



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

June 24, 2020

Mr. Kurt Theide
Regional Administrator
U.S. EPA, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Kurt Theide:

Re: 2020 Assessment for Ongoing Data
Requirements for the 2010 Primary 1-Hour
Sulfur Dioxide National Ambient Air Quality
Standard

The Indiana Department of Environmental Management (IDEM) has completed a review of areas subject to ongoing data requirements under the 2010 primary 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS). Based on the evaluation, IDEM recommends that no additional assessments to characterize air quality are needed at this time.

Background

Implementation of the 2010 primary 1-hour SO₂ standard began in 2013 when United States Environmental Protection Agency (U.S. EPA) established nonattainment areas near monitors with data above the SO₂ NAAQS. In order to evaluate the remaining areas of the country, U.S. EPA established three additional rounds of designations: Round 2 on June 30, 2016, Round 3 on December 21, 2017, and Round 4 by December 31, 2020. This evaluation, per 40 Code of Federal Regulations (CFR) Subpart BB §51.1205(a) and (b), addresses areas designated during Round 2 and Round 3.

For areas designated during Rounds 2 and 3, ongoing data requirements are applicable if SO₂ monitoring or modeling using actual emissions was used as the basis for demonstrating attainment of the NAAQS during the designations process. For areas that used monitoring, ongoing requirements are the continued operation of the SO₂ monitoring network and the reporting of such data. For areas that used modeling, ongoing requirements are the assessment of annual SO₂ emissions and a recommendation regarding whether additional modeling is needed to characterize air quality to determine whether the area continues to meet the SO₂ NAAQS. However, per §51.1205(b)(2), if modeling demonstrates that air quality values at all receptors in the analysis area are no greater than 50% of the standard, and such demonstration is approved by the U.S. EPA Regional Administrator, the ongoing requirements of §51.1205(b) do not apply. Ongoing data requirements are also not applicable to

sources that relied on federally enforceable and permanent SO₂ emission limits as the basis for establishing designations demonstrating that the area will not violate the 2010 SO₂ NAAQS.

For areas where modeling shows ambient impacts greater than 50% of the standard, U.S. EPA generally recommends updated modeling under the following circumstances:

- The original modeling was between 50% and 90% of the standard (98.1 – 176.58 µg/m³) and emissions increase by 15% or more.
- The original modeling was equal to or greater than 90% of the standard (176.58 µg/m³) and there is any increase in emissions.

Round 2 Areas

During Round 2 designations, five coal-fired electric power plants in Indiana were identified, shown in Table 1, around which air quality characterization was required.

Table 1: Facilities Subject to the Round 2 Designation Process

| County | Source |
|-----------|--|
| Spencer | American Electric Power (AEP) – Rockport Station |
| La Porte | Northern Indiana Public Service Company (NIPSCO) – Michigan City Station |
| Posey | Vectren – A.B. Brown Station |
| Jefferson | Indiana-Kentucky Electric Corporation (IKEC) – Clifty Creek Station |
| Gibson | Duke Energy – Gibson Station |

On June 30, 2016, U.S. EPA completed designations for Round 2 designating the areas surrounding all of Indiana’s identified sources as “unclassifiable/attainment”. The final rule was published in the Federal Register (FR) on July 12, 2016 (81 FR 45039).

Ongoing data requirements, are applicable to areas that relied on SO₂ monitoring or modeling using actual emissions, if the modeling shows impacts greater than 50% of the standard, to demonstrate attainment of the NAAQS during the designations process. The applicability of ongoing requirements for Round 2 areas is shown in Table 2.

Table 2: Ongoing Data Requirements Applicability for Round 2 Areas

| Area | Source(s) | Modeled Impact µg/m ³ | Greater Than 50% NAAQS? | Ongoing Data Requirements Applicability? |
|-----------|-----------------------------------|---------------------------------------|----------------------------|--|
| Spencer | AEP – Rockport Station | 152.1 | Yes | Yes |
| La Porte | NIPSCO – Michigan City Station | 169.9 | Yes | Yes |
| Posey | Vectren – A.B. Brown Station | 196.08 | Yes | No (Emission limits used for designation.) |
| Jefferson | IKEC – Clifty Creek Station | 71.6 | No | No (Emission limits used for designation.) |
| Gibson | Duke Energy – Gibson Station | NA (Monitoring used for designation.) | | Yes |

As shown in Table 2, ongoing data requirements are applicable to only three of the five Round 2 areas. Each area is discussed below.

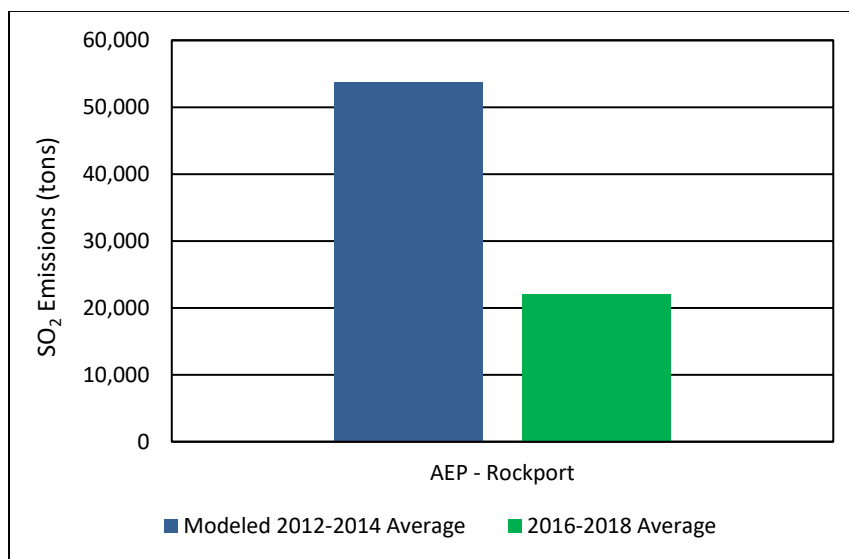
Spencer County (AEP - Rockport Station)

For Spencer County, on September 16, 2015, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values were greater than 50%, but less than 90%, of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and an emissions increase greater than 15% may necessitate additional modeling analyses to characterize air quality in the area. The primary source associated with the Spencer County area is AEP's Rockport Station. The analysis for the Spencer County area focused on the most recent three years of data and is documented in Table 3 and Chart 1.

