAN 1-5	0	70	0.00	0	0	02MF0130
081	0148	1330207	CUSTOM GLYCOL DEHYDRATOR	2.85	J-W OPERATING COMPANY -SAND HILLS	0	70	0.00	0	0	99MF0798
081	0159	1330207	TWO GLYCOL DEHYDRATORS	3.01	CHEVRON USA, INC. - DUNCAN 3-3	0	70	0.00	0	0	00MF0511
081	0162	1330207	JW WILLIAMS GLYCOL DEHYDRATOR	3.02	CHEVRON USA, INC. -DUNCAN VANSCHAICK 1-3	0	70	0.00	0	0	02MF0056
081	0147	1330207	CE NATCO SN: 6214	3.20	CHEVRON USA, INC. - DUNCAN 1-3	0	70	0.00	0	0	96MF515
081	0158	1330207	TWO GLYCOL DEHYDRATORS	3.99	CHEVRON USA, INC. - VAN SCHAICK A-5	0	70	0.00	0	0	00MF0510
081	0125	CO	WAUKESHA NATURAL GAS ENGINE	3.97	ROCKY MTN NAT GAS - BLUE GRAVEL	0	70	0.00	0	0	03MF0113
081	0112	CO	NATURAL GAS PROCESSED	10.13	ENSIGN OPERATING COMPANY	0	70	0.00	0	0	02MF0134
081	0246	CO	GENERAL MOTORS VORTEC 5700 ENGINE RATED AT 150 HP	22.40	CEDAR RIDGE LLC - BROWNLEE 24-1	0	70	0.00	0	0	04MF0465
081	0250	CO	GENERAL MOTORS VORTEC 5700 ENGINE RATED AT 150 TPH	22.40	CEDAR RIDGE LLC - ROBIDOUX 13-12-89 #1	0	70	0.00	0	0	04MF0470
081	0251	CO	GENERAL MOTORS, VORTEC 5700 NAT GAS ENGINE	22.40	CEDAR RIDGE LLC - ROBIDOUX 23-13 CBM #1	0	70	0.00	0	0	04MF0472
081	0251	CO	GENERAL MOTORS, VORTEC 8100 ENGINE RATED @ 240 HP	35.80	CEDAR RIDGE LLC - ROBIDOUX 23-13 CBM #1	0	70	0.00	0	0	04MF0471
081	0125	NO2	WAUKESHA NATURAL GAS ENGINE	6.78	ROCKY MTN NAT GAS - BLUE GRAVEL	0	70	0.00	0	0	03MF0113
081	0249	NO2	(2) PERKINS GENERATORS	7.80	CEDAR RIDGE LLC - MOFFAT 26-12-89 SWD #1	0	70	0.00	0	0	04MF0469 XP
081	0251	NO2	GENERAL MOTORS, VORTEC 5700 NAT GAS ENGINE	10.72	CEDAR RIDGE LLC - ROBIDOUX 23-13 CBM #1	0	70	0.00	0	0	04MF0472
081	0246	NO2	GENERAL MOTORS VORTEC 5700 ENGINE RATED AT 150 HP	10.72	CEDAR RIDGE LLC - BROWNLEE 24-1	0	70	0.00	0	0	04MF0465
081	0250	NO2	GENERAL MOTORS VORTEC 5700 ENGINE RATED AT 150 TPH	10.72	CEDAR RIDGE LLC - ROBIDOUX 13-12-89 #1	0	70	0.00	0	0	04MF0470
081	0112	NO2	NATURAL GAS PROCESSED	12.06	ENSIGN OPERATING COMPANY	0	70	0.00	0	0	02MF0134
081	0251	NO2	GENERAL MOTORS, VORTEC 8100 ENGINE RATED @ 240 HP	17.20	CEDAR RIDGE LLC - ROBIDOUX 23-13 CBM #1	0	70	0.00	0	0	04MF0471
081	0007	PM10	LOADING/UNLOADING/HAULING	1.10	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0007	PM10	LOADERS/HAUL TRUCKS	1.20	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0007	PM10	AUXILIARY COAL SYSTEM	1.40	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0007	PM10	SECONDARY CRUSHER HOUSE	2.00	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0222	PM10	FUGITIVE EMISSIONS	2.42	MOFFAT LIMESTONE INC - JUNIPER MT. GRAVE	0	70	0.00	0	0	03MF0462F
