Response to Comments and Changes to Draft Synthetic Minor Source Permit
For
Thurston Manufacturing Company
Permit No. R7-TMNSR-FY16-001

Comments Submitted by Iowa Department of Natural Resources (IDNR) and EPA Responses

IDNR Comment:

Thurston Manufacturing Company operates a sister facility in Iowa. DNR is concerned that many of the issues noted this letter regarding the draft permit, if left unaddressed, could create inequities in how two facilities with the same owner/operator and processes are regulated within the region.

Enforceable as a Practical Matter
The DNR concurs with EPA that the draft permit establishes restrictions to limit potential emissions for all criteria pollutants below major source applicability thresholds for purposes of Title V Operating Program (Title V) and Prevention of Significant Deterioration (PSD). However, the permit appears to be overly burdensome on the source to demonstrate that its minor source status is maintained on an ongoing basis.

The methods utilized in the draft permit to maintain the source's minor status should establish limits that are enforceable as a practical matter, are achievable in practice and consider the sources operations. Below are some of the specific instances where the draft permit does not appear to meet these criteria.

EPA Response:

The EPA and State agencies exercise considerable discretion in implementing their respective minor NSR programs. When exercising such discretion, the EPA, as the permitting authority for this facility, follows the fundamental requirements of administrative law that agency decisions not be arbitrary or capricious, be beyond statutory authority, or fail to comply with applicable procedures. In drafting the permit to establish restrictions to limit potential emissions for all regulated NSR pollutants and hazardous air pollutants (HAP) below major source applicability thresholds, the EPA is implementing the Federal Indian Country Tribal Minor NSR Rule. The rule intends to ensure that Indian country is not seen as a potential ‘‘pollution haven’’ where minor sources could attempt to escape air pollution control requirements. Also, the TMNSR Rule is designed to avoid putting Tribes or owners and operators locating in Indian country at a competitive disadvantage by requiring substantially more stringent controls in a particular area of Indian country than are required in the surrounding areas. As described in the Technical Support Document (TSD), EPA conducted a case-by-case control technology review under 40 CFR 49.154 (c) (1) that considered typical control technology or other emissions reduction measures used by similar sources in surrounding areas.

Emission limitations are defined in 40 CFR 49.152 as requirements established by the reviewing authority that limit the quantity, rate or concentration of emissions of air pollutants on a continuous basis. As required by 40 CFR 155 (a) (3) and (4), EPA included monitoring and recordkeeping "sufficient to assure compliance with the emission limitations" in the permit.

The permit contains those provisions that make each emission limitation enforceable as a practical matter. As defined in 40 CFR 49.152 "Enforceable as a practical matter" means that an emission limitation or other standard is both legally and practicably enforceable as follows:

(1) An emission limitation or other standard is legally enforceable if the reviewing authority has the right to enforce it.

(2) Practical enforceability for an emission limitation or for other standards (design standards, equipment standards, work practices, operational standards, pollution prevention techniques) in a permit for a source is achieved if the permit's provisions specify:

(i) A limitation or standard and the emissions units or activities at the source subject to the limitation or standard;

(ii) The time period for the limitation or standard (e.g., hourly, daily, monthly and/or annual limits such as rolling annual limits); and

(iii) The method to determine compliance, including appropriate monitoring, recordkeeping, reporting and testing.

The EPA considered the Thurston, NE facility's production variability in setting the emission limits such that there is a sufficient margin between allowable emissions and the major source thresholds to ensure that the limits are enforceable as a practical matter for the purpose of maintaining synthetic minor source status. As described in a separate comment response below, based on the EPA's review of synthetic minor permits with similar restrictions established by state agencies for other manufacturing facilities in surrounding areas, the Agency believes the permit for the Thurston, NE facility utilizes methods to establish and maintain minor source status on an ongoing basis that are achievable in practice and not overly burdensome.

The following responds to each of IDNR's other comments below and where appropriate notes any changes from the draft permit to the final permit. EPA determined that the changes described below were reasonably ascertainable during the public comment period because they directly respond to the IDNR's comments. Thus, no additional public notice/comment is necessary.

IDNR Comment:

• *In Section IV: General Permit Requirements (G), EPA states that "should EPA determine that calculated emissions are approaching or exceeding an emission limit, or should EPA determine that the permittee is failing to maintain adequate recordkeeping requirements, EPA may revise, reopen or modify the permit to require daily calculations of emissions". If EPA plans to change the recordkeeping frequency EPA should establish clear criteria in the permit for when the*

additional recordkeeping, such as daily monitoring of material usage and emissions will occur. Such a general requirement does not establish a clear method to determine compliance and does not include the appropriate monitoring and recordkeeping and is not enforceable as a practical matter.