Table 3: SO₂ Emissions (tons) for the Spencer County Area

| Source Name | 2012 | 2013 | 2014 | Modeled 2012-2014 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|-------------------|--------|--------|--------|---------------------------------|--------|--------|--------|----------------------|-------------------|
| AEP – Rockport | 54,390 | 51,636 | 54,979 | 53,668 | 24,341 | 20,784 | 21,241 | 22,122 | -59% |

Chart 1: SO₂ Emissions for Spencer County Area



As outlined in Table 3 and Chart 1, averaged SO₂ emissions for 2016-2018 have decreased approximately 59% from the averaged SO₂ emissions for 2012-2014 used in the modeling for designations. SO₂ emissions from 2018 are also below each of the individual years of 2012, 2013, 2014 used in the modeling.

Based on this SO₂ emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Spencer County. SO₂ emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO₂ NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

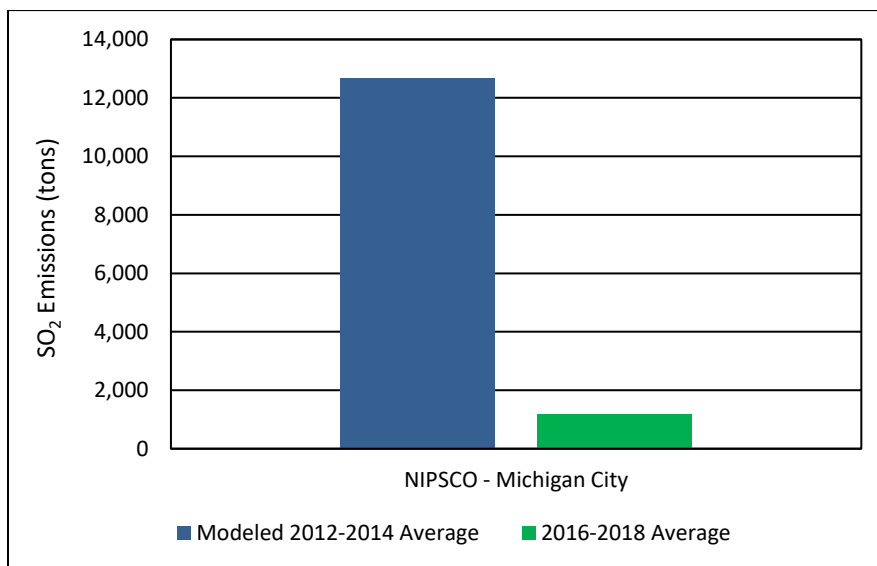
La Porte County (NIPSCO – Michigan City Station)

For La Porte County, on September 16, 2015, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values were greater than 50%, but less than 90%, of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and an emissions increase greater than 15% may necessitate additional modeling analyses to characterize air quality in the area. The primary source associated with the La Porte County area is NIPSCO’s Michigan City Station. The analysis for La Porte County focused on the most recent three years of data and is documented in Table 4 and Chart 2.

Table 4: SO₂ Emissions (tons) for the La Porte County Area

| Source Name | 2012 | 2013 | 2014 | Modeled 2012-2014 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|------------------------|--------|--------|--------|---------------------------|-------|------|------|-------------------|----------------|
| NIPSCO – Michigan City | 11,584 | 10,429 | 15,991 | 12,668 | 1,901 | 601 | 997 | 1,166 | -91% |

Chart 2: SO₂ Emissions for the La Porte County Area



As outlined in Table 4 and Chart 2, averaged SO₂ emissions for 2016-2018 have decreased approximately 91% from the averaged SO₂ emissions for 2012-2014 used in the modeling for designations. SO₂ emissions from 2018 are also below each of the individual years of 2012, 2013, 2014 used in the modeling.

Based on this SO₂ emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in La Porte County. SO₂ emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO₂ NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

Gibson County (Duke Energy – Gibson Station)

For Gibson County, because monitoring data was used to characterize air quality for Round 2 designations, ongoing data requirements are the continued operation of SO₂ monitors as well as the continued reporting of such data. Duke Energy continues to operate the SO₂ monitoring network and data is reported to U.S. EPA's Air Quality

System (AQS) database. It is worth noting that certified ambient air quality monitoring data continues to demonstrate attainment of the 2010 primary 1-hour SO₂ standard as shown in Table 5.

Table 5: Duke Energy's Gibson Generating Station SO₂ Monitoring Data

| Site ID | County | 99th Percentile Values, ppb | | | | | 3-Year Design Value, ppb | | |
|-----------|--------|-----------------------------|------|------|------|------|--------------------------|-----------|-----------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2015-2017 | 2016-2018 | 2017-2019 |
| 180510002 | Gibson | 59 | 71 | 48 | 49 | 41 | 59 | 56 | 46 |

Round 3 Areas

During Round 3 designations, eleven sources in Indiana, shown in Table 6, were identified around which SO₂ air quality characterization was required.

Table 6: Sources Subject to the Round 3 Designation Process

| County | Source |
|------------|----------------------------------|
| Floyd | Duke Energy – Gallagher Station |
| Huntington | U.S. Mineral Products – Isolatek |
| Jasper | NIPSCO - R.M. Schahfer Station |
| Lake | ArcelorMittal – USA |
| Lake | Cokenergy |
| Lake | U.S. Steel Gary Works |
| Posey | SABIC – Innovative Plastics |
| Sullivan | Hoosier Energy – Merom Station |
| Vermillion | Duke Energy – Cayuga Station |
| Warrick | ALCOA Warrick Operations |
| Warrick | ALCOA Power Plant |

Note: ArcelorMittal – Burns Harbor, located in Porter County, IN, is an affected source under the Data Requirements Rule and will be designated during the Round 4 designations process.

On December 21, 2017, U.S. EPA completed designations for Round 3 designating areas associated with ten of the eleven identified sources as “unclassifiable/attainment”. One area, Huntington Township, associated with U.S. Mineral Products, in Huntington County, was designated “nonattainment”. The final rule was published in the Federal Register on January 9, 2018 (83 FR 1098). Indiana has filed a petition for reconsideration and request for agency stay pending reconsideration of the final rule designating Huntington Township, Huntington County as nonattainment.