081	0265	PM10	FUGITIVE PARTICULATE EMISSIONS FROM HAUL ROADS	4.95	PLAINS MARKETING LP - BUCK PEAK STATION	0	70	0.00	0	0	04MF0104
081	0007	PM10	PILE MAINT./RECLAIM CONVY	6.70	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0007	PM10	CRUSHER/SCREENS	11.00	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0007	PM10	PRIMARY CRUSHER HOUSE	12.00	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0081	PM10	SAND & GRAVEL MINE: FUGITIVE DUST ACTIVITIES	16.87	LAFARGE WEST, INC. - BUNN RANCH PIT	0	70	0.00	0	0	97MF0469F
081	0122	PM10	UMTRA REMEDIATION-FUGITVE	20.72	UMETCO MINERALS CORP	0	70	0.00	0	0	95MF035
081	0058	PM10	SOIL RELOCATION/HAUL RDS	23.79	MOFFAT COUNTY LANDFILL	0	70	0.00	0	0	83MF249F
081	0007	PM10	HAUL TRUCKS	158.00	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0007	PM10	MINING ACTIVITIES-FUGTIVE	730.00	COLOWYO COAL CO	0	70	0.00	0	0	95MF1040
081	0088	VOC	SUBMERGED FILLING	1.25	KUM & GO	0	70	0.00	0	0	
081	0087	VOC	SUBMERGED FILLING	1.28	KUM & GO	0	70	0.00	0	0	
081	0089	VOC	SUBMERGED FILLING	1.38	KUM & GO	0	70	0.00	0	0	
081	0238	VOC	CONDENSATE TANK	1.50	THOMAS OPERATING CO. - PTASYNSKI #5	0	70	0.00	0	0	04MF0329
081	0241	VOC	CONDENSATE TANK	1.50	THOMAS OPERATING CO. - USA JOYCE WOLF #3	0	70	0.00	0	0	04MF0332
081	0237	VOC	CONDENSATE TANK	1.50	THOMAS OPERATING CO. - PTASYNSKI #4	0	70	0.00	0	0	04MF0328
081	0249	VOC	(2) PERKINS GENERATORS	1.60	CEDAR RIDGE LLC - MOFFAT 26-12-89 SWD #1	0	70	0.00	0	0	04MF0469 XP
081	0088	VOC	VAPOR LOSS W/O CONTROL	1.88	KUM & GO	0	70	0.00	0	0	
081	0091	VOC	TANK 010: GASOLINE BREATHING	1.90	TREVENEN OIL DISTRIBUTING	0	70	0.00	0	0	96MF157
081	0087	VOC	VAPOR LOSS W/O CONTROL	1.93	KUM & GO	0	70	0.00	0	0	
081	0091	VOC	TANK 012: GASOLINE BREATHING	1.93	TREVENEN OIL DISTRIBUTING	0	70	0.00	0	0	96MF157
081	0058	VOC	SOIL RELOCATION/HAUL RDS	1.94	MOFFAT COUNTY LANDFILL	0	70	0.00	0	0	83MF249F
081	0196	VOC	(2) 400 BARREL CONDENSATE TANKS	2.00	CHEVRON USA, INC. - VAN SCHAIK C-10	0	70	0.00	0	0	03MF0204
081	0171	VOC	CONDENSATE STORAGE TANK	2.00	ROCKY MOUNTAIN NATURAL GAS-BLUE GRAVEL	0	70	0.00	0	0	03MF0016
081	0242	VOC	CONDENSATE TANK	2.05	THOMAS OPERATING CO. - USA JOYCE WOLF #4	0	70	0.00	0	0	04MF0333
