TABLE REVISIONS TO

REQUEST TO REDESIGNATE KENTUCKY COUNTIES LOCATED WITHIN THE

CINCINNATI, OH-KY-IN MSA 8-HOUR OZONE NONATTAINMENT AREA

Prepared by: Kentucky Energy and Environment Cabinet Division for Air Quality

December 2016

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The United States Environmental Protection Agency (U.S. EPA) recently reviewed Kentucky's submittal of the request to redesignate the Kentucky counties located within the Cincinnati, OH-KY-IN Metropolitan Statistical Area's 8-Hour Ozone Nonattainment Area. As part of Kentucky's response to U.S. EPA comments, the following tables have been updated with revised data.

Table 13 Cincinnati OH-KY-IN Area 2008 8-Hour Ozone Nonattainment Area Projected VOC Emissions

(TSD)

| VOC | | | • | |
|----------|--------|--------|--------|-------|
| County | 2011 | 2014 | 2020 | 2030 |
| Boone | 9.60 | 8.54 | 7.00 | 5.84 |
| Campbell | 3.96 | 3.40 | 2.55 | 2.10 |
| Kenton | 6.76 | 5.88 | 4.57 | 3.95 |
| Butler | 25.85 | 22.70 | 19.41 | 17.63 |
| Clermont | 14.13 | 12.39 | 10.17 | 9.07 |
| Clinton | 5.61 | 4.77 | 3.99 | 3.75 |
| Hamilton | 60.07 | 51.85 | 42.48 | 37.42 |
| Warren | 16.67 | 14.21 | 11.59 | 9.93 |
| Dearborn | 7.31 | 8.29 | 6.52 | 6.42 |
| TOTAL | 149.96 | 132.03 | 108.28 | 96.11 |

Table 16 Kenton County, Kentucky 2008 8-Hour Ozone Nonattainment Area Projected NOx Emissions (TSD)

| NOx | | Kenton | | | | | | | | | |
|----------------|------|--------|------|------|------|------|--|--|--|--|--|
| Sector | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 | | | | | |
| EGU | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | | |
| Non-EGU | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | | | | | |
| Air | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | | |
| Non-road | 0.77 | 0.64 | 0.51 | 0.43 | 0.35 | 0.27 | | | | | |
| Area | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 | | | | | |
| On-road | 6.53 | 5.17 | 3.73 | 2.28 | 1.64 | 0.99 | | | | | |
| TOTAL | 8.33 | 6.84 | 5.27 | 3.74 | 3.02 | 2.29 | | | | | |

| Table 23 |
|---|
| Cincinnati OH-KY-IN Area 2008 8-Hour Ozone Nonattainment Area |
| Projected NOx Emissions |
| (TSD) |

| NOx | | 1 | r | i |
|----------|--------|--------|--------|--------|
| County | 2011 | 2014 | 2020 | 2030 |
| Boone | 17.61 | 16.21 | 13.59 | 10.67 |
| Campbell | 5.34 | 4.39 | 2.39 | 1.46 |
| Kenton | 8.33 | 6.84 | 3.74 | 2.29 |
| Butler | 31.98 | 29.74 | 21.34 | 18.22 |
| Clermont | 54.48 | 49.59 | 36.48 | 34.60 |
| Clinton | 6.20 | 4.99 | 3.02 | 2.10 |
| Hamilton | 78.65 | 62.88 | 45.94 | 38.15 |
| Warren | 16.29 | 12.29 | 8.51 | 5.95 |
| Dearborn | 19.82 | 13.39 | 4.14 | 3.83 |
| TOTAL | 238.70 | 200.32 | 139.15 | 117.27 |

Table 35 Kenton County 2008 8-Hour Ozone Nonattainment Area NOx Emissions and Projections (TSD)

| NOx | | | Ker | nton | | | 2020 | 2030 |
|----------------|------|------|------|------|------|------|-----------------------------------|-----------------------------------|
| Sector | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 | Budget and Safety Margin | Budget and Safety Margin |
| EGU | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Non-EGU | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | | |
| Air | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| Non-road | 0.77 | 0.64 | 0.51 | 0.43 | 0.35 | 0.27 | | |
| Area | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 | 1.02 | | |
| On-road | 6.53 | 5.17 | 3.73 | 2.28 | 1.64 | 0.99 | | |
| TOTAL | 8.33 | 6.84 | 5.27 | 3.74 | 3.02 | 2.29 | 2.75 | 1.67 |

Table 43 Cincinnati, OH-KY-IN MSA 2008 8-Hour Ozone Nonattainment Area TOTAL Projected VOC Emissions (TSD)

| | | | | | | | Budget and Safety Margin | Budget and Safety Margin |
|----------------|--------|--------|------|--------|------|-------|-----------------------------------|-----------------------------------|
| VOC | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 | 2020 | 2030 |
| Boone, KY | 9.60 | 8.54 | 7.71 | 7.00 | 6.42 | 5.84 | 1.61 | 1.18 |
| Campbell, KY | 3.96 | 3.40 | 2.95 | 2.55 | 2.34 | 2.10 | 0.99 | 0.68 |
| Kenton, KY | 6.76 | 5.88 | 5.18 | 4.57 | 4.26 | 3.95 | 1.50 | 1.02 |
| Butler, OH | 25.85 | 22.70 | | 19.41 | | 17.63 | | |
| Clermont, OH | 14.13 | 12.39 | | 10.17 | | 9.07 | | |
| Clinton, OH | 5.61 | 4.77 | | 3.99 | | 3.75 | | |
| Hamilton, OH | 60.07 | 51.85 | | 42.48 | | 37.42 | | |
| Warren, OH | 16.67 | 14.21 | | 11.59 | | 9.93 | | |
| Dearborn, IN | 7.31 | 8.29 | | 6.52 | | 6.42 | | |
| Combined Total | 149.96 | 132.03 | | 108.28 | | 96.11 | | |