Ongoing data requirements, are applicable to areas that relied on SO₂ monitoring or modeling using actual emissions, if the modeling shows impacts greater than 50% of the standard, to demonstrate attainment of the NAAQS during the designations process. Ongoing data requirements are not applicable to areas that relied on federally enforceable and permanent SO₂ emission limits as the basis for establishing designations demonstrating that the area will not violate the 2010 SO₂ NAAQS. The applicability of ongoing requirements for Round 3 areas is shown in Table 7.

Table 7: Ongoing Data Requirements Applicability for Round 3 Areas

| Area | Source(s) | Modeled Impact µg/m ³ | Greater Than 50% NAAQS? | Ongoing Data Requirements Applicability? |
|--|---|-------------------------------------|----------------------------|--|
| Floyd | Duke Energy – Gallagher Station | 99.5 | Yes | Yes |
| Huntington | U.S. Mineral Products – Isolatek | Not Applicable | Not Applicable | Not Applicable |
| Jasper | NIPSCO – R.M. Schahfer Station | 162.7 | Yes | Yes |
| Lake | ArcelorMittal – USA Cokenergy U.S. Steel Gary Works | 192.2 ¹ | Yes | Yes |
| Posey | SABIC – Innovative Plastics | 191.9 | Yes | No (Emission limits used for designation.) |
| Sullivan | Hoosier Energy – Merom Station | 63.0 | No | No |
| Vermillion | Duke Energy – Cayuga Station | 176.4 | Yes | Yes |
| Warrick | ALCOA Warrick Operations ALCOA Warrick Power Plant | 189.7 | Yes | Yes |
| 1 – Modeled impact associated with the Carmeuse Lime facility, which accepted permanent and enforceable SO ₂ permit limits to demonstrate attainment of the 1-hr NAAQS. | | | | |

As shown in Table 7, ongoing data requirements are applicable to only five of the eight Round 3 areas. Each area is discussed below.

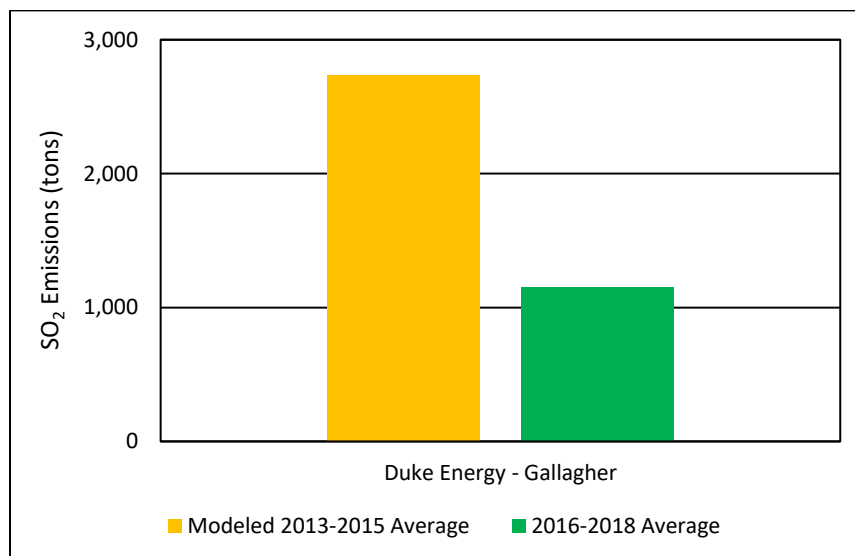
Floyd County (Duke Energy – Gallagher Station)

For Floyd County, on January 13, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values were greater than 50%, but less than 90%, of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and an emissions increase greater than 15% may necessitate additional modeling analyses to characterize air quality in the area. The primary source associated with the Floyd County area is Duke Energy's Gallagher Station. The analysis for Floyd County is documented in Table 8 and Chart 3.

Table 8: SO₂ Emissions (tons) for the Floyd County Area

| Source Name | 2013 | 2014 | 2015 | Modeled 2013-2015 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|-------------------------|-------|-------|-------|---------------------------|-------|------|-------|-------------------|----------------|
| Duke Energy – Gallagher | 2,498 | 3,528 | 2,178 | 2,735 | 1,457 | 858 | 1,149 | 1,155 | -58% |

Chart 3: SO₂ Emissions for the Floyd County Area



As outlined in Table 8 and Chart 3, averaged SO₂ emissions for 2016-2018 have decreased by approximately 58% from the averaged SO₂ emissions for 2013-2015 used in the modeling for designations. SO₂ emissions from 2018 are also below each of the individual years of 2013, 2014, 2015 used in the modeling.

Based on this SO₂ emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Floyd County. SO₂ emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO₂ NAAQS. The area is currently designated as

“unclassifiable/attainment” and no changes to its classification are necessary at this time.

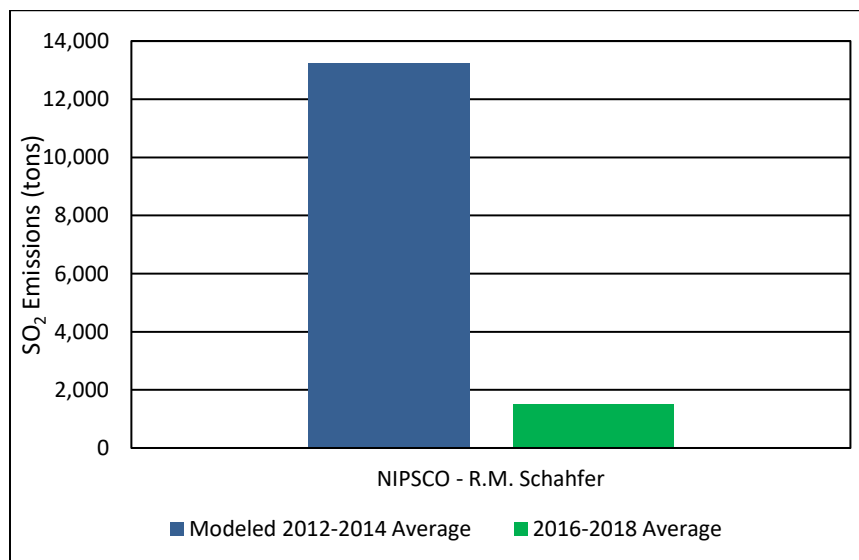
Jasper County (NIPSCO – R.M. Schahfer Station)

For Jasper County, on January 13, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values were greater than 50%, but less than 90%, of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and an emissions increase greater than 15% may necessitate additional modeling analyses to characterize air quality in the area. The primary source associated with the Jasper County area is NIPSCO’s R.M. Schahfer Station. The analysis for the Jasper County area focused on the most recent three years of data and is documented in Table 9 and Chart 4.

