year averages, there are no exceedances of the 2015 NAAQS in the CD-C Project Area in the 2022 future year. The maximum value of the 2-year average concentrations is 70.1 ppb. Using the EPA calculation method for Design Values, this corresponds to a Design Value of 70 ppb, which is less than 71 ppb and therefore does not exceed the NAAQS. Note that there are no exceedances of the 2015 NAAQS within the CD-C Project Area using the MATS results.

Table 4-47. CD-C Project Area criteria pollutant modeling results.

Pollutant	Averaging Time	Modeled Concentration from CD-C Proposed Action Alternative Sources[2]	Modeled Concentration from CD-C No Action Alternative Sources[2]	Modeled Concentration from All Sources	PSD[1] Class II Increment	WAAQS	NAAQS
CO	1-hour	--[3]	--[3]	715.0	n/a	40,000	40,000
($\mu g/m^3$)	8-hour	--[3]	--[3]	408.7	n/a	10,000	10,000
NO_2	1-hour	44.2	20.1	65.8	n/a	188	188
($\mu g/m^3$)	Annual	6.4	2.9	13.8	25	100	100
O_3 (ppb)	8-hour	2.6	1.2	72.9[4]	n/a	75	70
SO_2	1-hour	0.02	0.01	49.5	n/a	196	196
($\mu g/m^3$)	3-hour	0.02	0.01	30.5	512	1,300	1,300
PM_{10}	24-hour	7.3	3.3	55.8	30	150	n/a
($\mu g/m^3$)	Annual	2.5	1.1	7.6	17	50	50
PM_{25}	24-hour	2.1	0.9	8.4	9	35	35
($\mu g/m^3$)	Annual	0.5	0.2	3.8	4	12	12

[1] The PSD demonstrations serve information purposes only and do not constitute a regulatory PSD increment consumption analysis

[2] NO_2 1-hour concentration is 8th highest daily maximum 1-hour concentration. CD-C Project source results include contribution from NO

[3] No value is given for the CD-C Project source CO concentration contributions because the CAMx source apportionment tool does not track CO.

[4] Exceedance occurs only for 2006 meteorology. No exceedance occurs for 2005 meteorology or for 2-year average of results using 2005 and 2006 meteorology (maximum value of 70.1 ppb).

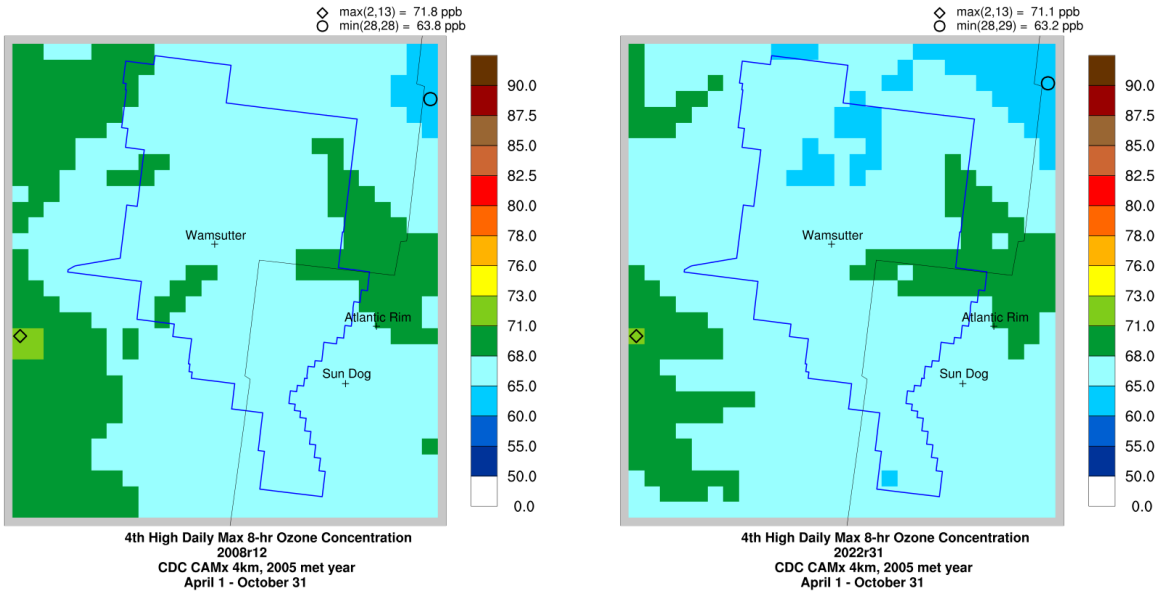

Figure 4-48. 4th highest daily maximum 8-hour average ozone: met05. Left panel: 2008. Right panel: 2022.

