



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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Eric J. Holcomb  
*Governor*

Bruno L. Pigott  
*Commissioner*

June 16, 2021

Ms. Cheryl L. Newton  
Acting Regional Administrator  
U.S. EPA Region 5  
77 West Jackson Boulevard  
Mail Code: R-19J  
Chicago, IL 60604-3507

Re: 2021 Assessment for Ongoing Data  
Requirements for the 2010 Primary 1-Hour  
Sulfur Dioxide National Ambient Air Quality  
Standard

Dear Ms. Newton:

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 (SO<sub>2</sub>) 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 SO<sub>2</sub> standard began in 2013 when United States Environmental Protection Agency (U.S. EPA) established nonattainment areas near monitors with data above the SO<sub>2</sub> NAAQS. 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 on December 21, 2020. This evaluation, per 40 Code of Federal Regulations (CFR) Subpart BB §51.1205(a) and (b), addresses areas designated during Round 2, Round 3, and Round 4.

For these designated areas, ongoing data requirements are applicable if SO<sub>2</sub> 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 SO<sub>2</sub> monitoring network and the reporting of such data. For areas that used modeling, ongoing requirements are the assessment of annual SO<sub>2</sub> emissions and a recommendation regarding whether additional modeling is needed to characterize air quality to determine whether the area continues to meet the SO<sub>2</sub> 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 SO<sub>2</sub> emission limits as the basis for establishing designations demonstrating that the area will not violate the 2010 SO<sub>2</sub> 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/m<sup>3</sup>) and emissions increase by 15% or more.
- The original modeling was equal to or greater than 90% of the standard (176.58 µg/m<sup>3</sup>) 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 Indiana’s five identified sources as “unclassifiable/attainment”. The final rule was published in the Federal Register (FR) on July 12, 2016 (81 FR 45039). 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 <sup>3</sup>	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.

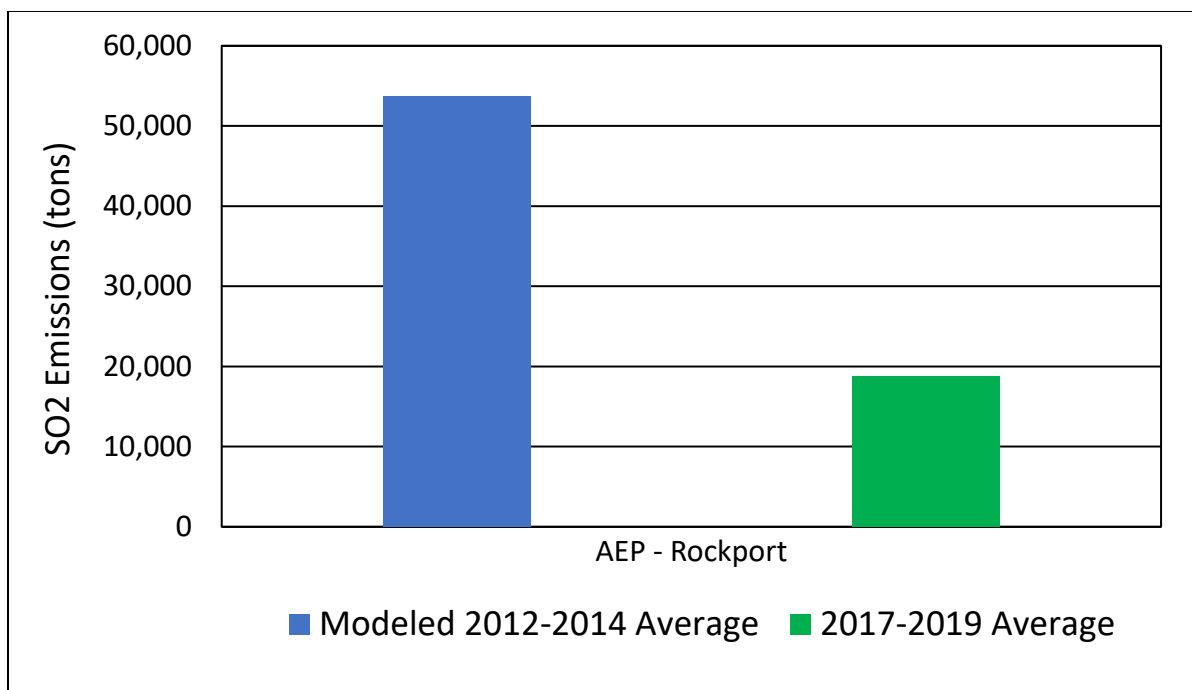
#### **Spencer County (AEP - Rockport Station)**

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 SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> 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: SO<sub>2</sub> Emissions (tons) for the Spencer County Area**

Source Name	2012	2013	2014	Modeled 2012-2014 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
AEP – Rockport	54,390	51,636	54,979	53,668	20,784	21,241	14,342	18,789	-34,879	-65%

**Chart 1: SO<sub>2</sub> Emissions for Spencer County Area**



As outlined in Table 3 and Chart 1, averaged SO<sub>2</sub> emissions for 2017-2019 have decreased approximately 65% from the averaged SO<sub>2</sub> emissions for 2012-2014 used in the modeling for designations. Based on this SO<sub>2</sub> emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Spencer County. SO<sub>2</sub> emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO<sub>2</sub> NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