Table 9: SO₂ Emissions (tons) for Jasper County Area

| Source Name | 2012 | 2013 | 2014 | Modeled 2012-2014 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|------------------------|--------|--------|-------|---------------------------|-------|-------|-------|-------------------|----------------|
| NIPSCO – R.M. Schahfer | 14,911 | 16,418 | 8,413 | 13,247 | 1,441 | 1,570 | 1,467 | 1,493 | -89% |

Chart 4: SO₂ Emissions for the Jasper County Area



As outlined in Table 9 and Chart 4, averaged SO₂ emissions for 2016-2018 have decreased by approximately 89% from the averaged SO₂ emissions for 2012-2014 used in the modeling for designations. SO₂ emissions from 2018 are also below each of the individual years of 2012, 2013, 2014 used in the modeling.

Based on this SO₂ emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Jasper County. SO₂ emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO₂ NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

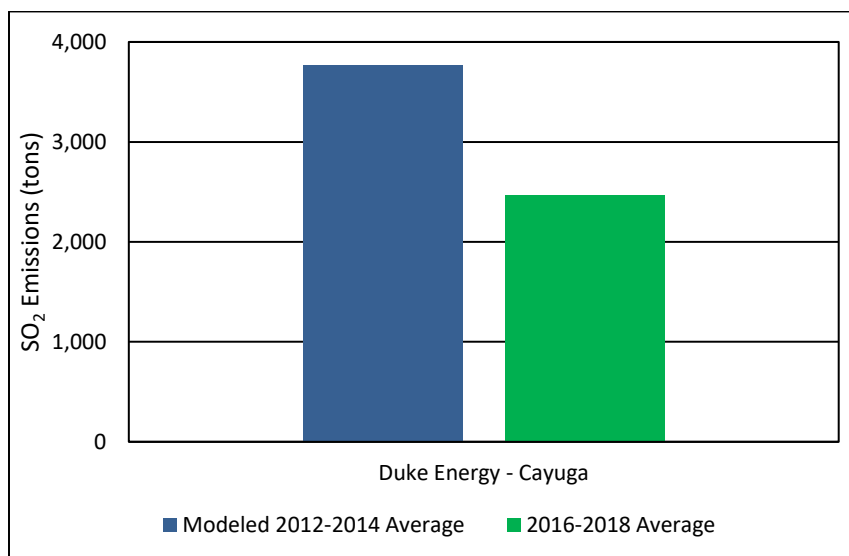
Vermillion County (Duke Energy – Cayuga Station)

For Vermillion County, on January 13, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values were greater than 50%, but less than 90%, of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and an emissions increase greater than 15% may necessitate additional modeling analyses to characterize air quality in the area. The primary source associated with the Vermillion County area is Duke Energy’s Cayuga Station. The analysis for the Vermillion County area focused on the most recent three years of data and is documented in Table 10 and Chart 5.

Table 10: SO₂ Emissions (tons) for the Vermillion County Area

| Source Name | 2012 | 2013 | 2014 | Modeled 2012-2014 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|----------------------|-------|-------|-------|---------------------------|-------|-------|-------|-------------------|----------------|
| Duke Energy – Cayuga | 3,223 | 4,628 | 3,448 | 3,766 | 2,819 | 1,915 | 2,657 | 2,464 | -35% |

Chart 5: SO₂ Emissions for the Vermillion County Area



As outlined in Table 10 and Chart 5, averaged SO₂ emissions for 2016-2018 have decreased approximately 35% from the averaged SO₂ emissions for 2012-2014 used in the modeling for designations. SO₂ emissions from 2018 are also below each of the individual years of 2012, 2013, 2014 used in the modeling.

Based on this SO₂ emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Vermillion County. SO₂ emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO₂ NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

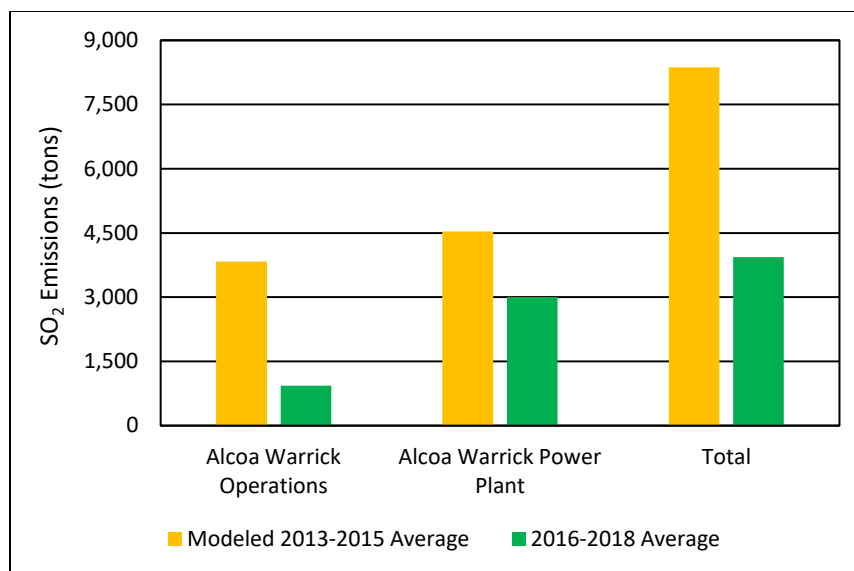
Warrick County (ALCOA Warrick Operations, ALCOA Warrick Power Plant)

For Warrick County, on October 18, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values greater than 90% of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and any emissions increase may necessitate additional modeling analyses to characterize air quality in the area. The primary sources associated with the Warrick County area are ALCOA Warrick Operations and ALCOA Warrick Power Plant. The analysis for Warrick County focused on the most recent three years of data and is documented in Table 11 and Chart 6.

