Minnesota Pollution Control Agency

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January 13, 2017

Mr. Robert A. Kaplan
Acting Regional Administrator
U.S. Environmental Protection Agency Region 5
77 West Jackson Boulevard
Mail Code: R-19J
Chicago, IL 60604-3507

RE: State of Minnesota Updated Designation Recommendation for Primary National Ambient Air Quality Standard for Sulfur Dioxide and Data Requirements Rule Final Modeling Analyses

Dear Mr. Kaplan:

Pursuant to Section 107(d) of the Clean Air Act, and as directed by the July 22, 2016, memorandum "Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard – Round 3," the Minnesota Pollution Control Agency (MPCA), on behalf of Governor Mark Dayton, hereby submit the following designation recommendations and supporting information for the one-hour National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO_2).

This recommendation does not include areas in the state that are under tribal jurisdiction. Tribal governments may submit designation recommendations to the U.S. Environmental Protection Agency (EPA) under the Tribal Authority Rule of 1998 (63 FR 7524).

This letter and enclosed modeling analyses also serve to fulfill Minnesota's remaining obligations under the "Data Requirements Rule for the 2010 1-Hour Sulfur Dioxide Primary National Ambient Air Quality Standard" (DRR). The DRR, at 40 CFR 51.1203 required states to submit final modeling analyses for subject sources under the modeling pathway no later than January 13, 2017. All relevant modeling files are included on the enclosed CD.

The designation recommendations herein are based on a combination of modeling (as required by the DRR), monitoring, and potential to emit data.