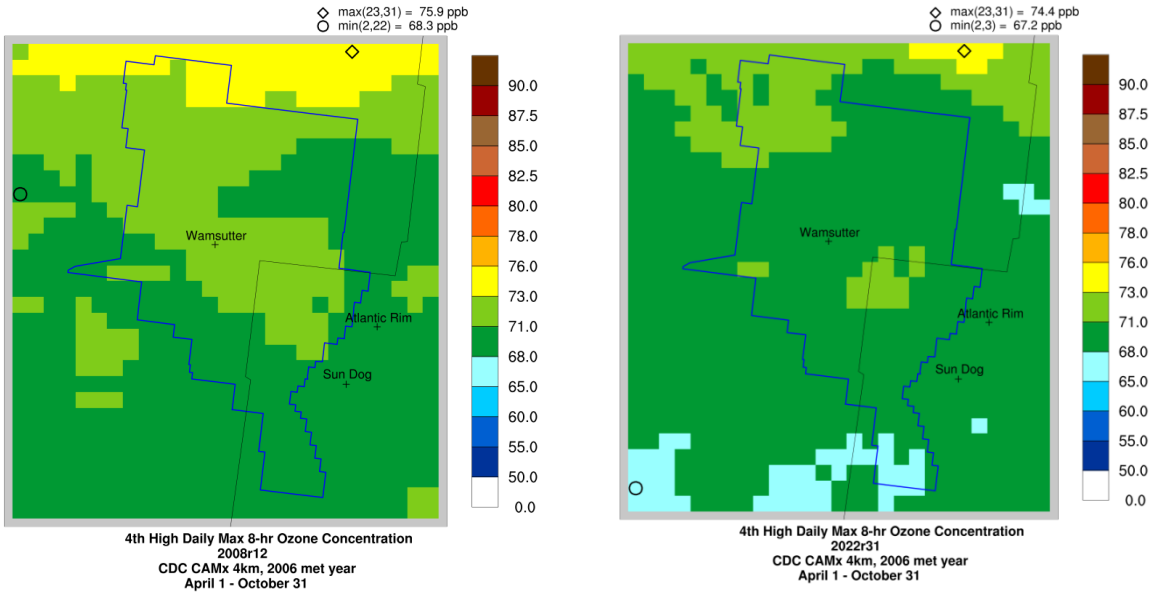

Figure 4-49. 4th highest daily maximum 8-hour average ozone: met06. Left panel: 2008. Right panel: 2022.