Table 11: SO₂ Emissions (tons) for Round 3 Sources in Warrick County

| Source Name | 2013 | 2014 | 2015 | Modeled 2013-2015 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|---------------------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|--------------------------|-----------------------|
| ALCOA Warrick Operations | 3,852 | 3,500 | 4,147 | 3,833 | 1,374 | 24 | 1,397 | 932 | -76% |
| ALCOA Warrick Power Plant | 5,707 | 4,993 | 2,907 | 4,536 | 3,457 | 2,632 | 2,927 | 3,005 | -34% |
| Total | 9,559 | 8,493 | 7,054 | 8,369 | 4,831 | 2,656 | 4,324 | 3,937 | -53% |

Chart 6: SO₂ Emissions for the Warrick County Area



As outlined in Table 11 and Chart 6, averaged SO₂ emissions for 2016-2018 have decreased approximately 76% and 34% for ALCOA Warrick Operations and ALCOA Warrick Power Plant, respectively, from the averaged SO₂ emissions for 2013-2015 used in the modeling for designations. SO₂ emissions from 2018 for both facilities are also below each of the individual years of 2013, 2014, and 2015 for Alcoa Warrick Operations used in the modeling.

Based on this SO₂ emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Warrick County. SO₂ emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO₂ NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification is necessary at this time.

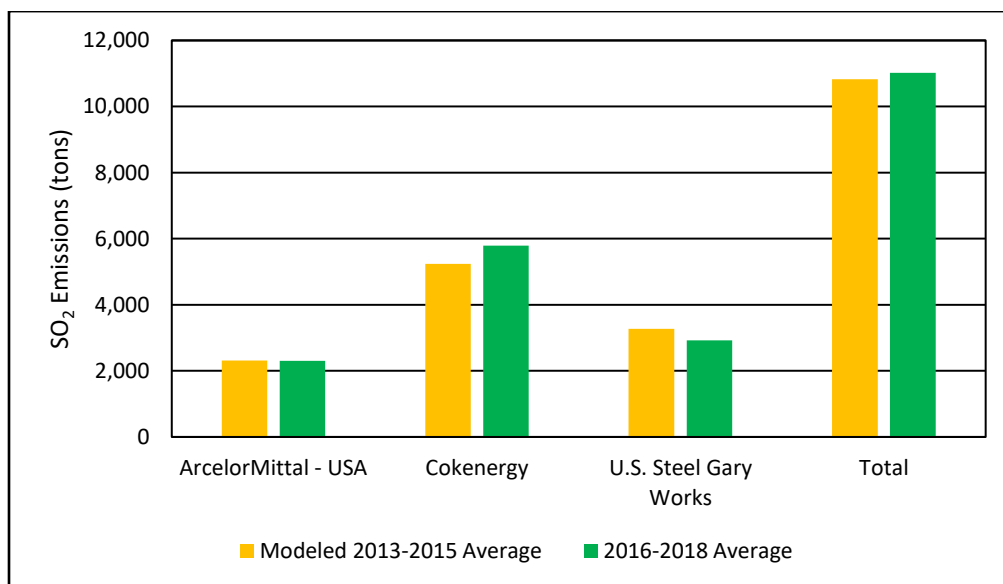
Lake County (ArcelorMittal – USA, Cokenergy, U.S. Steel Gary Works)

For Lake County, on January 13, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values greater than 90% of the 1-hour SO₂ NAAQS. As such, the SO₂ emissions assessment requirement in 40 CFR §51.1205(b) is applicable and any emissions increase may necessitate additional modeling analyses to characterize air quality in the area. The emissions analysis for Lake County focused on the most recent three years of data and is documented in Tables 12 and 13, Chart 7, and is discussed below.

Table 12: SO₂ Emissions (tons) for Round 3 Sources in Lake County

| Source Name | 2013 | 2014 | 2015 | Modeled 2013-2015 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Percent Change |
|-----------------------|--------|--------|--------|---------------------------|--------|--------|--------|-------------------|----------------|
| Cokenergy | 4,653 | 4,952 | 6,104 | 5,236 | 6,298 | 5,681 | 5,398 | 5,792 | +11% |
| ArcelorMittal USA | 2,369 | 2,163 | 2,398 | 2,310 | 2,392 | 2,274 | 2,249 | 2,305 | -0.2% |
| U.S. Steel Gary Works | 3,564 | 3,285 | 2,980 | 3,276 | 2,590 | 3,030 | 3,150 | 2,923 | -11% |
| Total | 10,586 | 10,400 | 11,482 | 10,822 | 11,280 | 10,985 | 10,797 | 11,020 | +2% |

Chart 7: SO₂ Emissions for DRR-Identified Sources in Lake County



As outlined in Table 12 and Chart 7, averaged SO₂ emissions for 2016-2018 have increased approximately 11% from Cokenergy, remained relatively the same for ArcelorMittal USA, and decreased 11% for U.S. Steel Gary Works from the 2013-2015 SO₂ emissions used in the modeling for designations. Averaged total emissions from the three DRR-identified sources for 2016-2018 increased 198 tons, approximately 2%, above what was modeled.

To determine if additional modeling is warranted, Indiana examined, as shown in Table 13, the SO₂ emissions from all sources included in the modeling for designations.