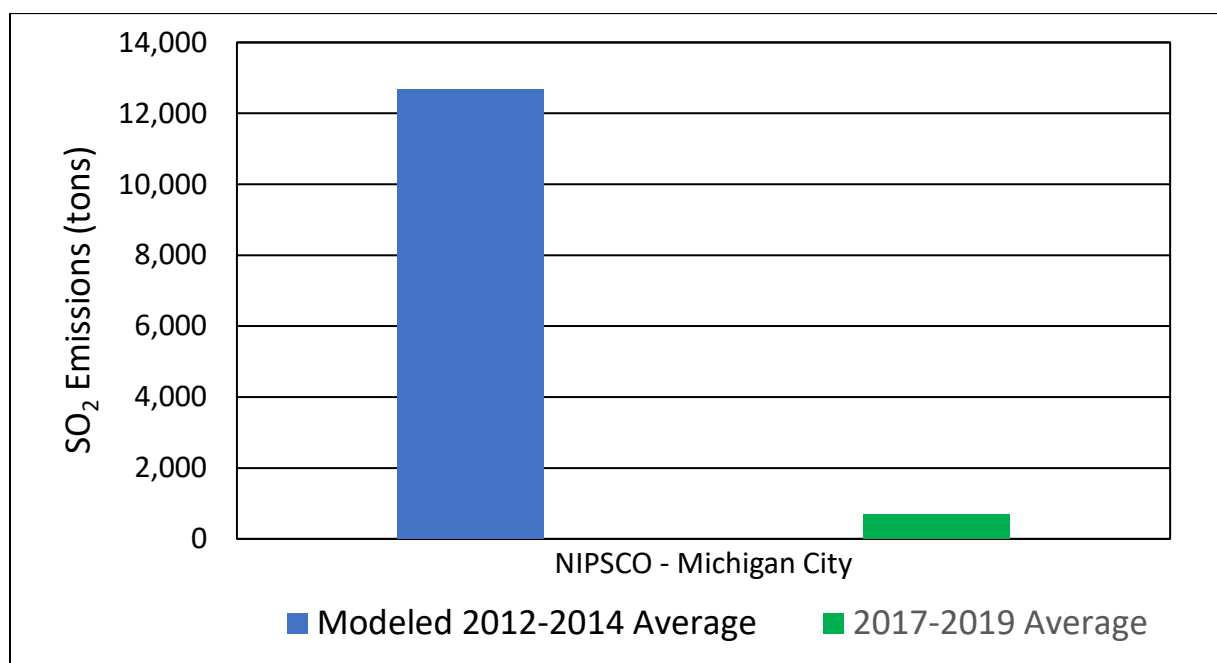
#### **La Porte County (NIPSCO – Michigan City Station)**

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 SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> 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: SO<sub>2</sub> Emissions (tons) for the La Porte County Area**

Source Name	2012	2013	2014	Modeled 2012-2014 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
NIPSCO – Michigan City	11,584	10,429	15,991	12,668	601	997	485	694	-11,974	-95%

**Chart 2: SO<sub>2</sub> Emissions for the La Porte County Area**



As outlined in Table 4 and Chart 2, averaged SO<sub>2</sub> emissions for 2017-2019 have decreased approximately 95% from the averaged SO<sub>2</sub> emissions for 2012-2014 used in the modeling for designations. Based on this SO<sub>2</sub> emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in La Porte County. SO<sub>2</sub> emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO<sub>2</sub> 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 SO<sub>2</sub> monitors as well as the continued reporting of such data. Duke Energy continues to operate the SO<sub>2</sub> 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 SO<sub>2</sub> standard as shown in Table 5.

**Table 5: Duke Energy's Gibson Generating Station SO<sub>2</sub> Monitoring Data**

Site ID	County	99th Percentile Values, ppb						3-Year Design Value, ppb			
		2015	2016	2017	2018	2019	2020	2015-2017	2016-2018	2017-2019	2018-2020
180510002	Gibson	59	71	48	49	41	59	59	56	46	50

### **Round 3 Areas**

During Round 3 designations, eleven sources in Indiana, shown in Table 6, were identified around which SO<sub>2</sub> 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	Cleveland-Cliffs Steel (316) <sup>1</sup>
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

<sup>1</sup> Formerly known as ArcelorMittal USA.

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. 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 <sup>3</sup>	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	Cleveland-Cliffs Steel (316) <sup>2</sup> Cokenergy U.S. Steel Gary Works	192.2 <sup>1</sup>	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

<sup>1</sup> Modeled impact associated with the Carmeuse Lime facility, which accepted permanent and enforceable SO<sub>2</sub> permit limits to demonstrate attainment of the 1-hr NAAQS.

<sup>2</sup> Formerly known as ArcelorMittal USA.

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)**

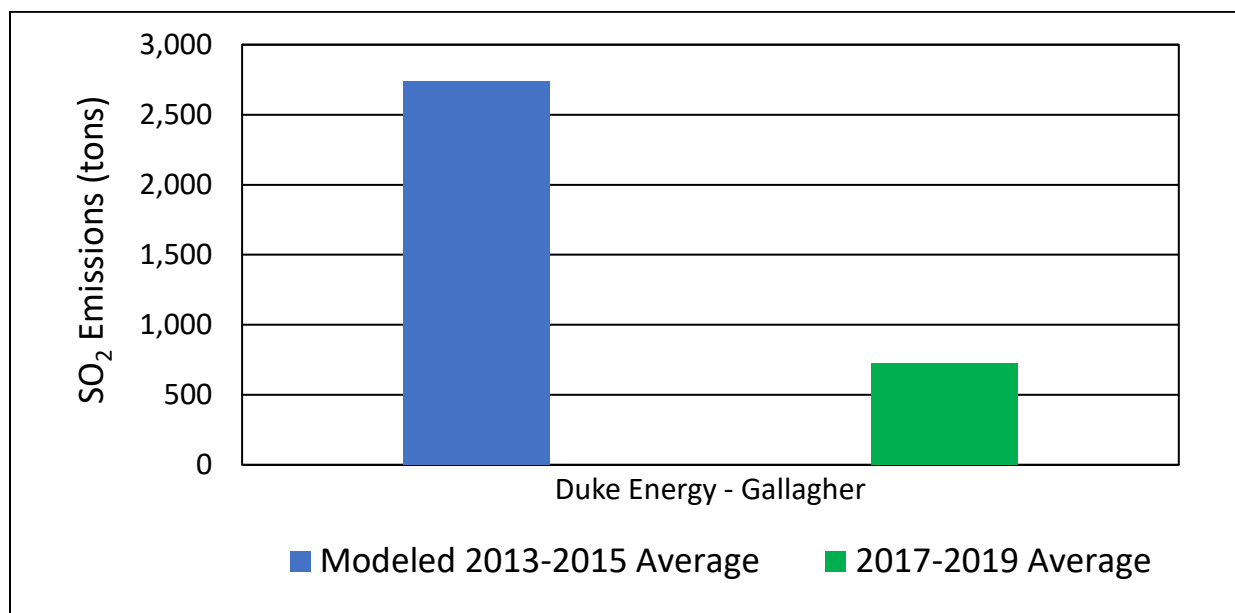
For Floyd County, on January 13, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values were greater than 50%, but less than 90%, of the 1-hour SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> emissions assessment requirement in 40 CFR §51.1205(b) is applicable 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: SO<sub>2</sub> Emissions (tons) for the Floyd County Area**