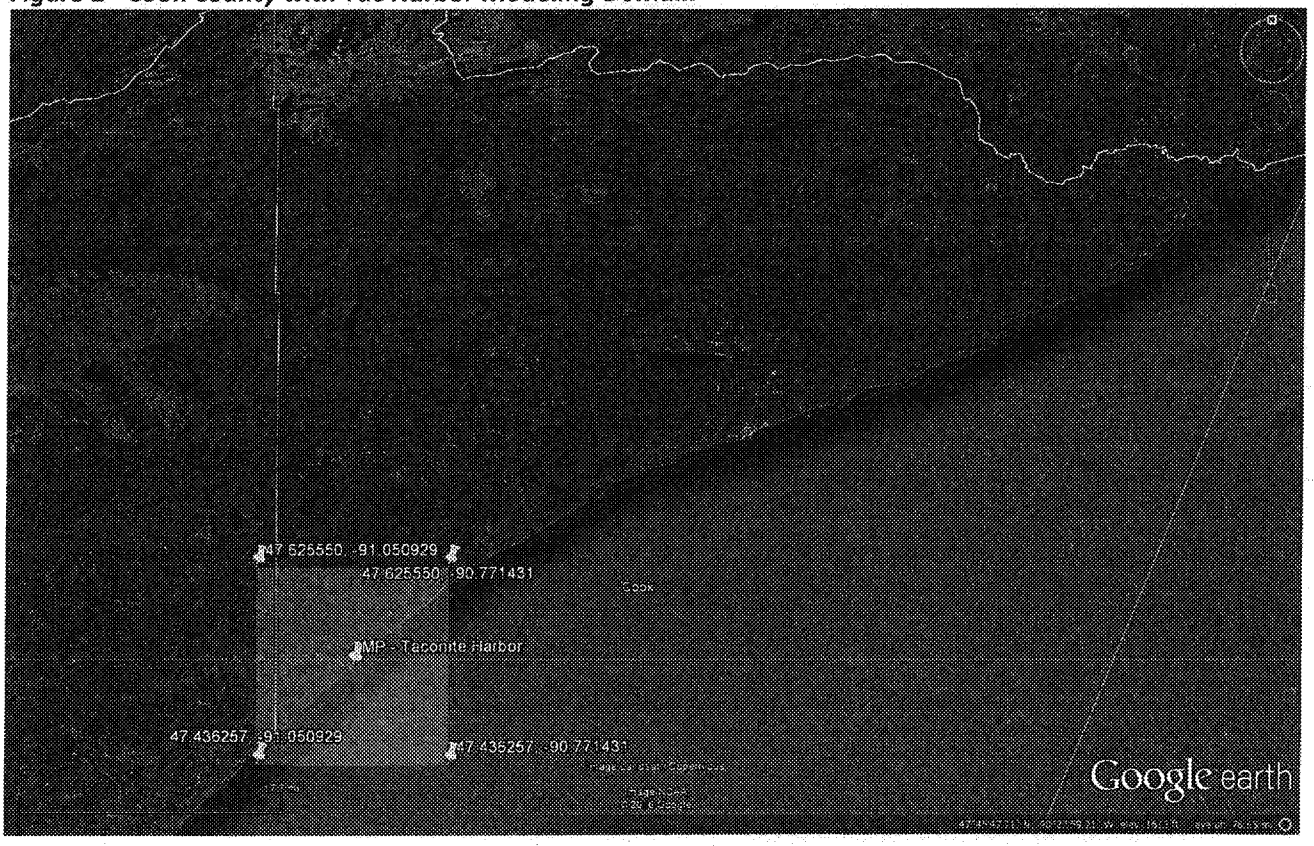
Modeling

Minnesota has four sources subject to the modeling provisions of the DRR. All DRR-required modeling files and associated technical information are provided in the enclosed CD. The information below pertains specifically to the designation recommendations resulting from the DRR-required air quality analyses.

Minnesota Power – Taconite Harbor Energy Center (Tac Harbor)

The Tac Harbor facility is located in Cook County, Minnesota. DRR modeling (see enclosed CD) predicts compliance with the one-hour SO_2 NAAQS. Figure 1 below shows an image of the Tac Harbor modeling domain (blue square). The Cook/Lake County line is depicted in light green (Cook County is to the east, and includes the arrowhead of Minnesota). 2014 emission inventories indicate that there are no sources, besides Tac Harbor, with significant SO_2 emissions in Cook County. Total reported 2014 SO_2 emissions in Cook County, aside from those emitted at Tac Harbor, are less than one ton per year (tpy).