Table 13: SO₂ Emissions (tons) for the Lake County Area

| Source Name | 2013 | 2014 | 2015 | Modeled 2013-2015 Average | 2016 | 2017 | 2018 | Average 2016-2018 | Change | Percent Change |
|------------------------------------|---------------|---------------|------------------|---------------------------------|---------------|-----------------|---------------|----------------------|---------------|-------------------|
| Cokenergy | 4,653 | 4,952 | 6,104 | 5,236 | 6,298 | 5,681 | 5,398 | 5,792 | 556 | +11% |
| ArcelorMittal USA | 2,369 | 2,163 | 2,398 | 2,310 | 2,392 | 2,274 | 2,249 | 2,305.0 | -5.0 | -0.02% |
| U.S. Steel Gary Works | 3,564 | 3,285 | 2,980 | 3,276 | 2,590 | 3,030 | 3,150 | 2,923 | -353 | -11% |
| Safety Kleen | 56 | 68 | 63 | 62 | 71 | 86 | 126 | 94 | 32 | +52% |
| Inland Lafarge | 129 | 113 | 127 | 123 | 185 | 168 | 166 | 173 | 50 | +41% |
| Eco Services | 347 | 215 | 205 | 256 | 225 | 279 | 317 | 274 | 18 | +7% |
| ArcelorMittal Indiana Harbor | 1,638 | 1,587 | 1,067 | 1,431 | 1,387 | 1,619 | 1,512 | 1,506 | 75 | +5% |
| ArcelorMittal Burns Harbor | 13,864 | 12,189 | 12,202 | 12,752 | 12,831 | 12,959 | 11,452 | 12,414 | -338 | -3% |
| BP Products Whiting | ---- | ---- | 400 ^a | 400 | 388 | 323 | 291 | 334 | -66 | -17% |
| Ironside Energy | 231 | 274 | 108 | 204 | 30 | 109 | 110 | 83 | -121 | -59% |
| NIPSCO Bailly | 2,474 | 1,117 | 515 | 1,369 | 808 | 545 | 53 | 469 | -900 | -66% |
| Carmeuse Lime | ---- | ---- | ---- | 263 ^b | ---- | 91 ^c | 89 | 90 | -173 | -66% |
| Kopper, Inc. | 1,096 | 870 | 669 | 878 | 380 | 202 | 222 | 268 | -610 | -69% |
| Indiana Harbor Coke | 4,668 | 1,838 | 817 | 2,441 | 439 | 737 | 576 | 584 | -1,857 | -76% |
| Total | 35,089 | 28,671 | 27,655 | 31,001 | 28,024 | 28,103 | 25,711 | 27,309 | -3,692 | -12% |

^a Based on 2015 due to Whiting Refinery Modernization Project.

^b Based on maximum allowable emissions taken from Commissioner's Order #2016—04.

^c Based on 2017 emissions due to Commissioner's Order #2016-04 effective date of January 1, 2017.

SO₂ emissions have decreased substantially throughout the area from what was modeled during the designations process. The increases, totaling 731 TPY, are more than offset by emissions decreases, totaling 4,423 TPY from the remaining sources. The largest increase in SO₂ emissions, 556 TPY, occurred at Cokenergy which is co-located with Indiana Harbor Coke which had a much larger decrease, 1,857 TPY, of SO₂ emissions. Due to the close proximity of these two sources, and similar source characteristics, the net impact of these emissions changes is an expected reduction of SO₂ concentrations.

Analysis of Modeling

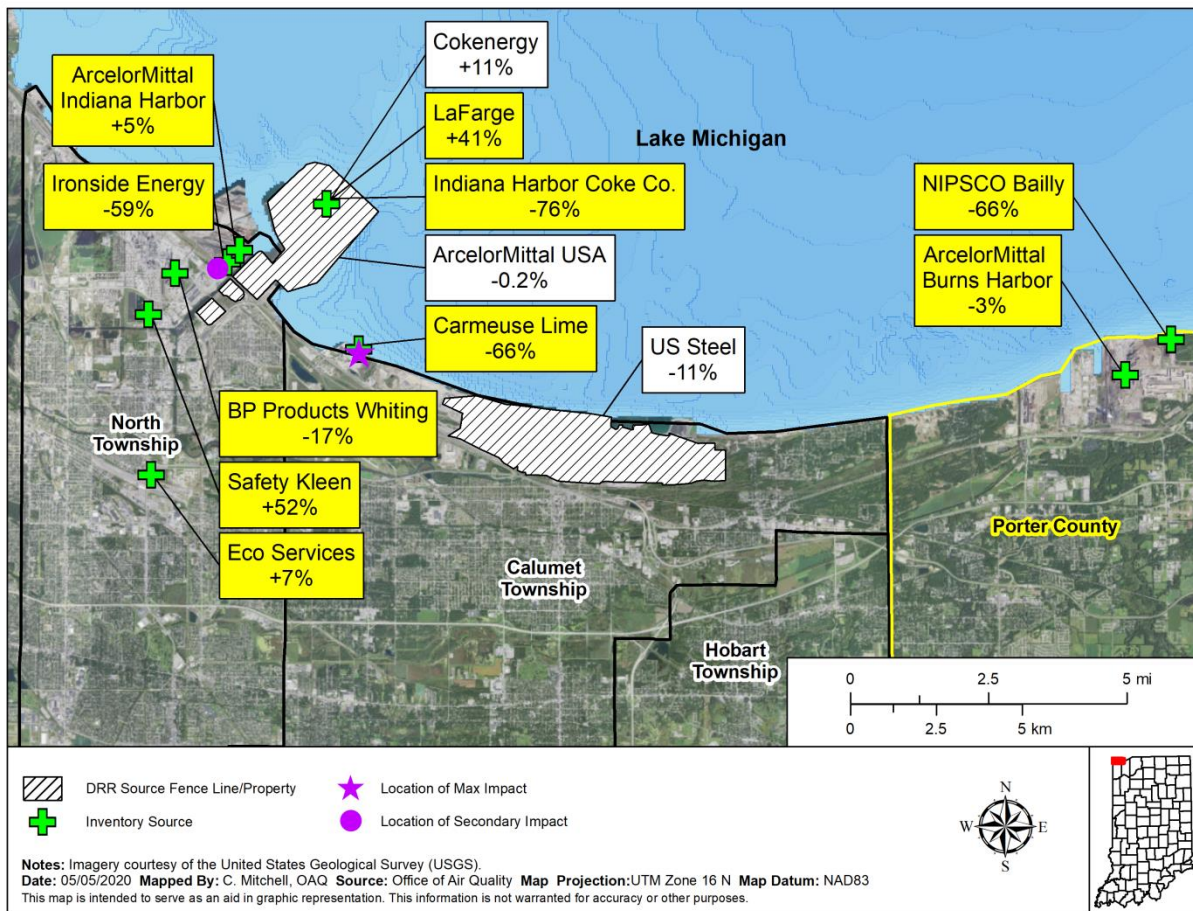
In addition, IDEM reviewed the modeling of Lake County used for designation purposes to determine the potential impact of the emissions changes.

Analysis of Maximum Impact

As shown in Figures 1 and 2, the location of maximum impact used for the 1-hour SO₂ attainment designation for Lake County is located near the Carmeuse facility. The maximum modeled concentration was 192.2 micrograms per cubic meter (µg/m³).