Source Name	2013	2014	2015	Modeled 2013-2015 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
Duke Energy – Gallagher	2,498	3,528	2,178	2,735	858	1,149	170	726	-2,009	-73%

**Chart 3: SO<sub>2</sub> Emissions for the Floyd County Area**



As outlined in Table 8 and Chart 3, averaged SO<sub>2</sub> emissions for 2017-2019 have decreased by approximately 73% from the averaged SO<sub>2</sub> emissions for 2013-2015 used in the modeling for designations. Based on this SO<sub>2</sub> emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Floyd County. SO<sub>2</sub> emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO<sub>2</sub> NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.



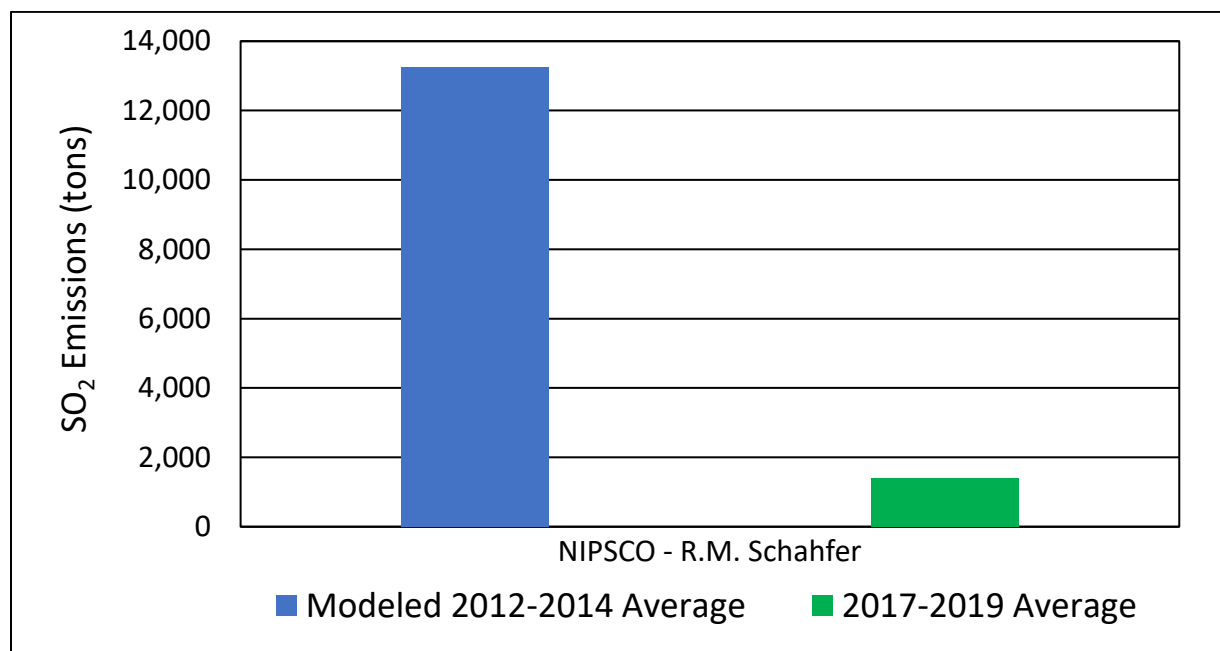
### Jasper County (NIPSCO – R.M. Schahfer Station)

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 SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> 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: SO<sub>2</sub> Emissions (tons) for Jasper County Area**

Source Name	2012	2013	2014	Modeled 2012-2014 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
NIPSCO – R.M. Schahfer	14,911	16,418	8,413	13,247	1,570	1,467	1,168	1,402	-11,845	-89%

**Chart 4: SO<sub>2</sub> Emissions for the Jasper County Area**



As outlined in Table 9 and Chart 4, averaged SO<sub>2</sub> emissions for 2017-2019 have decreased by approximately 89% from the averaged SO<sub>2</sub> emissions for 2012-2014 used in the modeling for designations. Based on this SO<sub>2</sub> emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Jasper County. SO<sub>2</sub> emissions have trended downward from what was modeled to

demonstrate attainment of the 2010 primary 1-hour SO<sub>2</sub> NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