081	0089	VOC	VAPOR LOSS W/O CONTROL	2.08	KUM & GO	0	70	0.00	0	0	
081	0271	VOC	ENERTEK GLYCOL DEHYDRATOR	2.22	WEXPRO CO - W.B. LASHER #9	0	70	0.00	0	0	05MF0119
081	0275	VOC	PESCO GLYCOL DEHYDRATOR	2.22	WEXPRO CO - W.B. LASHER #7	0	70	0.00	0	0	05MF0325
081	0270	VOC	AMERICAN TANK GLYCOL DEHYDRATOR	2.41	WEXPRO COMPANY - W.B. LASHER #8	0	70	0.00	0	0	05MF0040
081	0153	VOC	ABOVE GROUND TANK	2.80	WESTERN GAS RESOURCES INC SAND WASH STA	0	70	0.00	0	0	01MF0366
081	0111	VOC	AMER & TEXAS DEHY SN: 981	3.53	THOMAS OP CO - POWDER WASH STATION	0	70	0.00	0	0	95MF0024
081	0111	VOC	TEXAS GLY DEHY	3.53	THOMAS OP CO - POWDER WASH STATION	0	70	0.00	0	0	95MF0024
081	0209	VOC	CONDENSATE STORAGE TANK	3.61	WEXPRO - POWDER WASH UNIT (TANK 353)	0	70	0.00	0	0	
081	0086	VOC	BREATHING AND WORKING	3.83	FLEISCHLI OIL CO	0	70	0.00	0	0	96MF0969
081	0234	VOC	CONDENSATE TANK	4.00	THOMAS OPERATING CO. - KLAENHAMMER #2	0	70	0.00	0	0	04MF0325
081	0236	VOC	CONDENSATE TANK	4.00	THOMAS OPERATING CO. - PTASYNSKI #3	0	70	0.00	0	0	04MF0327
081	0257	VOC	CONDENSATE TANK	4.02	WESTERN GAS RESOURCES - EVANS 41-29	0	70	0.00	0	0	04MF0565
081	0275	VOC	CONDENSATE TANK	4.20	WEXPRO CO - W.B. LASHER #7	0	70	0.00	0	0	05MF0326
081	0138	VOC	N SIDE COMP PEC GLY DEHY	4.90	QUESTAR GAS MANAGEMENT CO	0	70	0.00	0	0	
081	0260	VOC	CONDENSATE TANKS	4.92	SEMCRUDE L.P. - ILES GROVE	0	70	0.00	0	0	04MF0975
081	0167	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	5.00	CHEVRON USA, INC. - DUNCAN 3-2	0	70	0.00	0	0	02MF0306
081	0204	VOC	CONDENSATE STORAGE TANKS	5.07	PALADIN ENERGY - FEDERAL #28-11	0	70	0.00	0	0	
081	0274	VOC	CONDENSATE TANK	5.08	WESTERN GAS RES. - EVANS FEDERAL 43-28	0	70	0.00	0	0	GP01-WGRI
081	0200	VOC	CONDENSATE TANK	5.11	WESTERN GAS RESOURCES - FEDERAL 1-43-32	0	70	0.00	0	0	
081	0092	VOC	3 GASOLINE TANKS	5.29	SIMONS PETROLEUM, INC	0	70	0.00	0	0	96MF155
081	0193	VOC	CONDENSATE TANK	5.54	CHEVRON USA - DUNCAN VAN SCHAIK 1-2	0	70	0.00	0	0	
081	0156	VOC	JW WILIAMS GLYCOL DEHYDRATOR	5.72	TRUE OIL LLC - BTA FEDERAL #12-33	0	70	0.00	0	0	00MF0096
081	0086	VOC	FILLING	5.96	FLEISCHLI OIL CO	0	70	0.00	0	0	96MF0969
081	0188	VOC	P&A GLYCOL DEHYDRATOR	6.00	CHEVRON USA - DYER B #2	0	70	0.00	0	0	03MF0144
081	0184	VOC	PESCO DEHYDRATOR	6.00	CHEVRON USA - DUNCAN B #5	0	70	0.00	0	0	03MF0140
081	0182	VOC	PESCO GLYCOL DEHYDRATOR	6.00	CHEVRON USA - DUNCAN UNIT 2 #2	0	70	0.00	0	0	03MF0138