Table 44 Cincinnati, OH-KY-IN MSA 2008 8-Hour Ozone Nonattainment Area TOTAL Projected NOx Emissions (TSD)

| | | | | | | | Budget and Safety Margin | Budget and Safety Margin |
|----------------|--------|--------|-------|--------|-------|--------|-----------------------------------|-----------------------------------|
| NOx | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 | 2020 | 2030 |
| Boone, KY | 17.61 | 16.21 | 14.86 | 13.59 | 12.08 | 10.67 | 2.80 | 1.88 |
| Campbell, KY | 5.34 | 4.39 | 3.38 | 2.39 | 1.93 | 1.46 | 1.80 | 1.09 |
| Kenton, KY | 8.32 | 6.83 | 5.26 | 3.73 | 3.01 | 2.28 | 2.75 | 1.67 |
| Butler, OH | 31.98 | 29.74 | | 21.34 | | 18.22 | | |
| Clermont, OH | 54.48 | 49.59 | | 36.48 | | 34.60 | | |
| Clinton, OH | 6.20 | 4.99 | | 3.02 | | 2.10 | | |
| Hamilton, OH | 78.65 | 62.88 | | 45.94 | | 38.15 | | |
| Warren, OH | 16.29 | 12.29 | | 8.51 | | 5.95 | | |
| Dearborn, IN | 19.82 | 13.39 | | 4.14 | | 3.83 | | |
| Combined Total | 238.69 | 200.31 | | 139.14 | | 117.26 | | |

Table 45 Cincinnati, OH-KY-IN MSA 2008 8-Hour Ozone Nonattainment Area Emission Reductions (TSD)

| | 2014 | 2030 | Total Reductions |
|-----|--------|--------|-------------------------|
| VOC | 132.03 | 96.11 | 35.92 |
| NOx | 200.31 | 117.26 | 83.05 |

| Enter Pollutant(s) Here: | O3 (VOC, NOx) | | | Enter Ar | ea Here: | Boone, Ca | mpbell, Kenton Coun | ties |
|--|--|--------------------|---------------------------|--------------|-------------------|-----------|---|-------------|
| | Census | Base Year | Attain | Ргој | Census | Proj | | Census |
| ENTIRE COUNTY | 2010 ¹ | 2011 2 | 2014 | 2017 | 2020 ¹ | 2025 | | 2030 |
| loone, KY | 118,811 | 121,635 | 131,704 | 142,531 | 153,933 | 170,104 | | 190,27 |
| Campbell, KY | 90,336 | 90,946 | 91,178 | 91,410 | 91,642 | 90,870 | | 90,73 |
| Kenton, KY | 159,720 | 160,407 | 163,054 | 165,741 | 168,458 | 170,991 | | 174,69 |
| AREA TOTAL | 368,867 | 372,988 | 385,936 | 399,682 | 414,033 | 431,965 | | 455,70 |
| | | | | | | | | |
| | | | COUNTY | 1 | Area % | | | |
| | | | Boone, KY | . (| 57% | | | |
| 1 | | | Campbell, K Kenton, KY | Y V | 56% 54% | | | |
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| Population Projections 2015-2050 |), Census Data for | 2010, 2020, and 20 | 30, "Total Population | n", Kentucky | State Data Center | ¢ | | |
| http://www.ksdc.louisville.edu/ | | | | | | | For this ozone redes | |
| Population Estimates for 2011 and | and the second | | | | - | | request, each county Census Tracts NOT inclu | |
| http://ksdc.louisville.edu/index | .php/kentucky-dei | mographic-data/est | imates/population-c | Ind-housing- | <u>units</u> | | Population Growth ca | lculations: |
| ······································ | | | | | | | 706.01 and 706.04 (520.01 and 520.02 (C | |
| | | | | | | | 637.01 and 637.02 (| |

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| OLLUTANT(S): | O3 (VOC, NOx) | | AREA: | Boo | ne, Cam <u>pbell</u> | , Kenton Cou | nties | |
|--------------------------|--|---------------------------------------|----------------------------------|-------------------------------|--------------------------|--------------------------|--------------------------|--|
| | | VOC Base Year 2011 | VOC Attainment 2014 | VOC Projected 2017 | VOC Projected 2020 | VOC Projected 2025 | VOC Projected 2030 | |
| Facility ID | Facility Name | tpd | tpd | tpd | tpd | tpd | tpd | |
| Done, KY | Aristech Acrylics LLC | 0.04 | 0.04 | 0.04 | 0.04 | 0.01 | | |
| 2101500004 2101500010 | Greif Industrial Packaging & Services LLC | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | |
| 2101500010 | DRS Environmental Systems Inc | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | |
| 2101500018 | Duro Bag Manufacturing | 0.03 | 0.03 | 0.05 | 0.05 | 0.05 | 0.05 | |
| 2101500069 | Camco Chemical Co | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | |
| 2101500003 | Southern Graphic Systems Inc | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | |
| 2101500082 | R R Donnelley - Nielsen Plant | 0.29 | 0.29 | 0.29 | 0.29 | 0.04 | 0.04 | |
| 2101500086 | Duro Bag Mfg Co | 0.09 | 0.09 | 0.09 | 0.29 | 0.09 | 0.29 | |
| 2101500088 | The Hennegan Co | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | |
| 2101500102 | Sweco, Div of M-I, LLC | 0.04 | 0.04 | 0.05 | 0.04 | 0.04 | 0.04 | |
| 2101500102 | Continental Web Press Inc | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | |
| 2101500120 | Schwans Food Manufacturing Inc | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | |
| 2101500126 | Keebler Foods Co | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | |
| 2101500142 | Abrapower Inc | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | |
| 2101500144 | Stonehouse Building Products LLC | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | |
| 2101500146 | CW Zumbiel Packaging | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | |
| | BOONE COUNTY <u>NON-EGU</u> TOTAL | 1.57 | 1.57 | 1.57 | 1.57 | 1.57 | 1.57 | |
| 2101500029 | Duke Energy KY East Bend | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | |
| | BOONE COUNTY EGU TOTAL | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | |
| | BOONE COUNTY AIR (AIRCRAFT) | 0.42 | 0.42 | 0.44 | 0.45 | 0.26 | 0.06 | |
| | BOONE COUNTY GRAND TOTAL | 2.15 | 2.15 | 2.17 | 2.18 | 1.99 | 1.79 | |
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| Point source | es were divided into two categories: Non-EGU and EG Department of Env | | | craft) emissio | ns were provi | ded by the Inc | diana | |
| Individu | one redesignation request, each county has two Cen and 706.04 (Boone), 520.01 and 520 al county growth rates were calculated based on EPA were calculated using these growth rates, 2014, 2017 | .02 (Campbe 's 2011 NEI 2 | ll), 637.01 and 011-2025 poin | 637.02 (Kent t source emis | on). Islon projectio | ons. Once 202 | 25 | |
| | projected out to 2030 emissions, using the second s | ng the yearly | growth rate fr | om 2011 to 2 | 025. | | _ | |
| 2011 basey | ear point source emissions were determined based o were obtained through the Ke | | | | areas in each | county. Emis | sions | |