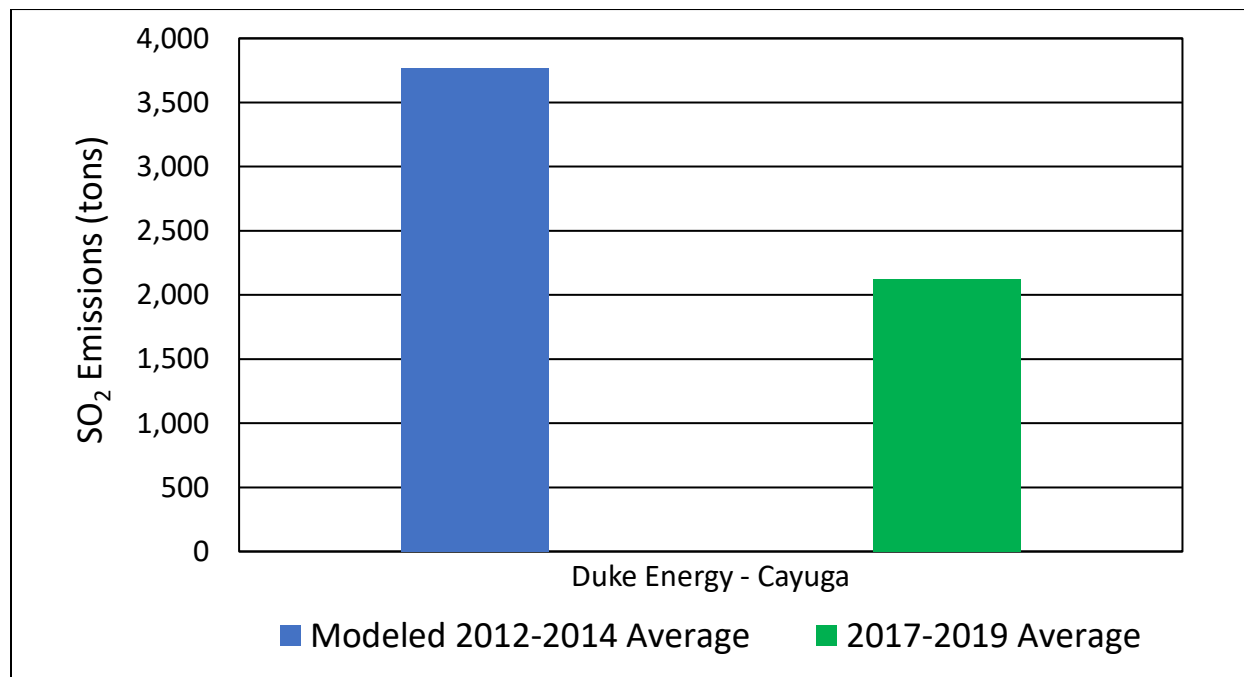
### Vermillion County (Duke Energy – Cayuga Station)

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 SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> 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: SO<sub>2</sub> Emissions (tons) for the Vermillion County Area**

Source Name	2012	2013	2014	Modeled 2012-2014 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
Duke Energy – Cayuga	3,223	4,628	3,448	3,766	1,915	2,657	1,802	2,125	-1,641	-44%

**Chart 5: SO<sub>2</sub> Emissions for the Vermillion County Area**



As outlined in Table 10 and Chart 5, averaged SO<sub>2</sub> emissions for 2017-2019 have decreased approximately 44% from the averaged SO<sub>2</sub> emissions for 2012-2014 used in the modeling for designations. Based on this SO<sub>2</sub> emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Vermillion County. SO<sub>2</sub> emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO<sub>2</sub> NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification are necessary at this time.

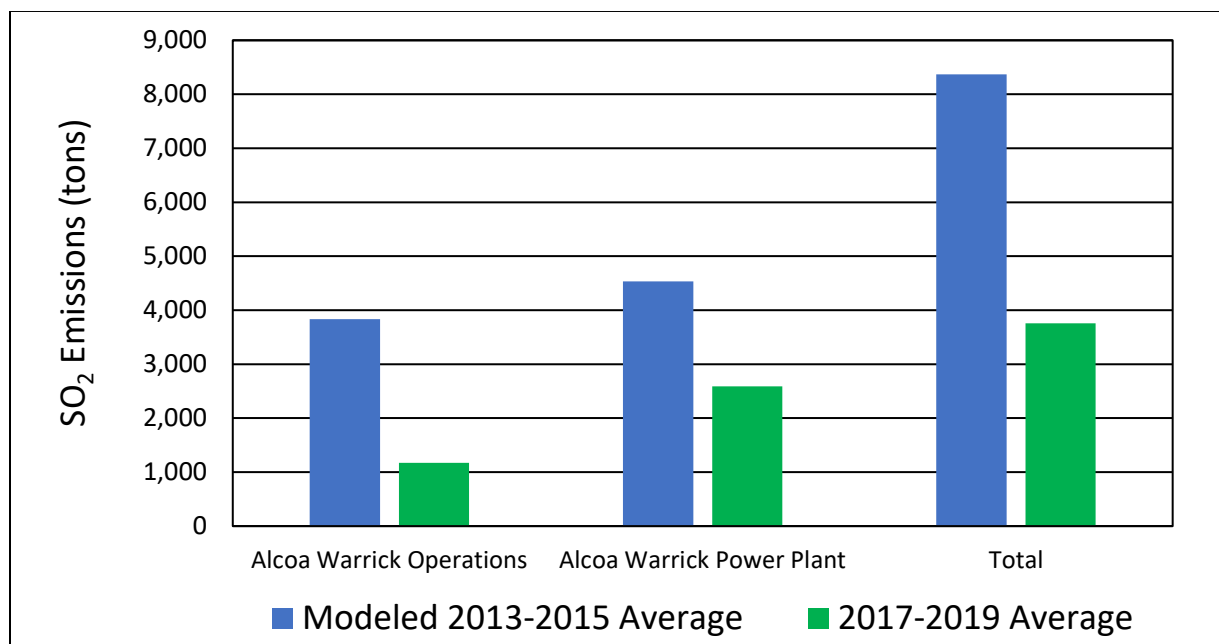
#### **Warrick County (ALCOA Warrick Operations, ALCOA Warrick Power Plant)**