081	0189	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	6.00	CHEVRON USA - DYER C #2	0	70	0.00	0	0	03MF0145
081	0270	VOC	CONDENSATE TANK	6.03	WEXPRO COMPANY - W.B. LASHER #8	0	70	0.00	0	0	GP01-WEXPRO
081	0212	VOC	CONDENSATE STORAGE TANK	6.27	WEXPRO - POWDER WASH UNIT (TANK 315)	0	70	0.00	0	0	
081	0233	VOC	CONDENSATE TANK	6.50	THOMAS OPERATING CO. - KLAENHAMMER #1	0	70	0.00	0	0	04MF0324
081	0049	VOC	CONDENSATE TRUCK UNLOADING	6.60	QUESTAR GAS MANAGEMENT COMPANY	0	70	0.00	0	0	
081	0199	VOC	CONDENSATE TANK	6.60	WESTERN GAS RESOURCES - FEDERAL 1-23-33	0	70	0.00	0	0	
081	0265	VOC	EQUIPMENT VOC LEAKS	6.70	PLAINS MARKETING LP - BUCK PEAK STATION	0	70	0.00	0	0	04MF0104
081	0215	VOC	CONDENSATE STORAGE TANK	6.90	WEXPRO - POWDER WASH UNIT (TANK 422)	0	70	0.00	0	0	
081	0271	VOC	CONDENSATE STORAGE TANK	6.94	WEXPRO CO - W.B. LASHER #9	0	70	0.00	0	0	GP01-WEXPRO
081	0248	VOC	CATERPILLAR, G379-SI-TA-HCR RATED AT 405 HP	7.00	CEDAR RIDGE LLC - CF&8 CORP. #1	0	70	0.00	0.03	14	04MF0467
081	0213	VOC	CONDENSTAE STORAGE TANKS	7.06	WEXPRO - POWDER WASH (TANKS 356 & 357)	0	70	0.00	0	0	
081	0194	VOC	CONDENSATE TANK	7.64	CHEVRON USA - DUNCAN VAN SCHAIK 1-3 & 1-	0	70	0.00	0	0	
081	0277	VOC	HANOVER GLYCOL DEHYDRATOR	7.70	YATES PETROLEUM CORPORATION-BAKERS PEAK	0	70	0.00	0	0	05MF0552
081	0211	VOC	CONDENSATE STORAGE TANK	7.85	WEXPRO - POWDER WASH UNIT (TANK 300)	0	70	0.00	0	0	
081	0208	VOC	CONDENSATE STORAGE TANK	7.95	WEXPRO - POWDER WASH UNIT (TANK 329)	0	70	0.00	0	0	
081	0175	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	8.00	CHEVRON USA, INC. - DUNCAN B-12	0	70	0.00	0	0	03MF0136
081	0195	VOC	CONDENSATE TANK	8.20	CHEVRON USA - DUNCAN B-11	0	70	0.00	0	0	
081	0203	VOC	CONDENSATE STORAGE TANKS	8.71	PALADIN ENERGY - FEDERAL #28-7	0	70	0.00	0	0	
081	0240	VOC	CONDENSATE TANK	8.75	THOMAS OPERATING CO.- USA JOYCE WOLF #2	0	70	0.00	0	0	04MF0331
081	0239	VOC	CONDENSATE TANKS	8.75	THOMAS OPERATING CO. - JOYCE WOLF	0	70	0.00	0	0	04MF0330
081	0230	VOC	CONDENSATE TANK	8.76	CHEVRON USA, INC. (MO) - DUNCAN B-13	0	70	0.00	0	0	04MF0087
081	0191	VOC	JW WILLIAMS DEHYDRATOR	9.00	CHEVRON USA - VAN SCHAIK UNIT #4	0	70	0.00	0	0	03MF0147
081	0164	VOC	JW WILLIAMS NATURAL GAS FIRED REBOILER GLYCOL DEHY	9.00	CHEVRON USA, INC. - VAN SCHAICK A-6	0	70	0.00	0	0	02MF0131

Table 7. Colorado Included Permitted Industrial Sources (concluded).