EPA Response:

Conceptually, the Agency agrees that permits should include adequate recordkeeping and reporting to assure that the permittee is in compliance with the terms of the permit. In this case, EPA considered maximum design rates and emission limitations proposed by the source in determining the unit-specific and facility-wide emission limitations that will allow the source to maintain synthetic minor status. Based on the maximum design rates and other emission limitations, the Permittee will be able to show that each individual pollutant will remain well below the 100 ton-per-year major source threshold required for a Title V operating permit. In addition, the current facility-wide pollutant limits provide sufficient head space to allow the facility to remain a minor source should it expand in the future. As long as the Permittee complies with the facility-wide pollutant limits, EPA does not anticipate the need to revise the recordkeeping frequency, but the permit terms specify that upon certain EPA determinations, the permit may be revised, reopened or modified, as necessary. These emission limitations and associated monitoring and recordkeeping requirements set by the permit establish adequate criteria and methods to determine the potential for noncompliance that may serve as cause for EPA to make an administrative permit revision requiring additional recordkeeping, such as daily monitoring of material usage and emissions.

IDNR Comment:

• *In Section IV: General Permit Requirements, the draft permit includes the requirement that "The emission units subject to this construction permit shall not cause or contribute to a violation of any National Ambient Air Quality Standards (NAAQS) or to a violation of a PSD increment." Including this requirement in a permit incorrectly places the responsibility for ensuring that the NAAQS is being met on the facility. The Clean Air Act (CAA) places the responsibility for achieving the NAAQS on the applicable governing authority through their respective implementation plans. In cases where an approved State or Tribal Implementation Plan does not exist, this responsibility passes to the EPA. Such a general requirement does not establish a clear method for the source to determine compliance and does not include the appropriate monitoring and recordkeeping and is not enforceable as a practical matter.*

EPA Response:

The EPA concurs that the National Ambient Air Quality Standards and increments are generally met through rules developed under a State Implementation Plan and incorporated into air construction permits. In this case, the EPA finalized a Federal Implementation Plan (FIP) under the Clean Air Act regulations at 40 CFR § 49.155(a) (7) (ii), that requires a permit to contain a provision stating that the permittee's source must not cause or contribute to a NAAQS violation

or in an attainment area and must not cause or contribute to a PSD increment violation. Therefore, the appropriate language has been included in the permit.

IDNR Comment:

• *Thurston Manufacturing will have difficulty demonstrating that "All air exiting the booth during coating operations shall pass through the exhaust filters" as required in section II A(1)vi. Even with the daily visible observation, is it truly reasonable to expect all emissions to pass through the filters?*

EPA Response:

The EPA concurs that Thurston Manufacturing will have difficulty demonstrating that "All air exiting the booth during coating operations shall pass through the exhaust filters" as required in section II A(1)vi. The Agency also considers the sentence superfluous since the other requirements relating to the operation and maintenance of the paint booth and ventilation system in sections II A (1) iv-vii provide sufficient and enforceable limitations to assure continuous emissions reduction.

Changes in the draft permit to the final permit:

EPA has deleted this sentence from the draft permit, "All air exiting the booth during coating operations shall pass through the exhaust filters." See the final permit, Section II A (1) vi.

IDNR Comment:

• *Based on the DNR's experience with $PM_{2.5}$, Thurston Manufacturing will have difficultly documenting that control equipment as required in permit sections II A(1)vi, B(1)ii, G(1)ii, H(1)ii can achieve at minimum 90 percent capture of $PM_{2.5}$ emissions and in permit section II C(1)iii can achieve at minimum 99 percent capture of $PM_{2.5}$ emissions. Control efficiencies for $PM_{2.5}$ very greatly and are usually achieve much less control than typical for PM and PM_{10}.*

EPA Response:

The EPA acknowledges that control efficiencies for $PM_{2.5}$ are likely to be less than control efficiencies typical for PM and PM_{10}. The Agency reviewed information obtained from the Permittee and the various particulate emissions control equipment manufacturers to determine whether the Permittee may have difficulty in demonstrating that the control equipment as required in permit sections II A(1)vi, B(1)ii, G(1)ii, H(1)ii can achieve at minimum 90 percent capture of $PM_{2.5}$ emissions and in permit section II C(1)iii can achieve at minimum 99 percent capture of $PM_{2.5}$ emissions. The following is a summary of the particulate emissions control efficiency information reviewed in responding to this comment:

Paint Booth, EU-1-PB:
Information obtained from the source during an onsite visit in 2015 indicates that Chemco GPF Ultra fiberglass paint arrestors and Chemco Pocket Bag filters are used to control particulate emissions from the paint booth. While the Chemco Product Catalog indicates that the Chemco filters have an overspray removal rate over 99% (presumably demonstrated by the ASHRAE 52.1 test modified to use paint overspray in place of synthetic dust), there is no indication of the filters ability to control particle sizes in the range represented by $PM_{2.5}$ or PM_{10}.