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 SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> 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: SO<sub>2</sub> Emissions (tons) for Round 3 Sources in Warrick County**

<b>Source Name</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Modeled 2013-2015 Average</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>Average 2017- 2019</b>	<b>Change</b>	<b>Percent Change</b>
ALCOA Warrick Operations	3,852	3,500	4,147	3,833	24	1,397	2,088	1,170	-2,663	-69%
ALCOA Warrick Power Plant	5,707	4,993	2,907	4,536	2,632	2,927	2,203	2,587	-1,949	-43%
<b>Total</b>	<b>9,559</b>	<b>8,493</b>	<b>7,054</b>	<b>8,369</b>	<b>2,656</b>	<b>4,324</b>	<b>4,291</b>	<b>3,757</b>	<b>-4,612</b>	<b>-55%</b>

**Chart 6: SO<sub>2</sub> Emissions for the Warrick County Area**



As outlined in Table 11 and Chart 6, averaged SO<sub>2</sub> emissions for 2017-2019 have decreased approximately 69% and 43% for ALCOA Warrick Operations and ALCOA Warrick Power Plant, respectively, from the averaged SO<sub>2</sub> emissions for 2013-2015 used in the modeling for designations. Based on this SO<sub>2</sub> emissions assessment, Indiana recommends no additional modeling is needed to further characterize air quality in Warrick County. SO<sub>2</sub> emissions have trended downward from what was modeled to demonstrate attainment of the 2010 primary 1-hour SO<sub>2</sub> NAAQS. The area is currently designated as “unclassifiable/attainment” and no changes to its classification is necessary at this time.

#### **Lake County (Cleveland-Cliffs Steel (316), Cokenergy, U.S. Steel Gary Works)**

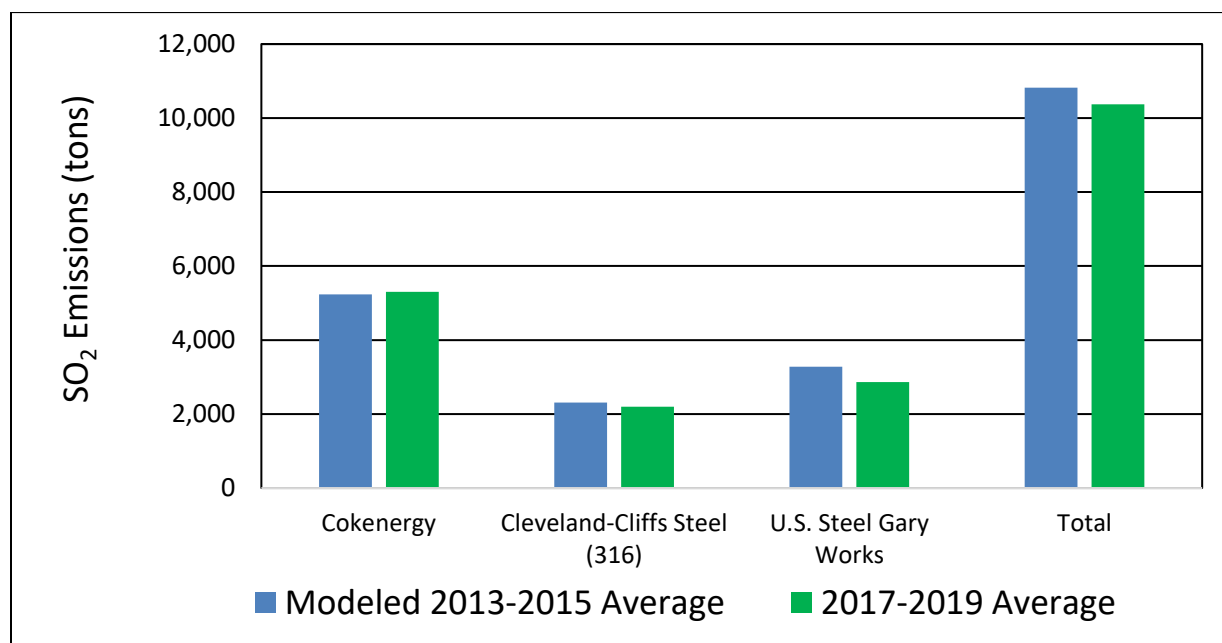
For Lake County, on January 13, 2017, Indiana submitted air quality modeling to U.S. EPA that demonstrated air quality values greater than 90% of the 1-hour SO<sub>2</sub> NAAQS. As such, the SO<sub>2</sub> emissions assessment requirement in 40 CFR §51.1205(b) is applicable and any emissions increase 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, Tables 12, 13, and Chart 7, and is discussed below.

**Table 12: SO<sub>2</sub> Emissions (tons) for Round 3 Sources in Lake County**

Source Name	2013	2014	2015	Modeled 2013-2015 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
Cokenergy	4,653	4,952	6,104	5,236	5,681	5,398	4,840	5,306	+70	+1%
Cleveland-Cliffs Steel (316) <sup>1</sup>	2,369	2,163	2,398	2,310	2,274	2,249	2,062	2,195	-115	-5%
U.S. Steel Gary Works	3,564	3,285	2,980	3,276	3,030	3,150	2,424	2,868	-408	-12%
<b>Total</b>	<b>10,586</b>	<b>10,400</b>	<b>11,482</b>	<b>10,822</b>	<b>10,985</b>	<b>10,797</b>	<b>9,326</b>	<b>10,369</b>	<b>-453</b>	<b>-4%</b>

<sup>1</sup> Formerly known as ArcelorMittal USA.

**Chart 7: SO<sub>2</sub> Emissions for DRR-Identified Sources in Lake County**



As outlined in Table 12 and Chart 7, averaged SO<sub>2</sub> emissions for 2017-2019 remained relatively the same for Cokenergy, only increasing by 1%, Cleveland-Cliffs Steel (316) decreased 5%, and U.S. Steel Gary Works decreased 12% from the 2013-2015 SO<sub>2</sub> emissions used in the modeling for designations. Averaged total emissions from the three DRR-identified sources for 2017-2019 decreased 453 tons, approximately 4% below what was modeled.