| DLLUTANT(S): | O3 (VOC, NOx) | | AREA: | Boo | ne, Campbell | , Kenton Cou | nties |
|-------------------------------------|--|--|--|--|--|---|-------------------------|
| | | VOC Base Year 2011 | VOC Attainment 2014 | VOC Projected 2017 | VOC Projected 2020 | VOC Projected 2025 | VOC Projecte 2030 |
| Facility ID | Facility Name | tpd | tpd | tpd | tpd | tpd | tpd |
| 2103700006 | IPSCO Tubulars KY Inc | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 | 0.14 |
| 2103700090 | Lafarge North America | 0.08 | 0.08 | 0.07 | 0.07 | 0.07 | 0.07 |
| | CAMPBELL COUNTY NON-EGU TOTAL | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.21 |
| | CAMPBELL COUNTY <u>EGU</u> TOTAL | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 1 | | |
| | CAMPBELL COUNTY AIR (AIRCRAFT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | CAMPBELL COUNTY GRAND TOTAL | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.21 |
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| For this o Individu emissions | tes were divided into two categories: Non-EGU and EG Department of Env zone redesignation request, each county has two Cens and 706.04 (Boone), 520.01 and 520 hal county growth rates were calculated based on EPA were calculated using these growth rates, 2014, 2017 projected out to 2030 emissions, usin rear point source emissions were determined based on | vironmental sus Tracts NG .02 (Campbe 's 2011 NEI 2 ', and 2020 v ng the yearly | Management. DT included in 1 II), 637.01 and 011-2025 poin vere interpolat growth rate fr | the Populatic 637.02 (Kent It source emi- ied between 2 om 2011 to 2 | on Growth cale con). ssion projectic 2011 and 202: 2025. | culations: 706 ons. Once 202 5. Then 2025 | 5.01 25 was |

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|--------------------------|---|---------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| POLLUTANT(S): | O3 (VOC, NOx) | | AREA: | Boo | ne Cam <u>pbell</u> | , Kenton Cou | nties |
| Facility ID | Facility Name | VOC Base Year 2011 tpd | VOC Attainment 2014 tpd | VOC Projected 2017 tpd | VOC Projected 2020 tpd | VOC Projected 2025 tpd | VOC Projected 2030 tpd |
| Kenton, KY | Marshan Date Co. I.D., Cavington Tarminal | 0.052670 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| 2111700022 2111700177 | Marathon Petr Co LP - Covington Terminal Firestone Building Products Co | 0.052670 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| 2111/001// | KENTON COUNTY NON-EGU TOTAL | | | | | | |
| | KENTON COUNTY NON-EGO TOTAL | 0.51 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 |
| | KENTON COUNTY EGU TOTAL | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | KENTON COUNTY AIR (AIRCRAFT) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| per conder - 1 | KENTON COUNTY GRAND TOTAL | 0.51 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 |
| | | | | | | | |
| | POINT SOURCE GRAND TOTAL | 2.88 | 2.88 | 2.89 | 2.89 | 2.69 | 2.47 |
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| | es were divided into two categories: Non-EGU and E Department of En zone redesignation request, each county has two Cen and 706.04 (Boone), 520.01 and 520 | vironmental Isus Tracts N(| Management. DT included in | the Populatio | on Growth cal | | _ |
| | al county growth rates were calculated based on EPA were calculated using these growth rates, 2014, 201 projected out to 2030 emissions, usi | 7, and 2020 v | vere interpolat | ted between | 2011 and 202 | | |
| 2011 basey | ear point source emissions were determined based o | | | | areas in each | <u>county</u> . Emi: | sions |
| | were obtained through the Ke | entucky Emis | sions Inventor | y database. | | | |
| | | | | | | | |
| Data Source : Ke | ntucky Emissions Inventory database (2011) | | | | | | |

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| OLLUTANT(S): | O3 (VOC, NOx) | | AREA: | Boo | ne, Campbel | , Kenton Cou | nties |
| Facility ID | Facility Name | NOx Base Year 2011 tpd | NOx Attainment 2014 tpd | NOx Projected 2017 tpd | NOx Projected 2020 tpd | NOx Projected 2025 tpd | NOx Projected 2030 tpd |
| Boone, KY | فسينجد بالأفادي ويحد والاستكار بحز | | | | | | |
| 2101500004 | Aristech Acrylics LLC | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 |
| 2101500010 | Greif Industrial Packaging & Services LLC | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 2101500018 | DRS Environmental Systems Inc | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 2101500019 | Duro Bag Manufacturing | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500069 | Camco Chemical Co | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500077 | Southern Graphic Systems Inc | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500082 | R R Donnelley - Nielsen Plant | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500086 | Duro Bag Mfg Co | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 2101500088 | The Hennegan Co | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500102 | Sweco, Div of M-1, LLC | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500114 | Continental Web Press Inc | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500120 | Schwans Food Manufacturing Inc | 0.09 | 0.09 | 0.09 | 0.10 | 0.10 | 0.10 |
| 2101500126 | Keebler Foods Co | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 2101500142 | Abrapower Inc | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500144 | Stonehouse Building Products LLC | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2101500146 | CW Zumbiel Packaging | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | BOONE COUNTY <u>NON-EGU</u> TOTAL | 0.16 | 0.14 | 0.15 | 0.15 | 0.18 | 0.18 |
| 2101500029 | Duke Energy KY East Bend | 7.04 | 7.23 | 7.46 | 7.71 | 7.96 | 8.33 |
| | BOONE COUNTY <u>EGU</u> TOTAL | 7.04 | 7.23 | 7.46 | 7.71 | 7.96 | 8.33 |
| | BOONE COUNTY AIR (AIRCRAFT) | 2.03 | 2.07 | 2.18 | 2.29 | 1.29 | 0.29 |
| | BOONE COUNTY GRAND TOTAL | 9.22 | 9.44 | 9.79 | 10.15 | 9.42 | 8.80 |
| | | | | | | | |
| For this of Individu emissions | es were divided into two categories: Non-EGU and E Department of En zone redesignation request, each county has two Cer and 706.04 (Boone), 520.01 and 520 al county growth rates were calculated based on EPA were calculated using these growth rates, 2014, 201 projected out to 2030 emissions, usi rear point source emissions were determined based on were obtained through the Ko | vironmental osus Tracts N(0.02 (Campbe N's 2011 NEI 2 7, and 2020 v ng the yearly on location wi | Management. DT included in ell), 637.01 and 2011-2025 poir vere interpolat growth rate fr thin these spe | the Populatio 637.02 (Ken It source emi ed between om 2011 to 2 cific localized | on Growth cal ton). ssion projecti 2011 and 202 2025. | culations: 700 ons. Once 20 5. Then 2025 | 5.01 25 was |
| | | | | | | | |
| ata Source : Ke | ntucky Emissions Inventory database (2011) | | | | | | |