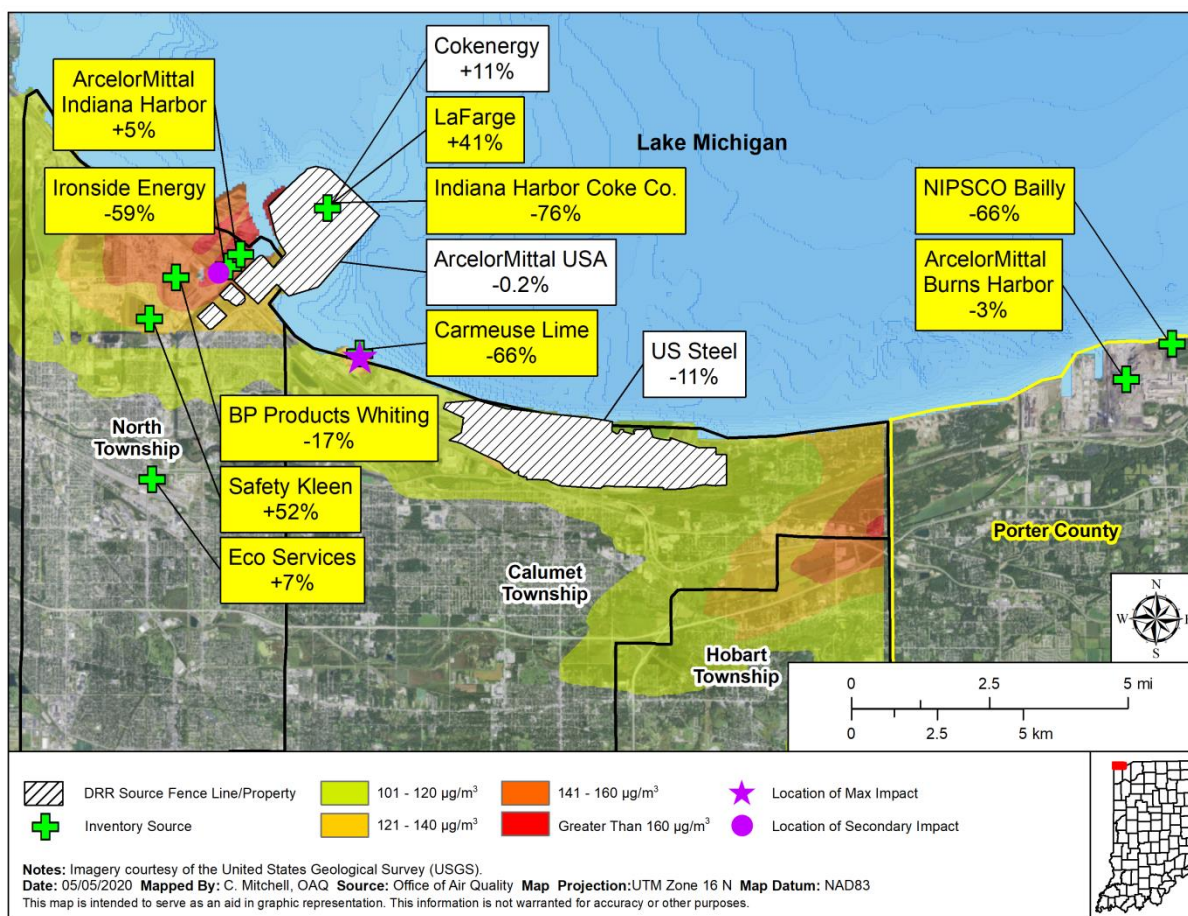
The Carmeuse Lime facility, although not an identified source under Round 3 designations, accepted permanent and enforceable SO₂ emissions limits to address SO₂ concentrations in the area and to demonstrate attainment of the 1-hr SO₂ NAAQS. It is unlikely that new modeling will show a higher impact given the significant emissions reductions in the region and at the Carmeuse facility which has reported actual SO₂ emissions well below the limits used to demonstrate attainment of the NAAQS.

Figure 1: Lake County Area SO₂ Sources and Percent Change in Emissions



In addition, assuming a simple, linear relationship in modeled impacts and the percent change in emissions from each source in the area, the overall 12% decrease in emissions from all modeled sources in the Lake County area would show a decrease in projected SO₂ concentrations. Figure 2 shows the relationship of the modeled sources in Lake and Porter County to the 1-hour SO₂ modeled hot spots and how emission changes could influence the air quality impacts.

Figure 2: Lake County Area Sources and 1-Hour SO₂ Modeled Impact Areas.



Based on the complexity of characterizing air quality in Lake County, it is appropriate to assess emissions and cumulative projected modeled impacts from all modeled sources in the area.

Table 14 shows the modeled impacts on the maximum impact receptor, which was used for designation purposes. The results of this analysis show that if the maximum modeled impacts from each of the Lake County sources, using the 2013-2015 emissions, were added together and compared to the projected modeled impacts incorporating 2016-2018 emissions changes, the resulting total modeled impacts would be less than modeled previously. While this approach is conservative in nature, as the maximum modeled impacts for each individual source do not occur on the same hour and day, it does show the reduction in overall projected maximum modeled impacts as

a result of the emission change from each source and indicates that the 1-hour SO₂ NAAQS will not be exceeded.

Table 14: Projected Modeled Impacts at Maximum Modeled Location

| Source | Maximum Modeled Impact from 2013-2015 Emissions | % Emissions Change 2013-2015 to 2016-2018 | Projected Modeled Impact from 2016-2018 Emissions |
|---------------------------|---|---|---|
| Carmeuse Lime | 156.3 | -66% | 53.1 |
| ArcelorMittal USA | 53.1 | -0.2% | 53.0 |
| Cokenergy | 41.1 | +11% | 45.6 |
| U.S. Steel Gary Works | 26.8 | -11% | 23.9 |
| All other modeled sources | 27.8 | -19% | 22.5 |
| Background ¹ | 17.8 | | 17.8 |
| Total | 322.9 | | 215.9 |

¹ Background concentrations averaged from seasonal hourly Hammond data on day/hour of top 12 highest modeled values.

Analysis of Secondary Impact

As shown in Figures 1 and 2, a secondary maximum modeled impact area was located northwest of the highest modeled impact area. This secondary impact had a modeled concentration of 182.8 µg/m³.

Table 15 shows the modeled impacts on the secondary maximum location for the area, as well as the projected modeled impacts when emission changes were taken into account. The results of this analysis show that if the maximum modeled impacts from each of the modeled Lake County area sources using the 2013-2015 emissions were added together and compared to the projected modeled impacts, that take into account all emissions changes from 2013-2015 to 2016-2018, the resulting modeled concentrations are considerably less and will not violate the 1-hour SO₂ NAAQS. This approach is conservative in nature, as the maximum modeled impacts for each individual source do not occur on the same hour and day.