To determine if additional modeling is warranted, Indiana examined, as shown in Table 13, the SO<sub>2</sub> emissions from all sources included in the modeling for designations.

**Table 13: SO<sub>2</sub> Emissions (tons) for the Lake County Area**

Source Name	2013	2014	2015	Modeled 2013-2015 Average	2017	2018	2019	Average 2017-2019	Change	Percent Change
Cokenergy	4,653	4,952	6,104	5,236	5,681	5,398	4,840	5,306	+70	+1%
Cleveland-Cliffs Steel (316) <sup>6</sup>	2,369	2,163	2,398	2,310	2,274	2,249	2,062	2,195	-115	-5%
U.S. Steel Gary Works	3,564	3,285	2,980	3,276	3,030	3,150	2,424	2,868	-408	-12%
Safety Kleen	56	68	63	62	86	126	45	86	+24	+39%
Inland Lafarge	129	113	127	123	168	166	141	158	+35	+28%
Eco Services	347	215	205	256	279	317	277	291	+35	+14%
Cleveland-Cliffs Steel (318) <sup>5</sup>	1,638	1,587	1,067	1,431	1,619	1,512	1,531	1,554	+123	+9%
Cleveland-Cliffs Burns Harbor <sup>7</sup>	13,864	12,189	12,202	12,752	12,959	11,452	11,415	11,942	-810	-6%
BP Products Whiting	----	----	400 <sup>1</sup>	400	323	291	252	289	-111	-28%
Ironside Energy	231	274	108	204	109	110	64	94	-110	-54%
Carmeuse Lime	----	----	----	263 <sup>2</sup>	91 <sup>3</sup>	89	74	85	-178	-68%
Indiana Harbor Coke	4,668	1,838	817	2,441	737	576	520	611	-1,830	-75%
Kopper, Inc.	1,096	870	669	878	202	222	212 <sup>4</sup>	212	-666	-76%
NIPSCO Bailly	2,474	1,117	515	1,369	545	53	0	199	-1,170	-85%
<b>Total</b>	<b>35,089</b>	<b>28,671</b>	<b>27,655</b>	<b>31,001</b>	<b>28,103</b>	<b>25,711</b>	<b>23,857</b>	<b>25,890</b>	<b>-5,111</b>	<b>-16%</b>

<sup>1</sup> Based on 2015 due to Whiting Refinery Modernization Project.

<sup>2</sup> Based on maximum allowable emissions taken from Commissioner's Order #2016—04.

<sup>3</sup> Based on 2017 emissions due to Commissioner's Order #2016-04 effective date of January 1, 2017.

<sup>4</sup> 2019 emissions for this facility are unavailable, this value represents an average of 2017 and 2018 reported data.

<sup>5</sup> Formerly known as ArcelorMittal Indiana Harbor.

<sup>6</sup> Formerly known as ArcelorMittal USA.

<sup>7</sup> Formerly known as ArcelorMittal Burns Harbor.

SO<sub>2</sub> emissions have decreased 16% throughout the Lake County area from what was modeled during the designation process. The increases, totaling 287 TPY, are more than offset by emissions decreases, totaling 5,398 TPY from remaining sources.

### **Analysis of Modeling**

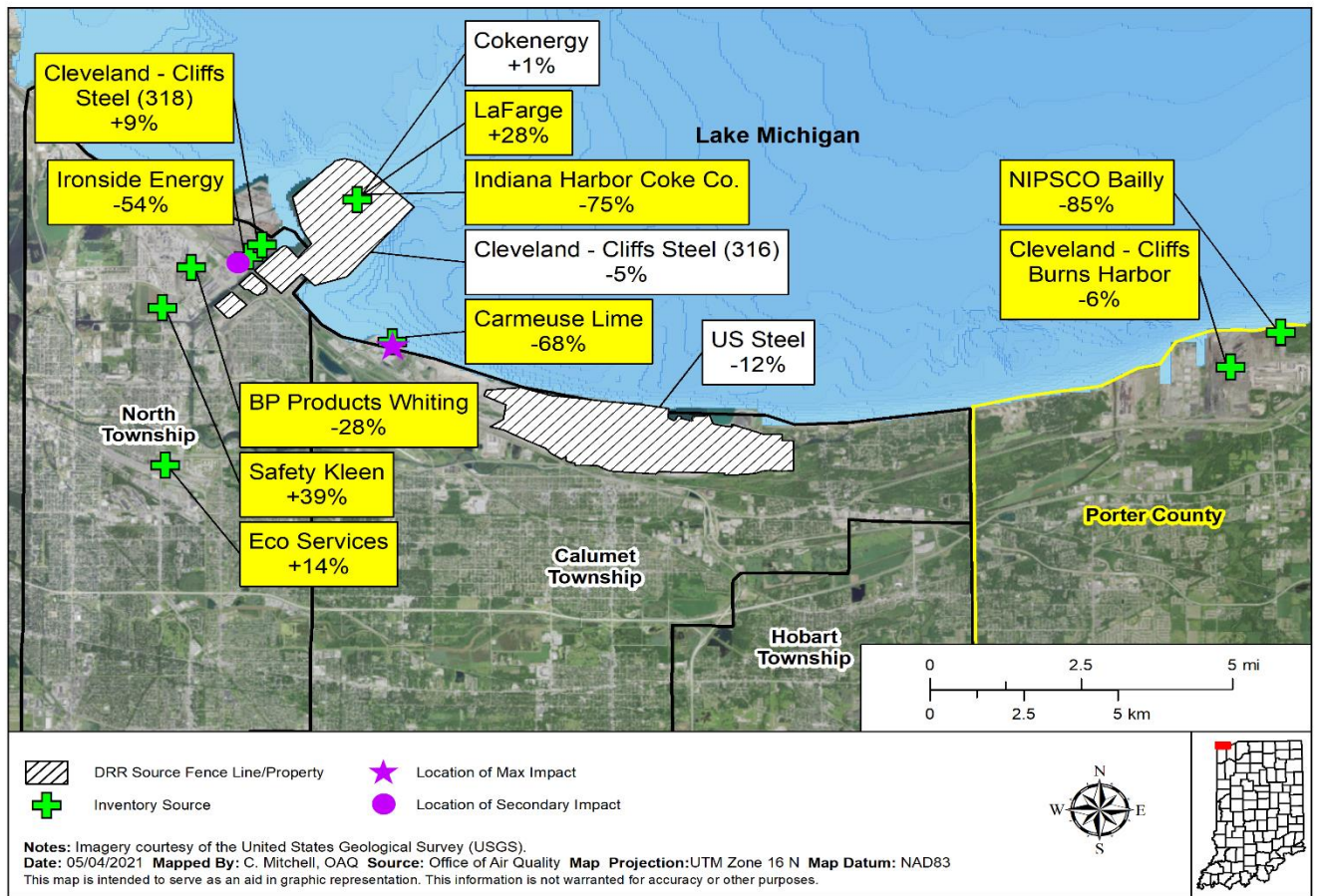
In addition, IDEM reviewed the modeling of Lake County used for designation purposes to determine the potential impact of the emissions changes.