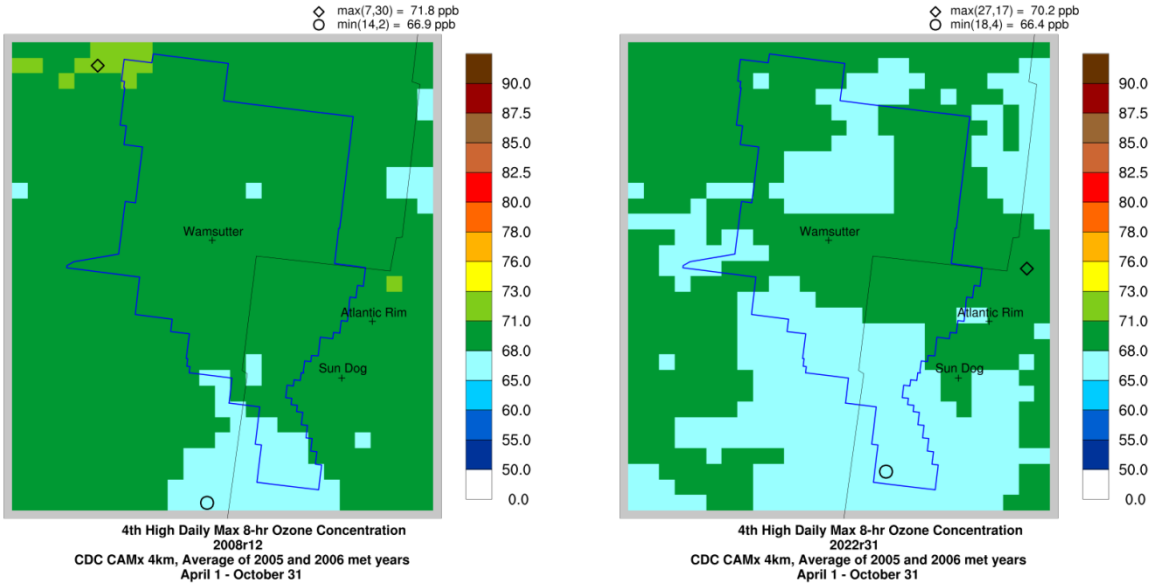

Figure 4-50. 4th highest daily maximum 8-hour average ozone: average of met05 and met06. Left panel: 2008. Right panel: 2022.

5.0 Summary of CD-C Air Quality Impact Analysis

In this Section, we summarize the results of the CD-C Air Quality Impact Analysis.

5.1 SUMMARY OF NEAR-FIELD MODELING RESULTS

Air quality impacts resulting from the CD-C Project production activities would be in compliance with the National Ambient Air Quality Standards (NAAQS) and Wyoming Ambient Air Quality Standards (WAAQS), and would not exceed the Prevention of Significant Deterioration (PSD) Class II Increments.

CD-C Project field development activities would be in compliance with the NAAQS and WAAQS, however well pad construction and well drilling activities could result in elevated 1-hour NO_2 concentration impacts and 24-hour $PM_{2.5}$ concentration impacts that are above the level of the 1-hour NO_2 NAAQS and WAAQS, 24-hour $PM_{2.5}$ NAAQS and WAAQS, and 24-hour PM_{10} WAAQS, at areas immediately adjacent to these activities.

5.2 SUMMARY OF FAR-FIELD MODELING RESULTS

CD-C Proposed Action Alternative emissions make no significant contribution to modeled exceedances of the NAAQS for CO, NO_2, SO_2, $PM_{2.5}$, or PM_{10} in the 2022 future year. For these criteria pollutants, the modeling results show attainment throughout the 4 km domain except in the immediate vicinity of point sources unrelated to the CD-C Project. Exceedances of the CO, and PM_{10} standards are the result of impacts from 2005 fire in Lincoln County, and the SO_2 exceedances are highly localized and due to emissions from a Fremont County source and a source in western Sweetwater County. Examination of the spatial extent and magnitude of the CD-C Proposed Action Alternative and No Action Alternative contributions to criteria pollutant concentrations within the 4 km grid shows that none of the exceedances of the ambient air quality standards for CO, NO_2, SO_2, $PM_{2.5}$, or PM_{10} in the 2022 future year modeling have significant contributions from emissions from the CD-C Project Alternatives.

For the Proposed Action Alternative modeling scenario, the MATS results showed that the 70 ppb 2015 ozone NAAQS is attained throughout the study area in 2022 except in Sublette and Fremont Counties in Wyoming and in northern Colorado for both 2005 and 2006 meteorological years. The NAAQS exceedances in Sublette County are influenced by high observed winter ozone measurements that affect the DVC value for the Boulder, WY monitor. Exceedances in northern Colorado occur in the vicinity of the Fort Collins Metropolitan Area. The contribution of the CD-C Project emissions to 2022 DVF exceedances of the 70 ppb NAAQS at monitors in the study area is <0.1 ppb. Examination of the spatial extent and magnitude of the CD-C Proposed Action Alternative and No Action Alternative contributions to DVFs within the study area shows that none of the exceedances of the 70 ppb NAAQS in the 2022 future year modeling have significant contributions from emissions from the CD-C Project.