| O3 (VOC, NOX) cility Name CO Tubulars KY Inc arge North America CAMPBELL COUNTY <u>NON-EGU</u> TOTAL CAMPBELL COUNTY <u>EGU</u> TOTAL CAMPBELL COUNTY AIR (AIRCRAFT) CAMPBELL COUNTY GRAND TOTAL | NOx Base Year 2011 tpd 0.00 0.17 0.17 0.00 0.00 0.00 0.17 | AREA: NOx Attainment 2014 tpd 0.00 0.17 0.17 0.00 0.00 0.00 0.17 | Boo NOx Projected 2017 tpd 0.00 0.17 0.17 0.00 0.00 0.00 0.17 | ne, Campbell NOx Projected 2020 tpd 0.00 0.17 0.17 0.00 0.00 0.17 | , Kenton Cour NOx Projected 2025 tpd 0.00 0.17 0.17 0.17 0.00 | NOx Projected 2030 tpd 0.00 0.17 0.17 0.00 |
|---|--|---|---|---|---|---|
| CO Tubulars KY Inc arge North America CAMPBELL COUNTY <u>NON-EGU</u> TOTAL CAMPBELL COUNTY <u>EGU</u> TOTAL CAMPBELL COUNTY AIR (AIRCRAFT) | Base Year 2011 tpd 0.00 0.17 0.17 0.00 | Attainment 2014 tpd 0.00 0.17 0.17 0.00 | Projected 2017 tpd 0.00 0.17 0.17 0.00 | Projected 2020 tpd 0.00 0.17 0.17 0.17 0.00 | Projected 2025 tpd 0.00 0.17 0.17 0.17 | Projected 2030 tpd 0.00 0.17 0.17 |
| CO Tubulars KY Inc arge North America CAMPBELL COUNTY <u>NON-EGU</u> TOTAL CAMPBELL COUNTY <u>EGU</u> TOTAL CAMPBELL COUNTY AIR (AIRCRAFT) | 0.00 0.17 0.17 0.00 0.00 | 0.00 0.17 0.17 0.00 | 0.00 0.17 0.17 0.00 0.00 | 0.00 0.17 0.17 0.00 | 0.00 0.17 0.17 0.00 | 0.00 0.17 0.17 0.00 |
| arge North America CAMPBELL COUNTY <u>NON-EGU</u> TOTAL CAMPBELL COUNTY <u>EGU</u> TOTAL CAMPBELL COUNTY AIR (AIRCRAFT) | 0.17 0.17 0.00 | 0.17 0.17 0.00 0.00 | 0.17 0.17 0.00 | 0.17 0.17 0.00 0.00 | 0.17 0.17 0.00 | 0.17 |
| arge North America CAMPBELL COUNTY <u>NON-EGU</u> TOTAL CAMPBELL COUNTY <u>EGU</u> TOTAL CAMPBELL COUNTY AIR (AIRCRAFT) | 0.17 0.17 0.00 | 0.17 0.17 0.00 0.00 | 0.17 0.17 0.00 | 0.17 0.17 0.00 0.00 | 0.17 0.17 0.00 | 0.17 |
| CAMPBELL COUNTY <u>NON-EGU</u> TOTAL CAMPBELL COUNTY <u>EGU</u> TOTAL CAMPBELL COUNTY AIR (AIRCRAFT) | 0.17 0.00 0.00 | 0.17 | 0.00 | 0.00 | 0.17 | 0.17 |
| CAMPBELL COUNTY AIR (AIRCRAFT) | 0.00 | 0.00 | 0.00 | 0.00 | | |
| | | | | | 0.00 | |
| | 0.17 | | | 0.17 | | 0.00 |
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| Department of Env redesignation request, each county has two Cens and 706.04 (Boone), 520.01 and 520. ounty growth rates were calculated based on EPA ⁴ e calculated using these growth rates, 2014, 2017 projected out to 2030 emissions, usin | vironmental f sus Tracts NC .02 (Campbe 2s 2011 NEI 2 2, and 2020 w ng the yearly | Management. DT included in t II), 637.01 and 011-2025 poin vere interpolat growth rate fro | the Populatio 637.02 (Kent t source emis ed between 2 om 2011 to 2 | n Growth calo on). sion projectio 2011 and 2025 | culations: 706 ons. Once 202 5. Then 2025 | 5.01 |
| ר פ | Department of Env redesignation request, each county has two Cens and 706.04 (Boone), 520.01 and 520 anty growth rates were calculated based on EPA calculated using these growth rates, 2014, 2017 projected out to 2030 emissions, usin <u>projected out to 2030 emissions, usin</u> <u>projected out to 2030 emissions, usin</u> were obtained through the Ke | Department of Environmental (redesignation request, each county has two Census Tracts NC and 706.04 (Boone), 520.01 and 520.02 (Campbe inty growth rates were calculated based on EPA's 2011 NEI 2 calculated using these growth rates, 2014, 2017, and 2020 w projected out to 2030 emissions, using the yearly <u>pint source emissions were determined based on location wi</u> were obtained through the Kentucky Emiss | Department of Environmental Management. redesignation request, each county has two Census Tracts NOT included in t and 706.04 (Boone), 520.01 and 520.02 (Campbell), 637.01 and anty growth rates were calculated based on EPA's 2011 NEI 2011-2025 poin calculated using these growth rates, 2014, 2017, and 2020 were interpolat projected out to 2030 emissions, using the yearly growth rate fro bint source emissions were determined based on location within these spear were obtained through the Kentucky Emissions Inventory | Department of Environmental Management. redesignation request, each county has two Census Tracts NOT included in the Populatio and 706.04 (Boone), 520.01 and 520.02 (Campbell), 637.01 and 637.02 (Kent inty growth rates were calculated based on EPA's 2011 NEI 2011-2025 point source emis calculated using these growth rates, 2014, 2017, and 2020 were interpolated between 2 projected out to 2030 emissions, using the yearly growth rate from 2011 to 2 <u>point source emissions were determined based on location within these specific localized</u> were obtained through the Kentucky Emissions Inventory database. | Department of Environmental Management. redesignation request, each county has two Census Tracts NOT included in the Population Growth calc and 706.04 (Boone), 520.01 and 520.02 (Campbell), 637.01 and 637.02 (Kenton). Inty growth rates were calculated based on EPA's 2011 NEI 2011-2025 point source emission projection calculated using these growth rates, 2014, 2017, and 2020 were interpolated between 2011 and 2021 projected out to 2030 emissions, using the yearly growth rate from 2011 to 2025. Dint source emissions were determined based on location within these specific localized areas in each were obtained through the Kentucky Emissions Inventory database. | edesignation request, each county has two Census Tracts NOT included in the Population Growth calculations: 706 and 706.04 (Boone), 520.01 and 520.02 (Campbell), 637.01 and 637.02 (Kenton). Inty growth rates were calculated based on EPA's 2011 NEI 2011-2025 point source emission projections. Once 202 calculated using these growth rates, 2014, 2017, and 2020 were interpolated between 2011 and 2025. Then 2025 projected out to 2030 emissions, using the yearly growth rate from 2011 to 2025. |