### **Analysis of Maximum Impact**

As shown in Figures 1 and 2, the location of maximum impact used for the 1-hour SO<sub>2</sub> attainment designation for Lake County is located near the Carmeuse facility. The maximum modeled concentration was 192.2 micrograms per cubic meter (µg/m<sup>3</sup>).

The Carmeuse Lime facility, although not an identified source under Round 3 designations, accepted permanent and enforceable SO<sub>2</sub> emissions limits to address SO<sub>2</sub> concentrations in the area and to demonstrate attainment of the 1-hr SO<sub>2</sub> 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 SO<sub>2</sub> emissions well below the limits used to demonstrate attainment of the NAAQS.

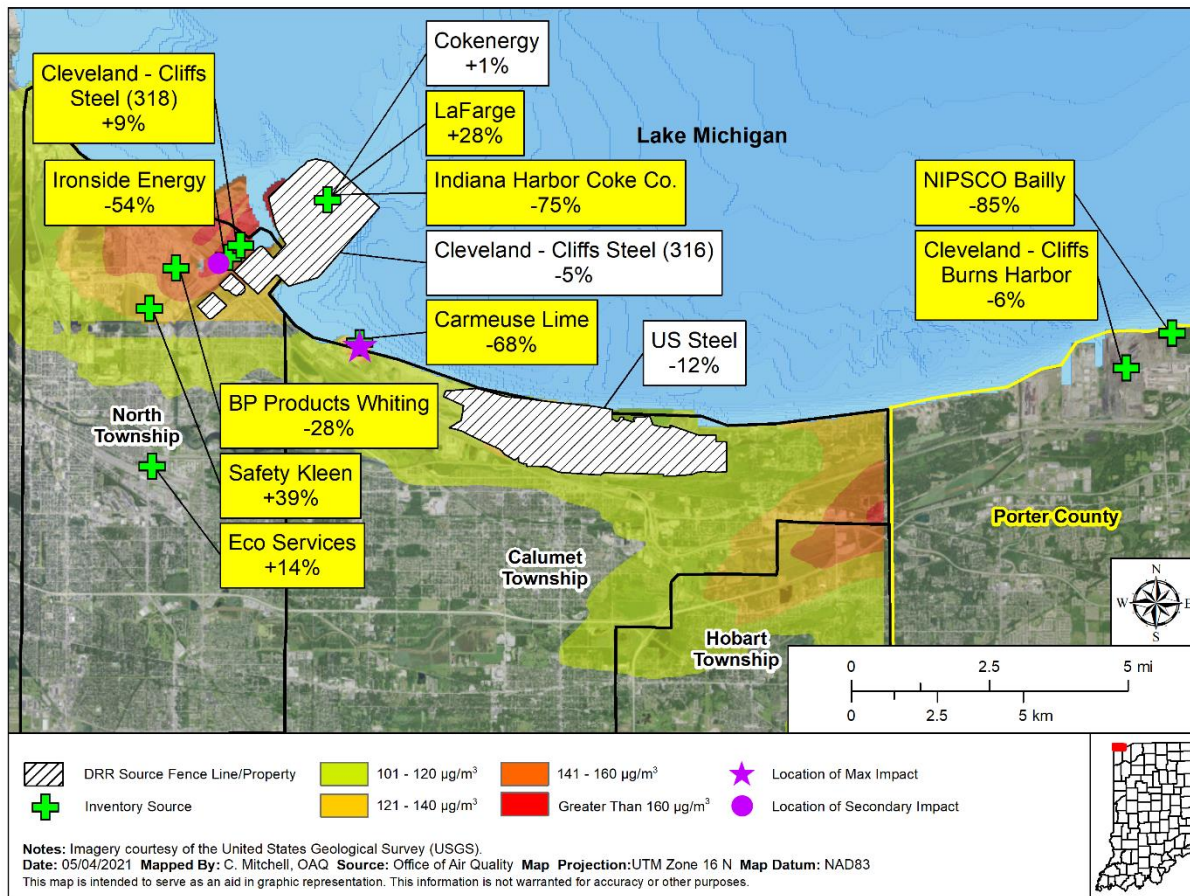
**Figure 1: Lake County Area SO<sub>2</sub> Sources and Percent Change in Emissions**



In addition, assuming a simple, linear relationship in modeled impacts, and the percent change in emissions from each source in the area, the overall 16% decrease in emissions from all modeled sources in the Lake County area would show a decrease in projected SO<sub>2</sub> concentrations. Figure 2 shows the relationship of the modeled sources in Lake and Porter County to the 1-hour SO<sub>2</sub> modeled hot spots and how emission changes could influence the air quality impacts.