Figure 1 - Cook County with Tac Harbor Modeling Domain

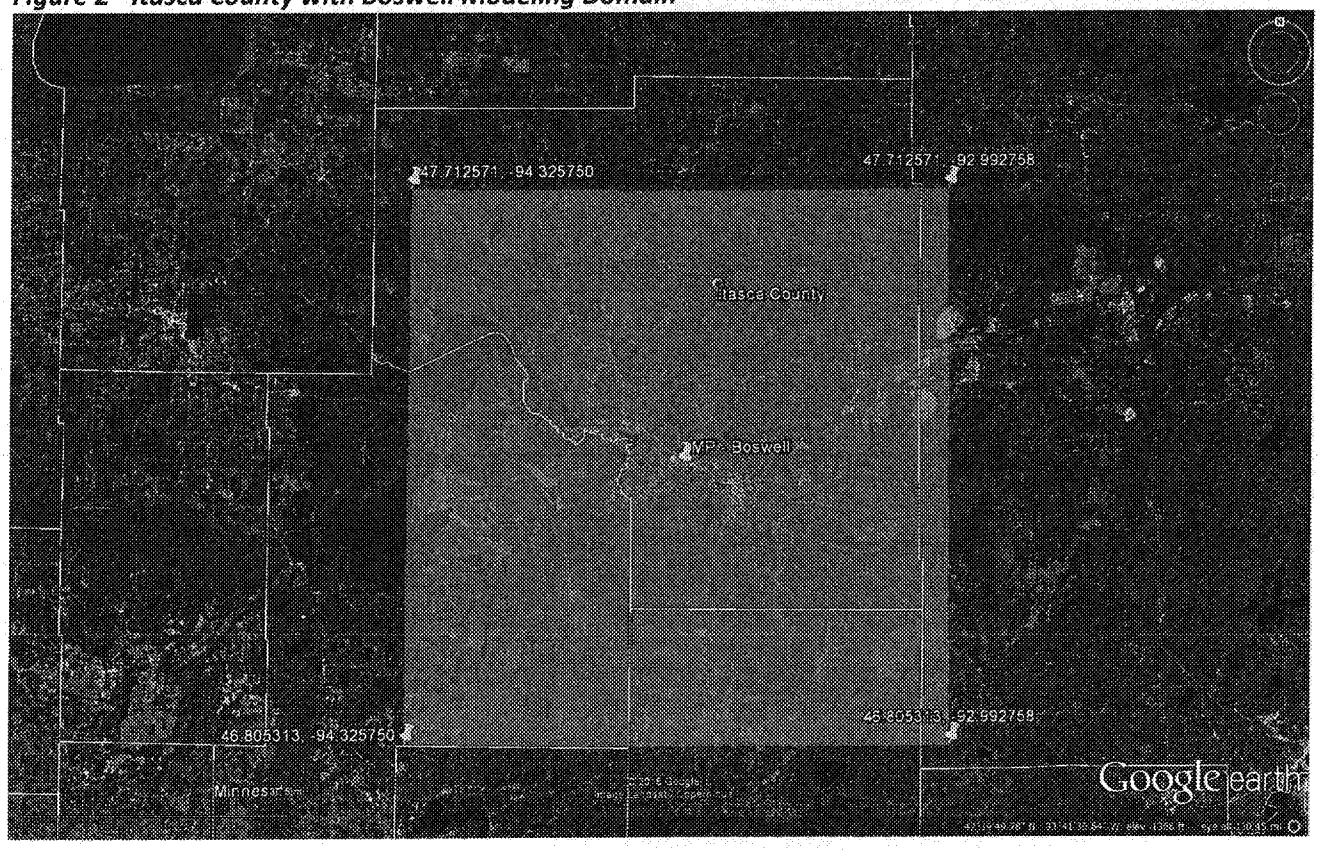


Based on a DRR-required modeling analysis and 2014 emissions inventory review, the MPCA recommends a designation of "attainment" for all of Cook County.

Minnesota Power – Boswell Energy Center (Boswell)

The Boswell facility is located in Itasca County, Minnesota. DRR modeling (see enclosed CD) predicts compliance with the one-hour SO_2 NAAQS. Figure 2 below shows an image of the Boswell modeling domain (blue square). County lines are depicted in light green. A portion of Itasca County lay north and west of the modeling domain. 2014 emission inventories indicate that there are no sources with significant SO_2 emissions located in these portions of the county – total 2014 SO_2 emissions reported in this area are less than one tpy.

Figure 2 - Itasca County with Boswell Modeling Domain



Based on a DRR-required modeling analysis and 2014 emissions inventory review, the MPCA recommends a designation of "attainment" for all of Itasca County.

Otter Tail Power – Hoot Lake Plant (Hoot Lake)

The Hoot Lake facility is located in Otter Tail County, Minnesota. DRR modeling (see enclosed CD) predicts compliance with the one-hour SO_2 NAAQS. Figure 3 below shows an image of the Hoot Lake modeling domain (faint grey line), with Otter Tail County shaded in blue and orange. The orange portion of Otter Tail County is located outside the Hoot Lake modeling domain. 2014 emission inventories indicate that there are no sources with significant SO_2 emissions located in this orange portion – total 2014 SO_2 emissions reported in this area are less than one tpy.

Figure 3 - Otter Tail County with Hoot Lake Modeling Domain

Based on a DRR-required modeling analysis and emissions inventory review, the MPCA recommends a designation of "attainment" for all of Otter Tail County.

Xcel Energy – Sherburne County Generating Station (Sherco)

The Sherco facility is located in Sherburne County, Minnesota. DRR modeling (see enclosed CD) predicts compliance with the one-hour SO_2 NAAQS. All portions of Sherburne County are located within the DRR modeling domain. Therefore, based on DRR-required modeling, Minnesota recommends a designation of "attainment" for Sherburne County.

Based on a DRR-required modeling analysis, the MPCA recommends a designation of "attainment" for all of Sherburne County.

Monitoring

Minnesota currently has five monitoring sites in three counties (Dakota, Hennepin, Washington) with quality-assured SO_2 monitoring data reported to EPA's Air Quality System (AQS) from 2013-2015. The design values associated with those monitors are provided below in Table 1 and all clearly demonstrate attainment with the one-hour SO_2 NAAQS. In fact, the highest design value was recorded at a monitor located in the immediate vicinity of the Flint Hills Resources Pine Bend Refinery, and registered at just 17% of the level of the NAAQS.

Table 1 - SO_2 1-Hour Monitored Design Values

AQS ID	Site Name	County	2013-2015 (Design Value in ppb)	Standard (in ppb)	Most Recent DV Year Percent Standard
270370020	FHR 420	Dakota	11	75	**17%**
270370423	FHR 423	Dakota	5	75	**9%**
271630436	Saint Paul Park Refinery (436)	Washington	10	75	**13%**
270370443	FHR 443	Dakota	2	75	**3%**
270530954	Minneapolis (954)	Hennepin	9	75	**12%**

The form of the one-hour SO_2 NAAQS of 75 parts per billion (ppb) is the three-year average of the 99th percentile of the yearly distribution of one-hour daily maximum SO_2 concentrations.