county fips	site id	pollutant code	emission process description	proc emis estim (tpy)	facility name	exit gas flow rate (acfm)	exit gas temp (F)	exit gas velocity (ft per s)	stack diam (ft)	stack height (ft)	construction permit number
081	0273	VOC	HANOVER GLYCOL DEHYDRATOR, SN: CW1001	9.10	YATES PETROLEUM - BAKERS PEAK UNIT #2	0	70	0.00	0	0	05MF0264
081	0276	VOC	J.W. WILLIAMS GLYCOL DEHYDRATOR	9.10	CHEVRON USA, INC. - VAN SCHAICK A-7	0	70	0.00	0	0	05MF0545
081	0277	VOC	CONDENSATE TANK	9.16	YATES PETROLEUM CORPORATION-BAKERS PEAK	0	70	0.00	0	0	05MF0553
081	0198	VOC	CONDENSATE TANK	9.24	WESTERN GAS RESOURCES - EVANS 44-29	0	70	0.00	0	0	
081	0231	VOC	JW WILLIAMS GLYCOL DEHYDRATOR COMO UNIT	9.80	CHEVRON USA, INC. - DUNCAN 2-5	0	70	0.00	0	0	04MF0187
081	0230	VOC	J.W.WILLIAMS GLYCOL DEHYDRATOR	9.80	CHEVRON USA, INC. (MO) - DUNCAN B-13	0	70	0.00	0	0	04MF0086
081	0147	VOC	CE NATCO SN: 6214	9.90	CHEVRON USA, INC. - DUNCAN 1-3	0	70	0.00	0	0	96MF515
081	0183	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	10.00	CHEVRON USA - DUNCAN UNIT 2 #4	0	70	0.00	0	0	03MF0139
081	0166	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	10.00	CHEVRON USA, INC. - HIAWATHA B-3	0	70	0.00	0	0	02MF0282
081	0171	VOC	CONDENSATE STORAGE TANKS	10.00	ROCKY MOUNTAIN NATURAL GAS-BLUE GRAVEL	0	70	0.00	0	0	03MF0015
081	0163	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	10.00	CHEVRON USA, INC. - DUNCAN 1-5	0	70	0.00	0	0	02MF0130
081	0256	VOC	CONDENSATE TANKS	10.04	WESTERN GAS RESOURCES - FEDERAL 24-21	0	70	0.00	0	0	04MF0564
081	0031	VOC	TRIETHYLENE GLYCOL DEHYDRATOR	10.34	CHEVRON USA, INC. - VAN SCHAICK A-3	0	70	0.00	0	0	02MF0532
081	0067	VOC	GLYCOL DEHYDRATOR	10.40	QUESTAR GAS MGMT CO W HIAWATHA COMP STA	0	70	0.00	0	0	95MF922-1
081	0202	VOC	CONDENSATE STORAGE TANKS	10.45	PALADIN ENERGY - FEDERAL #28-3	0	70	0.00	0	0	
081	0281	VOC	JW WILLIAMS GLYCOL DEHYDRATOR, SN: 9100	10.64	CHEVRON USA- DUNCAN B-15	0	70	0.00	0	0	05MF0786
081	0243	VOC	CONDENSATE TANKS	10.70	NEXEN -- ILES DOME PUMP STATION	0	70	0.00	0	0	04MF0346
081	0197	VOC	CONDENSATE TANK	10.86	WESTERN GAS RESOURCES - EVANS 24-28	0	70	0.00	0	0	
081	0181	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	11.00	CHEVRON USA - DUNCAN UNIT 1 #4	0	70	0.00	0	0	03MF0137
081	0180	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	11.00	CHEVRON USA - DUNCAN 1-6	0	70	0.00	0	0	03MF0135
081	0192	VOC	PESCO DEHYDRATOR	11.00	CHEVRON USA - VAN SCHAIK UNIT #5	0	70	0.00	0	0	03MF0148
081	0186	VOC	PESCO DEHYDRATOR	11.00	CHEVRON USA - DUNCAN B #10	0	70	0.00	0	0	03MF0142
081	0255	VOC	CONDENSATE TANK	11.00	WESTERN GAS RESOURCES - EVANS FED. 22-28	0	70	0.00	0	0	04MF0563
081	0179	VOC	CONDENSATE TANK	11.72	MERRION OIL & GAS - NIGHTINGALE NO. 1	0	70	0.00	0	0	
081	0187	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	12.00	CHEVRON USA - DUNCAN B #11	0	70	0.00	0	0	03MF0143
081	0214	VOC	CONDENSATE STORAGE TANK	12.60	WEXPRO - POWDER WASH UNIT (TANK 438)	0	70	0.00	0	0	
081	0159	VOC	TWO GLYCOL DEHYDRATORS	13.70	CHEVRON USA, INC. - DUNCAN 3-3	0	70	0.00	0	0	00MF0511