| | POINT SOL | JRCE EI | MISSION | IS | | | |
|-------------------------------------|---|---|--|--|---|--|---------------------------------|
| DELEUTANT(S): | O3 (VOC, NOx) | | AREA: | Boo | ne, Campbel | , Kenton Cou | nties |
| Facility ID | Facility Name | NOx Base Year 2011 tpd | NOx Attainment 2014 tpd | NOx Projected 2017 tpd | NOx Projected 2020 tpd | NOx Projected 2025 tpd | NOx Projecter 2030 tpd |
| enton, KY 2111700022 | Marathon Petr Co LP - Covington Terminal | 0.004079 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2111700022 | Firestone Building Products Co | 0.004079 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | KENTON COUNTY NON-EGU TOTAL | and the second se | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| | KENTON COUNTY EGU TOTAL | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | |
| | KENTON COUNTY AIR (AIRCRAFT) KENTON COUNTY GRAND TOTAL | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | UIUX | | 0.02 | | 0.01 | 0.01 |
| | POINT SOURCE GRAND TOTAL | 9.40 | 9.62 | 9.97 | 10.33 | 9.60 | 8.98 |
| | | | | | | | |
| | | | | | | | |
| Contraction | | | | | | | |
| | | | | | | | 11 |
| | | | | | | | |
| For this o Individu emissions | tes were divided into two categories: Non-EGU and E Department of Em zone redesignation request, each county has two Cem and 706.04 (Boone), 520.01 and 520 ual county growth rates were calculated based on EPA twere calculated using these growth rates, 2014, 201 projected out to 2030 emissions, usi year point source emissions were determined based o | vironmental osus Tracts NG 0.02 (Campbe N's 2011 NEI 2 7, and 2020 v ng the yearly | Management. DT included in II), 637.01 and 011-2025 poir vere interpolat growth rate fr | the Populatic 637.02 (Kent It source emi ted between rom 2011 to 2 | on Growth cal ton). ssion projecti 2011 and 202 2025. | culations: 700 ons. Once 20 5. Then 2025 | 5.01 25 was |

| LLUTANT(S): | O3 (VOC, NOx) | • | AREA: | | Boone Campbeli | , Kenton Counties | | |
|---------------------------------|---|---|--|--|---|---|---|--------------------------------|
| | | | voc | VOC | VOC | VOC | VOC | VOC |
| | | | PORTION | PORTION | PORTION | PORTION | PORTION | PORTION |
| | | | Base Year | Attainment | Projected | Projected | Projected | Projected |
| | | Area | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 |
| UNTY | | % | tpd | tpd | tpd | tpd | tpd | tpd |
| one | | 57% | 2.66 | 2.56 | 2.46 | 2.41 | 2.38 | 2.36 |
| mpbell | nu 2 | 56% | 1.29 | 1.26 | 1.23 | 1.22 | 1.21 | 1.19 |
| nton | | 54% | 2.51 | 2.43 | 2.35 | 2.31 | 2.28 | 2.25 |
| AREA TOT | AL | Capity Appendix | 6.46 | 6.25 | 6.04 | 5.94 | 5.87 | 5.80 |
| | | | | | | | | |
| (Boone), 5 meas Area sour | cone redesignation rec 20.01 and 520.02 (Ca surement function in G rce emissions were ob multiplying the 2011 | mpbell), 637. Google Earth. tained from 1 | 01 and 637.02 (Ker This approximated n he Indiana Departi | nton). The method f d the percentage of onattainment area. ment of Environmer | to omit the six tota each county that w ital Management (| al Census Tracts me was determined to (IDEM) for ALL year | entioned was by us be in the designate rs. <u>County portions</u> | ing the ed <u>s were</u> |