Based on the above three years of quality-assured monitoring data from 2013-2015, the MPCA recommends a designation of "attainment" for Dakota, Hennepin, and Washington Counties.

Additionally, in 2014 an SO_2 monitor was installed in the City of Rochester (Olmsted County). The monitoring was intended to continue for three years (through 2016) so data could be used for model verification. Minnesota has two years of AQS-reported, quality-assured monitoring data from this site (AQS ID 27-109-5008). Though insufficient to provide a final NAAQS design value for the site, the two complete years of monitoring data (2014-2015) show extremely low SO_2 levels in the area. The one-hour daily maximum SO_2 concentrations for both 2014 and 2015 are two ppb (3% of the value of the NAAQS). It is extraordinarily unlikely that monitoring data from 2016 would show any maximum hourly value high enough to produce a design value at or above the level of the NAAQS.

Based on two years of quality-assured monitoring data from 2014-2015, the MPCA recommends a designation of "attainment" for Olmsted County.

Potential to Emit

Minnesota's original designation recommendation letter recommended an attainment designation for all counties in Minnesota that contain only sources with a potential to emit (PTE) less than 100 tpy, based on interpretation of the preamble of the final SO_2 NAAQS rule and March 24, 2011, guidance titled "Area Designations for the 2010 Revised Primary Sulfur Dioxide National Ambient Air Quality Standards." The MPCA understands that EPA has since updated its guidance pertaining to the designations of the SO_2 NAAQS, and indicated in its March 20, 2015, update that only areas with air quality monitoring data or modeling analyses would be designated attainment. However, we believe that nonattainment in a county with no large SO_2 emission sources is extremely unlikely, especially given

the low monitored design values in Minnesota in counties that do contain larger SO_2 emissions sources. Because sources' actual emissions are typically well below the level of their restricted emissions limits, the MPCA believes that compliance with the NAAQS is reasonably assured in counties with no sources authorized to emit in excess of 100 tpy SO_2.

Therefore, the MPCA recommends a designation of "attainment" for all counties in Minnesota that contain only sources with a PTE less than 100 tpy. These counties include:

Table 2 - Counties with No Sources of SO_2 PTE > 100 tpy

Aitkin	Becker	Beltrami	Big Stone
Cass	Chisago	Clearwater	Cottonwood
Dodge	Douglas	Fillmore	Freeborn
Grant	Houston	Jackson	Kanabec
Kittson	Lac Qui Parle	Lake of the Woods	Le Sueur
Lincoln	Mahnomen	Marshall	Meeker
Mille Lacs	Morrison	Murray	Nicollet
Nobles	Norman	Pennington	Pine
Pipestone	Pope	Red Lake	Redwood
Rice	Rock	Roseau	Sibley
Stevens	Todd	Traverse	Wabasha
Wadena	Waseca	Watonwan	Wilkin
Yellow Medicine			

Remaining counties

Because all SO_2 monitors in Minnesota - including those located near larger SO_2 sources - show very low levels of SO_2 concentrations, and because all DRR-required modeling predicted NAAQS compliance, the MPCA is confident that all counties in the state currently attain the one-hour SO_2 NAAQS. However, the MPCA recognizes that EPA is likely to designate counties without modeling/monitoring or other supporting air quality data as "unclassifiable".

The MPCA recommends a designation of "attainment/unclassifiable" for the following counties:

Table 3 - Counties Recommended for Attainment/Unclassifiable

Anoka	Blue Earth	Brown	Carlton
Carver	Chippewa	Clay	Crow Wing
Faribault	Goodhue	Hubbard	Isanti
Kandiyohi	Koochiching	Lake	Lyon
Martin	McLeod	Mower	Polk
Ramsey	Renville	Scott	St. Louis
Stearns	Steele	Swift	Winona
Wright			

As Commissioner of the MPCA, I am duly authorized by the Governor of the State of Minnesota to submit this letter on his behalf. If you have questions or comments on this submission, please contact Mary Jean Fenske of my staff at 651-757-2354.

Sincerely,

John Linc Stine
Commissioner

JLS/MK:ds

Enclosure