081	0264	VOC	JW WILLIAMS GLYCOL DEHYDRATOR, SN: 426/1	13.90	QUESTAR EXPLORATION - IRISH CREEK 11-21	0	70	0.00	0	0	04MF1089
081	0206	VOC	CONDENSATE STORAGE TANK	16.12	WEXPRO - EAST HIAWATHA MOSU (TANK 344)	0	70	0.00	0	0	
081	0162	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	16.20	CHEVRON USA, INC. -DUNCAN VANSCHAICK 1-3	0	70	0.00	0	0	02MF0056
081	0210	VOC	CONDENSATE STORAGE TANK	16.47	WEXPRO - POWDER WASH UNIT (TANK 1475)	0	70	0.00	0	0	
081	0201	VOC	CONDENSATE TANK	18.99	WESTERN GAS RESOURCES - SMITH 1-35	0	70	0.00	0	0	
081	0153	VOC	ENERTEK DEHYVENT-1	19.30	WESTERN GAS RESOURCES INC SAND WASH STA	0	70	0.00	0	0	97MF0651
081	0153	VOC	ENERTEC DEHYVENT-2	19.30	WESTERN GAS RESOURCES INC SAND WASH STA	0	70	0.00	0	0	97MF0652
081	0158	VOC	TWO GLYCOL DEHYDRATORS	20.12	CHEVRON USA, INC. - VAN SCHAICK A-5	0	70	0.00	0	0	00MF0510
081	0049	VOC	GLYCOL DEHYDRATOR	23.28	QUESTAR GAS MANAGEMENT COMPANY	0	70	0.00	0	0	GRAND.000007
081	0219	VOC	CONDENSATE STORAGE TANKS	25.90	NANCE PETROLEUM CORP - VOLOSHIN-MORTON #	0	70	0.00	0	0	
081	0235	VOC	CONDENSATE TANK	27.50	THOMAS OPERATING CO. - KLAENHAMMER #3A	0	70	0.00	0	0	04MF0326
081	0217	VOC	CONDENSATE STORAGE TANK	29.05	WEXPRO - SUGARLOAF SCRUBBER (TANK 168)	0	70	0.00	0	0	
081	0148	VOC	CUSTOM GLYCOL DEHYDRATOR	32.00	J-W OPERATING COMPANY -SAND HILLS	0	70	0.00	0	0	99MF0798
081	0196	VOC	JW WILLIAMS GLYCOL DEHYDRATOR	38.69	CHEVRON USA, INC. - VAN SCHAIK C-10	0	70	0.00	0	0	03MF0203
081	0207	VOC	CONDENSATE STORAGE TANK	46.17	WEXPRO - EAST HIAWATHA MOSU (TANK 923)	0	70	0.00	0	0	
081	0218	VOC	CONDENSATE STORAGE TANKS	46.71	NANCE PETROLEUM CORP - NOLAND #1-15	0	70	0.00	0	0	
081	0049	VOC	CONDENSATE TANKS	47.20	QUESTAR GAS MANAGEMENT COMPANY	0	70	0.00	0	0	
081	0205	VOC	CONDENSATE STORAGE TANK	56.86	WEXPRO - EAST HIAWATHA MOSU (TANK 779)	0	70	0.00	0	0	
081	0220	VOC	CONDENSATE STORAGE TANKS	85.52	NANCE PETROLEUM CORP - KOWACH #1-9	0	70	0.00	0	0	06MF0345
103	0010	108883	OIL & GAS CUSTOM GLYCOL DEHYDRATOR	2.50	CHEVRON USA - WILSON CREEK GAS PLT	0	70	0.00	0	0	03RB0385
103	0014	PM10	B-MINE VENTILATION VENT	5.73	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	00RB0283
103	0014	PM10	COAL HAULING	837.18	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	03RB0569F
103	0014	PM10	COAL STOCKPILE	12.81	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	03RB0570
103	0014	PM10	HOPPER-LOADING	2.10	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	03RB0570
103	0014	PM10	RAILCAR LOADING	3.54	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	03RB0570
103	0014	PM10	COAL STOCKPILES	1.68	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	12RB802-2
103	0014	PM10	CRUSHER-HOPPER LOADING	1.75	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	12RB802-2
103	0014	PM10	LOADING TO TRUCK LOADOUT	2.10	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	12RB802-2
103	0014	PM10	TRUCK LOADING	3.54	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	12RB802-2
103	0014	PM10	REFUSE HAUL ROAD	24.97	BLUE MOUNTAIN ENERGY - DESERADO MINE	0	70	0.00	0	0	12RB802-3F
103	0010	VOC	EQUIPMENT LEAKS IN NATURAL GAS	11.70	CHEVRON USA - WILSON CREEK GAS PLT	0	0	0.00	0	0	94RB192-1