| LLUTANT(S); | O3 (VOC, NOx) | | AREA: | Providence in the second | Boone, Campbell | , Kenton Counties | | |
|---------------------------------|--|---|--|--|--|--|--|--------------|
| | | | NOx | NOx | NOx | NOx | NOx | NOx |
| | | | PORTION | PORTION | PORTION | PORTION | PORTION | PORTION |
| | | | Base Year | Attainment | Projected | Projected | Projected | Projected |
| 1 | | Area | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 |
| UNTY | 1112 Colore 1111 (0011) | % | tpd | tpd | tpd | tpd | tpd | tpd |
| one | | 57% | 0.43 | 0.43 | 0.43 | 0.43 | 0.44 | 0.44 |
| npbell | un witterfeitunden | 56% | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| AREA TOT | | 54% | 1.02 1.94 | 1.02 1.94 | 1.02 1.94 | 1.02 1.94 | 1.02 1.95 | 1.02 1.95 |
| | | | | | | | | |
| (Boone), 5 meas Area sour | one redesignation req 20.01 and 520.02 (Car urement function in G ce emissions were ob <u>multiplying the 2011</u> | mpbell), 637. Google Earth. tained from t | 01 and 637.02 (Ker This approximated n he Indiana Departi | aton). The method t I the percentage of onattainment area. ment of Environmen | o omit the six tota each county that w ital Management (| Il Census Tracts me vas determined to IDEM) for ALL year | entioned was by us be in the designate s. <u>County portions</u> | ing the ed |

| OLLUTANT(S) | O3 (VOC, NOx) | Air | | AREA: | Boone | Campbell, Kenton C | ounties |
|-----------------------------------|---|--|---|--|--|--|---------------------|
| | | | | | | | |
| | VOC | | VOC | VOC | VOC | VOC | VOC |
| REAL RANGES | PORTION | wie in Care in carrié | PORTION | PORTION | PORTION | PORTION | PORTION |
| Contraction of the | Base Year | erect when the set | Attainment | Interpolated | Projected | Interpolated | Projected |
| the second second second | 2011 | Population % | 2014 | 2017 | 2020 | 2025 | 2030 |
| OUNTY | tpd | (if applicable) | tpd | tpd | tpd | tpd | tpd |
| oone | 3.30 | 12 - 12 - 12 | 2.53 | 1.96 | 1.38 | 1.08 | 0.77 |
| ampbell | 2.05 | | 1.58 | 1.22 | 0.86 | 0.67 | 0.48 |
| enton | 3.12 | | 2.39 | 1.85 | 1.30 | 1.02 | 0.73 |
| HWY MOBILE | 8.47 | | 6.50 | 5.03 | 3.54 | 2.77 | 1.99 |
| | | | | | | | |
| Andy Reser from baseyear, 2014 | n the Ohio-Kentuck (attainment year), i county were not cal | (Boone), 520.01 ar y-Indiana Regional C 2020, and 2030. KYI culated based on po | nd 520.02 (Campbel council of Governme DAQ interpolated er opulation percentag | l), 637.01 and 637.02 ents, or OKI, provided nissions for the year | 2 (Kenton). I the highway mob s 2017 and 2025. T ssions were more a | alculations: 706.01 ar ile source emissions f The emissions for the accurately reflected by ity. | or 2011 specific |

HIGHWAY MOBILE SOURCE EMISSIONS Boone, Campbell, Kenton Counties POLLUTANT(S): O3 (VOC, NOx) AREA: NOx NOx NOx NOx NOx NOx PORTION PORTION PORTION PORTION PORTION PORTION Interpolated Projected Interpolated Projected **Base Year** Attainment 2014 2017 2020 2025 2030 2011 **Population %** (if applicable) tpd tpd tpd COUNTY tpd tpd tpd 5.46 3.94 2.41 1.73 1.05 6.90 Boone 1.08 0.65 3.41 2.46 1.50 Campbell 4.30 6.53 5.17 3.73 2.28 1.64 0.99 Kenton **HWY MOBILE** 10.13 6.20 4.45 2.69 17.72 14.04 For this ozone redesignation request, each county has two Census Tracts NOT included in the Population Growth calculations: 706.01 and 706.04 (Boone), 520.01 and 520.02 (Campbell), 637.01 and 637.02 (Kenton). Andy Reser from the Ohio-Kentucky-Indiana Regional Council of Governments, or OKI, provided the highway mobile source emissions for 2011 baseyear, 2014 (attainment year), 2020, and 2030. KYDAQ interpolated emissions for the years 2017 and 2025. The emissions for the specific portions of each county were not calculated based on population percentages. Instead, the emissions were more accurately reflected by dividing the vehicle miles traveled in the portion by the vehicle miles traveled in the entire county. Data Source : Andy Reser, "Ozone Mobile Source Emissions Inventory for the Cincinnati Ozone Nonattainment Area," Ohio-Kentucky-Indiana (OKI) Regional Council of Governments, Cincinnati, Ohio, August 2015, p. 6, Table 3.

| LLUTANT(S): | O3 (VOC, NOx) | | AREA: | | Boone, Campbell | , Kenton Counties | | |
|-------------|---|----------------|---|---------------------|--------------------|-------------------|---------------------|-------------------|
| | | | VOC | VOC PORTION | VOC PORTION | VOC PORTION | VOC PORTION | VOC |
| N | | Area | Base Year 2011 | Attainment 2014 | Projected 2017 | Projected 2020 | Projected 2025 | Projected 2030 |
| UNTY | | % | tpd | tpd | tpd | tpd | tpd | tpd |
| one | en este a su e su a | 57% | 1.49 | 1.30 | 1.12 | 1.03 | 0.97 | 0.92 |
| mpbell | ene de mais de Conserve e | 56% | 0.40 | 0.34 | 0.28 | 0.25 | 0.24 | 0.22 |
| nton | | 54% | 0.62 | 0.55 | 0.48 | 0.47 | 0.48 | 0.50 |
| NON-HWY TOT | AL | | 2.51 | 2.19 | 1.88 | 1.75 | 1.69 | 1.64 |
| (Boone), | izone redesignation requ 520.01 and 520.02 (Can surement function in Ga | npbell), 637.0 | 1 and 637.02 (Kent This approximated t | on). The method to | omit the six total | Census Tracts mer | itioned was by usir | ng the |
| | way source emissions we plied by multiplying the | | from the Indiana Do | epartment of Enviro | | | | |
| | | | | Future Years. | | | | |