**Figure 2: Lake County Area Sources and 1-Hour SO<sub>2</sub> 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 2017-2019 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 SO<sub>2</sub> 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 2017-2019	Projected Modeled Impact From 2017-2019 Emissions
Carmeuse Lime	156.3	-68%	50.0
Cleveland-Cliffs Steel (316) <sup>2</sup>	53.1	-5%	50.4
Cokenergy	41.1	+1%	41.5
U.S. Steel Gary Works	26.8	-12%	23.6
All other modeled sources	27.8	-22%	21.7
Background <sup>1</sup>	17.8		17.8
<b>Total</b>	<b>322.9</b>		<b>205.0</b>
<sup>1</sup> Background concentrations averaged from seasonal hourly Hammond data on day/hour of top 12 highest modeled values. <sup>2</sup> Formerly known as ArcelorMittal USA.			

### 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/m<sup>3</sup>.

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 considered. 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 2017-2019, the resulting modeled concentrations are considerably less and will not violate the 1-hour SO<sub>2</sub> 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 2017-2019	Projected Modeled Impact from 2017-2019 Emissions
Carmeuse Lime	11.9	-68%	3.8
Cleveland-Cliffs Steel (316) <sup>2</sup>	78.3	-5%	74.4
Cokenergy	54.6	+1%	55.1
U.S. Steel Gary Works	17.5	-12%	15.4
All other modeled sources	106.1	-22%	82.8
Background <sup>1</sup>	17.8		17.8
<b>Total</b>	<b>286.2</b>		<b>249.3</b>
<sup>1</sup> Background concentrations averaged from seasonal hourly Hammond data on day/hour of top 12 highest modeled values. <sup>2</sup> Formerly known as ArcelorMittal USA.			

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 SO<sub>2</sub> standard. Design values at both SO<sub>2</sub> sites within the county for the 2018-2020 period have decreased from 2013-2015. The Gary-IITRI monitoring site has decreased from 44 ppb to 31 ppb and the Hammond-141<sup>st</sup> St. monitor has decreased from 23 ppb to 22 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.

#### **Round 4 Areas**

During Round 4 designations, one source in Indiana, shown in Table 16, was identified around which SO<sub>2</sub> air quality characterization was required.

**Table 16: Sources Subject to the Round 4 Designation Process**

County	Source
Porter	Cleveland-Cliffs Burns Harbor <sup>1</sup>

<sup>1</sup> Formerly known as ArcelorMittal Burns Harbor.

On December 21, 2020, U.S. EPA completed designations for Round 4 designating Porter County, as "unclassifiable/attainment". The final rule was published in the FR on March 26, 2021 and became effective on April 30, 2021 (86 FR 16055).

Monitoring data was used to characterize air quality for designation of Porter County. Ongoing data requirements are the continued operation of SO<sub>2</sub> monitors as well as the continued reporting of such data. Cleveland-Cliffs Burns Harbor continues to operate the SO<sub>2</sub> 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 SO<sub>2</sub> standard as shown in Table 17.

**Table 17: Cleveland-Cliffs Burns Harbor LLC SO<sub>2</sub> Monitoring Data**

Site ID	County	99th Percentile Values, ppb				3-Year Design Value, ppb	
		2017	2018	2019	2020	2017-2019	2018-2020
181270028	Porter	33.2	28.0	79.0	81.0	47	62

### **Public Participation**

IDEM is providing a 30-day public comment period concerning this submittal of the *2021 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](mailto:bcallaha@idem.IN.gov).

Sincerely,



Matt Stuckey  
Assistant Commissioner  
Office of Air Quality

MS/sd/bc/md/gf/lf

Supporting Document:

1. Public Participation Process Documentation

cc: Chris Panos, EPA – Region 5 (no enclosure)  
Doug Aburano, EPA – Region 5 (no enclosure)  
Sara Arra, EPA – Region 5 (no enclosure)  
Abby Teener, EPA – Region 5 (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

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# **Supporting Document**

## **Public Participation Process Documentation**

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## **LEGAL NOTICE FOR PUBLIC COMMENT**

### **2021 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 *2021 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 (SO<sub>2</sub>) National Ambient Air Quality Standard (NAAQS). This evaluation per 40 CFR Subpart BB §51.1205, addresses areas designated during Rounds 2, 3, and 4. Based on this evaluation, IDEM recommends that no additional assessments to characterize air quality are needed at this time.

Copies of the draft *2021 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 12, 2021 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 *2021 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 11, 2021 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](mailto: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.*

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**Eric J. Holcomb**  
Governor

**Bruno L. Pigott**  
Commissioner

June 15, 2021

### CERTIFICATE OF PUBLICATION

This is to certify that the Indiana Department of Environmental Management (IDEM) Legal Notice regarding the following:

- Draft 2021 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 or before May 12, 2021. It is expected that it will remain posted on the site until at least June 12, 2021.

The notice in full was available online at the following web address, under "Statewide":

<https://www.in.gov/idem/public-notices/>

The draft documents were posted online under "Sulfur Dioxide (SO<sub>2</sub>) Air Quality Attainment/Nonattainment Designations" on or before May 12, 2021 at the following web address:

<https://www.in.gov/idem/airquality/information-about/nonattainment/nonattainment-designations/sulfur-dioxide-so2-air-quality-attainmentnonattainment-designations/>

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

By:

Mike Finklestein  
IDEM Webmaster

Attachments:

Copy of web page as published.