Projected Design Values for 2022 in the vicinity of the CDC project are in the range of 60 – 69 ppb and attain the 70 ppb 2015 NAAQS. The absolute modeling results show values of the 2022 4th high DM8 greater than 70 ppb in the CD-C Project Area using 2006 meteorology, but all values of the 2022 4th high DM8 in the CD-C Project Area are less than 70 ppb using 2005 meteorology. The 2-year average 4th high DM8 value that approximates a DVF in the absolute

modeling results shows no values equal to or exceeding 71 ppb and this is consistent with the MATS results that also show no exceedances in the CD-C Project Area.

Using the absolute modeling results, the CD-C Proposed Action Alternative emissions contributed 1.3 ppb or less (1.8% or less) to monitors in the study area with high modeled ozone (>70 ppb). The monitors with the largest contribution from CD-C Project Alternative emissions are those in closest proximity to the Project Area and most frequently downwind of it: Wamsutter, Atlantic Rim, Sun Dog and Spring Creek. In Sublette County, ozone impacts due to the CD-C Proposed Action Alternative are less than or equal to 0.04 ppb.

The MATS-estimated CD-C Proposed Action Alternative maximum impact on the 2022 DVF is less than or equal to 0.8 ppb for both meteorological years. The two year approximation to a 2022 Design Value obtained using absolute model concentrations shows the CD-C Proposed Action Alternative maximum ozone impact is 1.7 ppb. For both the absolute modeled concentration and MATS results, the largest ozone impacts due to the CD-C Proposed Action Alternative emissions are in the vicinity of the CD-C Project Area. In Sublette County, ozone impacts due to the CD-C Proposed Action Alternative are less than or equal to 0.04 ppb.

Air concentrations attributable to Proposed Action Alternative emissions sources did not exceed the PSD increments at any Class I or sensitive Class II area, using 2005 or 2006 meteorology.

Air pollutant concentrations due to the No Action Alternative emissions are always lower than those due to the Proposed Action Alternative emissions. The CD-C No Action Alternative emissions contributed 0.61 ppb or less (0.81% or less) to monitors with high modeled ozone (DM8>70 ppb). Impacts from the No Action Alternative emissions do not ever exceed the PSD increments.

The visibility analysis for the CD-C Proposed Action Alternative predicts a total of 8 days with impacts > 0.5 dv and zero days > 1.0 dv due to the CD-C Proposed Action emissions over the course of the 2 year simulation. The areas with visibility impacts exceeding 0.5 dv are: Savage Run WA, Dinosaur NM and Mount Zirkel WA. The cumulative visibility analysis shows that: (1) visibility improves at all Class I and sensitive Class II areas in 2022 compare to 2008 for the Proposed Action Alternative on the 20% best and 20% worst days; and (2) average visibility impairment on the 20% best and 20% worst days due to Proposed Action Alternative and RFD emissions sources (combined) ranges from 0.01 to 0.18 dv, over the Class I and sensitive Class II areas.

For the No Action Alternative, zero days > 0.5 dv are predicted throughout the Class I and sensitive Class II areas over the two year simulation due to No Action Alternative emissions contributions to regional haze. The cumulative visibility results for the No Action Alternative are almost identical to the Proposed Action Alternative results.

The DAT for nitrogen was exceeded at 5 Class I or sensitive Class II areas near/downwind of CD-C Project Area due to emissions from the Proposed Action Alternative sources and at 4 areas due to emissions from the No Action Alternative. The DAT for sulfur was not exceeded at any

Class I or sensitive Class II area for either the Proposed Action Alternative or No Action Alternative.

Maximum cumulative nitrogen deposition in 2022 due to all regional emissions sources, including the Proposed Action Alternative emissions, exceeds the nitrogen deposition thresholds at all Class I and sensitive Class II areas, with the exception of the Eagles Nest WA, for both meteorological years. Sulfur deposition in 2022 due to all emissions sources is below the 5.0 kg/ha/yr threshold at all Class I and sensitive Class II areas for both meteorology years.

There were no ANC changes exceeding the FS LAC thresholds due to emissions from Proposed Action Alternative sources or the No Action Alternative sources.

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