| OLLUTANT(S): | O3 (VOC, NOx) | _ | AREA: | | Boone, Campbell | Kenton Counties | in the second second | |
|-----------------|---|----------------------------------|---|--|--|---|--|-----------|
| | | | NOx | NOx | NOx | NOx | NOx | NOx |
| | | | PORTION | PORTION | PORTION | PORTION | PORTION | PORTION |
| | | | Base Year | Attainment | Projected | Projected | Projected | Projected |
| | | Area | 2011 | 2014 | 2017 | 2020 | 2025 | 2030 |
| DUNTY | | % | tpd | tpd | tpd | tpd | tpd | tpd |
| one | | 57% | 1.06 | 0.88 | 0.70 | 0.60 | 0.49 | 0.38 |
| mpbell | Ballman and and B | 56% | 0.38 | 0.32 | 0.26 | 0.23 | 0.19 | 0.15 |
| inton | n (nacepterna) n | 54% | 0.77 | 0.64 | 0.51 | 0.43 | 0.35 | 0.27 |
| NON-HWY TOT | AL | | 2.21 | 1.84 | 1.47 | 1.26 | 1.03 | 0.80 |
| (Boone), mea | zone redesignation requ 520.01 and 520.02 (Cam surement function in Go way source emissions we | npbell), 637.0 bogle Earth. 1 | 1 and 637.02 (Kente This approximated f not | on). The method to the percentage of e nattainment area. | omit the six total ach county that wa | Census Tracts men as determined to b | itioned was by usin e in the designated | g the |
| | plied by multiplying the | | | | | | | |

| | Т | DTAL EM | ISSIONS | SUMMAR | RY | ¥1 ⁰⁴ |
|---|--|--|--|--|--|--|
| POLLUTANT(S): | O3 (VOC, NOx) | · · · | AREA: | Boone, (| Campbell, Kenton Coun | ties |
| COUNTY | VOC PORTION Base Year 2011 tpd | VOC PORTION Attainment 2014 tpd | VOC PORTION Projected 2017 tpd | VOC PORTION Projected 2020 tpd | VOC PORTION Projected 2025 tpd | VOC PORTION Projected 2030 tpd |
| Boone, KY | | | | | | |
| Point Area Hwy Mobile Non-Hwy TOTAL Campbell, KY Point Area Hwy Mobile Non-Hwy | 2.15 2.66 3.30 1.49 9.60 0.22 1.29 2.05 0.40 | 2.15 2.56 2.53 1.30 8.54 0.22 1.26 1.58 0.34 | 2.17 2.46 1.96 1.12 7.71 0.22 1.23 1.22 0.28 | 2.18 2.41 1.38 1.03 7.00 0.22 1.22 0.86 0.25 | 1.99 2.38 1.08 0.97 6.42 0.22 1.21 0.67 0.24 | 1.79 2.36 0.77 0.92 5.84 0.21 1.19 0.48 0.22 |
| TOTAL | 3.96 | 3.40 | 2.95 | 2.55 | 2.34 | 2.10 |
| Kenton, KY Point Area Hwy Mobile Non-Hwy | 0.51 2.51 3.12 0.62 | 0.51 2.43 2.39 0.55 | 0.50 2.35 1.85 0.48 | 0.49 2.31 1.30 0.47 | 0.48 2.28 1.02 0.48 | 0.47 2.25 0.73 0.50 |
| TOTAL AREA TOTAL | 6.76 20.32 | 5.88 17.82 | 5.18 15,84 | 4.57 14.12 | 4.26 13.02 | 3.95 11.90 |

| | т | OTAL EM | ISSIONS | SUMMA | R Y | and the second |
|----------------------------|-------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| POLLUTANT(S): | O3 (<u>VOC,</u> NOx) | | AREA: | Boone, (| Campbell, Kenton Coun | ties |
| | NOx PORTION Base Year 2011 | NOx PORTION Attainment 2014 | NOx PORTION Projected 2017 | NOx PORTION Projected 2020 | NOx PORTION Projected 2025 | NOx PORTION Projected 2030 |
| COUNTY | tpd | tpd | tpd | tpd | tpd | tpd |
| Boone, KY Point Area | 9.22 | 9.44 | 9.79 0.43 | 10.15 0.43 | 9.42 | 8.80 0.44 |
| Hwy Mobile | 6.90 1.06 | 5.46 | 3.94 0.70 | 2.41 | 1.73 0.49 | 1.05 0.38 |
| Non-Hwy TOTAL | 17.61 | 16.21 | 14.86 | 13.59 | 12.08 | 10.58 10.67 |
| Campbell, KY | | | | | | |
| Point | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| Area Hwy Mobile | <u> </u> | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 |
| Non-Hwy | 0.38 | 0.32 | 0.26 | 0.23 | 0.19 | 0.15 |
| TOTAL | 5.34 | 4.39 | 3.38 | 2.39 | 1.93 | 1.46 |
| Kenton, KY | | | | | | |
| Point | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Area Hwy Mobile | 6.53 | 5.17 | 3.73 | 2.28 | 1.64 | 0.99 |
| Non-Hwy | 0.77 | 0.64 | 0.51 | 0.43 | 0.35 | 0.27 |
| TOTAL | 8.33 | 6.84 | 5.27 | 3.74 | 3.02 | 2.29 |
| AREA TOTAL | 31.27 | 27.44 | 23,51 | 19.73 | 17.03 | 14.42 |