103	0010	VOC	CONDENSATE STORAGE TANK	15.55	CHEVRON USA - WILSON CREEK GAS PLT	0	70	0.00	0	0	02RB1010
103	0224	VOC	CONDENSATE TANK	21.90	TEXACO E & P - WILSON CREEK UNIT 66 TANK	0	70	0.00	0	0	
103	0010	VOC	OIL & GAS CUSTOM GLYCOL DEHYDRATOR	18.60	CHEVRON USA - WILSON CREEK GAS PLT	0	70	0.00	0	0	03RB0385
103	0010	VOC	CRUDE OIL: TANK TRUCK LOADING	19.55	CHEVRON USA - WILSON CREEK GAS PLT	0	70	0.00	0	0	03RB0234
107	0075	CO	CATERPILLAR DIESEL ENGINE	5.71	DUCKELS CONST INC - HOGUE GRAVEL PIT	0	70	0.00	0	0	06RO0252
107	0075	NO2	CATERPILLAR DIESEL ENGINE	21.48	DUCKELS CONST INC - HOGUE GRAVEL PIT	0	70	0.00	0	0	06RO0252
107	0009	PM10	4 MINE VENT FANS (PORTAL)-ACFM	11.07	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0009	PM10	OUTSIDE COAL CRUSHING	1.25	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0013	PM10	FUGITIVES	70.00	HAYDEN GULCH TERMINAL INC	0	70	0.00	0	0	05RO0020
107	0013	PM10	NON-FUGITIVE	1.02	HAYDEN GULCH TERMINAL INC	0	70	0.00	0	0	05RO0020
107	0009	PM10	COAL STOCKPILES	1.51	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0071	PM10	FUGITIVE EMISSIONS	1.05	TRANS COLO CONCRETE	0	70	0.00	0	0	90RO192
107	0009	PM10	DOZER ACTIVITY	36.58	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0080	PM10	GRAVEL PIT	4.07	ED HOCKIN TRUCKING, INC.	0	70	0.00	0	0	01RO0299
107	0009	PM10	FRONT END LOADERS MOVEMENT	2.42	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	
107	0009	PM10	HAUL ROADS	47.55	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0075	PM10	FUGITIVE DUST ACTIVITIES	3.42	DUCKELS CONST INC - HOGUE GRAVEL PIT	0	70	0.00	0	0	99RO0342F
107	0057	PM10	LANDFILL OPERATIONS	16.92	TWIN LANDFILL CORP. - MILNER LANDFILL	0	70	0.00	0	0	02RO0124
107	0009	PM10	LOW QUALITY COAL	8.00	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0009	PM10	WASTE ROCK LOADNG/UNLOADG	2.31	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0009	PM10	MAIN RAIL LOADOUT	5.25	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0081	PM10	FUGITIVE EMISSIONS	8.00	LAFARGE WEST, INC - RIVER VALLEY RESOURC	0	70	0.00	0	0	03RO0044F
107	0079	PM10	FUGITIVE EMISSIONS	15.02	PRECISION EXCAVATING, INC.	0	70	0.00	0	0	00RO0741F
107	0009	PM10	PRIMARY COAL CRUSHER	1.88	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0009	PM10	SCREEN - COAL WASH PLANT	1.00	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0009	PM10	SCREENING AT SECDRY CRSHR	11.70	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0009	PM10	SECONDARY COAL CRUSHER	6.00	TWENTYMILE COAL CO.- FOIDEL CREEK	0	70	0.00	0	0	93RO1204
107	0018	PM10	TOP SOIL, OVERBURDEN COAL-FUGITIVE EMISSIONS	180.00	SENECA COAL CO SENECA II W	0	70	0.00	0	0	82RO258F
107	0024	PM10	CONVEYORS/TRANSFER POINTS	3.31	LAFARGE WEST, INC. - STEAMBOAT SOUTH PIT	0	70	0.00	0	0	87RO030F
107	0024	PM10	SAND AND GRAVEL OPERATION	19.74	LAFARGE WEST, INC. - STEAMBOAT SOUTH PIT	0	70	0.00	0	0	87RO030F
107	0058	VOC	VAPOR LOSS W/O CONTROLS	2.26	BEAR RIVER VALLEY FARMERS COOP	0	70	0.00	0	0	02RO0072S
107	0057	VOC	LANDFILL OPERATIONS	1.85	TWIN LANDFILL CORP. - MILNER LANDFILL	0	70	0.00	0	0	02RO0124