Table 15: Projected Modeled Impacts at Secondary Maximum Modeled Location

| Sources | Maximum Modeled Impact from 2013-2015 Emissions | % Emissions Change 2013-2015 to 2016-2018 | Projected Modeled Impact from 2016-2018 Emissions |
|---------------------------|---|---|---|
| Carmeuse Lime | 11.9 | -66% | 4.0 |
| ArcelorMittal USA | 78.3 | -0.2% | 78.1 |
| Cokenergy | 54.6 | 11% | 60.6 |
| U.S. Steel Gary Works | 17.5 | -11% | 15.6 |
| All other modeled sources | 106.1 | -19% | 85.9 |
| Background ¹ | 17.8 | | 17.8 |
| Total | 286.2 | | 262.0 |

¹ Background concentrations averaged from seasonal hourly Hammond data on day/hour of top 12 highest modeled values.

Also, it is worth noting that certified ambient air quality monitoring data from Lake County continues to improve and demonstrates attainment of the 2010 primary 1-hour SO₂ standard. Design values at both SO₂ sites within the county for the 2016-2018 period have decreased from 2013-2015. The Gary-IITRI monitoring site has decreased from 44 ppb to 30 ppb and the Hammond-141st St. monitor has decreased from 23 ppb to 20 ppb.

Based on this assessment, Indiana recommends that additional modeling is not needed to further characterize air quality in Lake County. The area is currently designated as “unclassifiable/attainment” and no changes to their classification are necessary at this time.

IDEM is providing a 30-day public comment period concerning this submittal of the *2020 Ongoing Data Requirements for the 2010 Primary 1-Hour Sulfur Dioxide National Ambient Air Quality Standard*. Please refer to the Supporting Document for further information and dates regarding the public participation process.

This report consists of one (1) hardcopy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy will be sent to Doug Aburano, Chief of U.S. EPA Region 5’s Attainment Planning and Maintenance Section and Chris Panos of U.S. Region 5. If you have any questions or need additional information, please contact Brian Callahan, Chief, Air Quality Standards and Implementation Section, Office of Air Quality at (317) 232-8244 or bcallaha@idem.IN.gov.

Sincerely,



Matt Stuckey
Deputy Assistant Commissioner
Office of Air Quality

MS/sd/bc/gf/lf

Supporting Document:

1. Public Participation Process Documentation

cc: Chris Panos, EPA – Region 5 (no enclosure)
Doug Aburano, EPA – Region 5 (no enclosure)
John Summerhays, EPA – Region 5 (no enclosure)
Jennifer Liljegren, EPA – Region 5 (no enclosure)
Keith Baugues, IDEM (no enclosure)
Matt Stuckey, IDEM (no enclosure)
Scott Deloney, IDEM (no enclosure)
Brian Callahan, IDEM (no enclosure)
Gale Ferris, IDEM (no enclosure)
Leslie Ferguson, IDEM (w/ enclosure)
File Copy

This page left intentionally blank.

Supporting Document

Public Participation Process Documentation

This page left intentionally blank.

LEGAL NOTICE FOR PUBLIC COMMENT

2020 Assessment for Ongoing Data Requirements for the 2010 Primary 1-Hour Sulfur Dioxide National Ambient Air Quality Standard

Note: Legal notices for public comment are no longer published in newspapers, but can be found on the Indiana Department of Environmental Management's web site at:
<https://www.in.gov/idem/6777.htm>

Notice is hereby given under 40 Code of Federal Regulations (CFR) 51.102 that the Indiana Department of Environmental Management (IDEM) is accepting written comment regarding the draft *2020 Assessment for Ongoing Data Requirements for the 2010 Primary 1-Hour Sulfur Dioxide National Ambient Air Quality Standard*.

The purpose of this submittal is to assess areas subject to ongoing data requirements under the 2010 primary 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS). This evaluation per 40 CFR Subpart BB §51.1205, addresses areas designated during Rounds 2 and 3. Based on this evaluation, IDEM recommends that no additional assessments to characterize air quality are needed at this time.

Copies of the draft *2020 Assessment for Ongoing Data Requirements for the 2010 Primary 1-Hour Sulfur Dioxide National Ambient Air Quality Standard* will be available on or before May 20, 2020 to any person upon request at the following locations:

- Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate Avenue, Room N1003, Indianapolis, Indiana 46204
- Indianapolis-Marion County Public Library-West Indianapolis Branch, 1216 Kappes Street, Indianapolis, Indiana, IN 46221.

The draft submittal will also be available on the following web page:

<https://www.in.gov/idem/airquality/2432.htm>

Any person may submit written comments on the draft *2020 Assessment for Ongoing Data Requirements for the 2010 Primary 1-Hour Sulfur Dioxide National Ambient Air Quality Standard*. Written comments must be submitted by June 19, 2020 and should be directed to: Ms. Leslie Ferguson, Indiana Department of Environmental Management, Office of Air Quality, Room 1003, 100 North Senate Avenue, Indianapolis, IN 46204. Comments can also be submitted via fax (317) 233-5967 or email at lferguso@idem.in.gov.

For additional information contact Ms. Leslie Ferguson, at the Indiana Department of Environmental Management, Office of Air Quality, Room N1003, Indiana Government Center North, 100 North Senate Avenue, Indianapolis, IN 46204 or call (317) 233-1179 or (800) 451-6027 ext. 3-1179 (in Indiana).



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

May 13, 2020

CERTIFICATE OF PUBLICATION

This is to certify that the Indiana Department of Environmental Management (IDEM) Notice of 30-Day Period for Public Comment regarding the following:

- Legal Notice for Public Comment: 2020 Assessment for Ongoing Data Requirements for the 2010 Primary 1-Hour Sulfur Dioxide National Ambient Air Quality Standard

was published on IDEM's web site on May 13, 2020. It will remain posted on the site for at least 30 days. The notice in full was available online at the following web address, under Statewide:

<http://www.in.gov/idem/5474.htm>.

Web publication of the notice was at the request of Scott DeLoney, Chief, Programs Branch, Office of Air Quality, IDEM.

By:

Mike Finklestein
IDEM Webmaster