| /IPORTANT | NOTES: | | | | | | | |
|---|---|--|--|---|--|---|---|---|
| | | | | | | | | |
| (Boone), 520.01 | redesignation reque and 520.02 (Campb ction in <i>Google Eart</i> | bell), 637.01 an th. This approx | d 637.02 (Kento kimated the perc | n).). The metho entage of each c | d to omit the six to | otal Census Trac ermined to be i | ts mentioned v | was by using the |
| Individual county | growth rates were wa | - | . – | | used to project er wth for the three-c | | uture. The ave | erage growth rate |
| | | | | | | | | 18 |
| 2011 basevear e | missions were obtai | ined from a va | riety of sources. | Point source em | issions were obtail | ned from state (| emissions inver | ntorv databases. |
| 2011 baseyear are | missions were obta a and non-highway | mobile source | emissions were | obtained from th | e National Emissio | ons inventory (U | J.S. EPA). Highv | way mobile source |
| 2011 baseyear are emissions were highway mobile | a and non-highway e obtained from the source emissions fo | mobile source Ohio-Kentuck or the years 20 | emissions were y-Indiana Regio 17 and 2025. Gi | obtained from th nal Council of Go rowth rates in the | e National Emissio vernments, or OKI, Pop Growth" wo | ons Inventory (U in Cincinnati, O orksheet, shadeo | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were | way mobile source terpolated the then applied to |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile source terpolated the then applied to y), county portions |
| 2011 baseyear are emissions were highway mobile project the Future | a and non-highway e obtained from the source emissions fo Year O ₃ emissions fo | mobile source Ohio-Kentuck or the years 20 or 2014 (attaine | emissions were y-Indiana Region 17 and 2025. Gr ment year), 201 | obtained from th nal Council of Go rowth rates in the 7, 2020, 2025, an <u>re county by the</u> | e National Emissio vernments, or OKI, e "Pop Growth" wo d 2030. <u>Where ap</u> | ons Inventory (U in Cincinnati, O orksheet, shadeo plicable (area ar | J.S. EPA). Highv Dhio. KYDAQ in d in gray, were nd non-highway | way mobile sour terpolated the then applied to y), county portio |

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| 1 | NKY REDE | SIGNAT | ON REQUEST: | MOBIL | E SOURC | E SAFE | TY MARC | GIN CAL | CULATIC | NS - VO | C |
|-------------|----------|--------|-------------|-------|---------|---|-----------------------------------|------------------------|------------------------------|--|--------------|
| 2020 VOC | Boone | Step 1 | 8.54 | - | 7.00 | = | 1.54 | x | 0.15 | = | 0.23 |
| VUC | | Step 2 | 1.38 | + | 0.23 | = | 11: | | | | 1.61 |
| | Campbell | Step 1 | 3.40 | - | 2.55 | = | 0.85 | x | 0.15 | = | 0.13 |
| | | Step 2 | 0.86 | + | 0.13 | = | | | | | 0.99 |
| | Kenton | Step 1 | 5.88 | - | 4.57 | = | 1.31 | x | 0.15 | = | 0.20 |
| 4 | | Step 2 | 1.30 | + | 0.20 | = | | | | | 1.50 |
| | | | | | | T | T otal VOC Bud | CARDING STOLEN DOTTING | Safety Margi Safety Margi | CONFIDENCE AND A CONFID | 0.56 4.10 |
| 187 | | | | | | | | | 1 | | |
| 2030 | Boone | Step 1 | 8.54 | | 5.84 | = | 2.70 | x | 0.15 | = . | 0.41 |
| VOC | | Step 2 | 0.77 | + | 0.41 | = | | | | | 1.18 |
| | Campbell | Step 1 | 3.40 | - | 2.10 | - | 1.30 | x | 0.15 | = | 0.20 |
| | | Step 2 | 0.48 | + | 0.20 | = | | | | | 0.68 |
| | Kenton | Step 1 | 5.88 | - | 3.95 | = | 1.93 | x | 0.15 | = | 0.29 |
| | | Step 2 | 0.73 | + | 0.29 | = | | | | | 1.02 |
| | | | | | | al an an an an an | Total VOC Safety Margin for 2030: | | | | |
| | | 844 | | | 1912 | Total VOC Budget with Safety Margin for 2030: | | | | | 2.87 |

| N | NKY REDE | SIGNATIO | ON REQUEST: | MOBIL | E SOURC | E SAFE | TY MAF | RGIN CAL | CULATIO | NS - NO | x |
|-------------|----------------------|----------|-------------|---------------------------------------|---------|-----------|-----------------------------------|-----------------------------------|--------------|-------------|------|
| 2020 NOx | Boone | Step 1 | 16.21 | - | 13.59 | | 2.62 | x | 0.15 | | 0.39 |
| | | Step 2 | 2.41 | + | 0.39 | = | | | | | 2.80 |
| | Campbell | Step 1 | 4.39 | • | 2.39 | = | 2.00 | x | 0.15 | = | 0.30 |
| | | Step 2 | 1.50 | + | 0.30 | = | - | | | | 1.80 |
| | Kenton | Step 1 | 6.84 | - | 3.74 | = | 3.10 | x | 0.15 | = | 0.47 |
| | | Step 2 | 2.28 | + | 0.47 | = | | | | | 2.75 |
| | | | | | | 1912 1923 | Total NOx Safety Margin for 2020: | | | | |
| | | 163 1 | 21.01 | Total NOx Budget with Safety Margin f | | | | | n for 2020: | 7.3 | |
| 2030 | Boone | Step 1 | 16.21 | - | 10.67 | = | 5.54 | x | 0.15 | = | 0.83 |
| NOx | | Step 2 | 1.05 | + | 0.83 | = | | | | | 1.88 |
| | Campbell | Step 1 | 4.39 | - | 1.46 | = | 2.93 | × | 0.15 | = | 0.44 |
| | | Step 2 | 0.65 | + | 0.44 | = | | | | | 1.0 |
| | Kenton | Step 1 | 6.84 | | 2.29 | = | 4.55 | × | 0.15 | = | 0.6 |
| | | Step 2 | 0.99 | + | 0.68 | = | | | | | 1.67 |
| | | | | | | | | Total NOx Safety Margin for 2030: | | | |
| | in the second second | | | | 1.200 | T | otal NOx B | Budget with S | Safety Margi | n for 2030: | 4.64 |

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