The ASHRAE 52.1 test method required by the permit to evaluate paint booth filter efficiency expresses efficiency as an overall weight percentage and does not specify the ability the filters to control particle sizes in the range represented by $PM_{2.5}$ or PM_{10}.

Plasma Cutting Table, EU-2-PCT:
Information EPA obtained from the Permittee during an onsite visit in 2015 indicates that a Micro Air Cartridge Filter System Model RP6-2 used to control particulate emissions has the following documented filter efficiencies: 99.999% > 0.8 microns, 99.995% 0.3 to 0.8 microns, rated by the ASHRAE 52.2 test method. Unlike the ASHRAE 52.1 test method used to evaluate the paint booth filters, the ASHRAE 52.2 test method expresses efficiency as a function of specific particle size ranges.

Shot Blast Machine, EU-3-SBM:
Information EPA obtained from the Permittee during an onsite visit in 2015 indicates that a Viking Model SFC 12-3 Dust Collector uses cartridge filters with the following filter efficiencies: 99.999% > 0.8 microns, 99.995% 0.3 to 0.8 microns, rated by ASHRAE 52.2 test method.

Fabrication Machine 1, EU-7-FM1 and Fabrication Machine 2, EU-8-FM2:
Information EPA obtained from the Permittee during an onsite visit in 2015 indicates that each fabrication machine is controlled by a Donaldson Torit dust collector (Model DFT 2-8 or Model DFO 2-4) using Ultra-Web cartridge filters that have a Minimum Efficiency Reporting Value (MERV) 13 rating. Information from Donaldson Company, the manufacturer of the Ultra-Web cartridges, indicates that a MERV 13 rated filter has a particle removal efficiency of less than 75% for a composite average particle size 0.3 to 1.0 microns, and a minimum particle removal efficiency greater than 90% for a composite average particle sizes 1.0 to 3.0 microns and 3.0 to 10.0 microns.

The EPA's review of removal efficiency ratings published by the manufacturers of particulate emissions control equipment associated with each of the five emissions units indicates there is insufficient data to fully demonstrate that all particle size ranges below 2.5 microns are controlled to a specified minimum efficiency. The Agency concurs that the Permittee will have difficulty demonstrating that the control equipment associated with each emission unit can achieve the specified minimum $PM_{2.5}$ control efficiencies in the draft permit.

Changes in the draft permit to the final permit:

Due to the lack of documentation available to fully demonstrate that the control equipment associated with the five filter-controlled emission units can achieve a minimum capture of $PM_{2.5}$ emissions, the EPA is removing the minimum specified capture requirements in the draft permit sections II A(1)vi, B(1)ii, C(1)iii, G(1)ii, and H(1)ii. The following terms and condition replace certain requirements in the draft permit; and, other associated changes are incorporated into the final permit:

For the Paint Booth (EU-1-PB) the requirements in permit section II A(1)vi and A(2)vii that filters demonstrate 90% capture of PM, PM_{10}, and $PM_{2.5}$ will be removed and be replaced with a requirement to demonstrate that filters achieve at least 98 percent capture of coating overspray. This requirement is consistent with 40 CFR 63.11173 (e) (2) (i), a requirement in Subpart HHHHHH, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources.

In section II A(2)iii, the equation for calculating emissions from the Paint Booth will redefine the control efficiency term as a value assumed to be 90%. It will be noted that this assumed control efficiency value is less than the value determined by the procedure used to demonstrate filter efficiency consistent with the ASHRAE Test Method 52.1 (which expresses efficiency as an overall weight percentage and does not specify the ability the filters to control particle sizes in the range represented by $PM_{2.5}$ and PM_{10}).

For the other four filter-controlled emissions units, EPA is replacing the minimum PM, PM_{10} and $PM_{2.5}$ capture requirements as required in draft permit sections II B(1)ii, B(2)v, C(1)iii, C(2)iv, G(1)ii, G(2)iv, H(1)ii and H(2)iv, with minimum performance specifications that are achievable as demonstrated by ASHRAE Test Method 52.2 data provided by the manufacturers of the particulate emissions control equipment. It will be noted that ASHRAE Test Method 52.2 does not specify the ability the filters to control particle sizes in the full range represented by $PM_{2.5}$ and PM_{10}.

In sections II B(2)x, G(2)ix, and H(2)ix, the equations for calculating emissions for the Plasma Cutting Table (EU-2-PCT), Fabrication Machine 1 (EU-7-FM1), and Fabrication Machine 2 (EU-8-FM2) will each specify an assumed control efficiency value of 90%. In section II C(2)ix, the equation for calculating emissions for the Shot Blast Machine (EU-3-SBM) will specify an assumed control efficiency value of 99%.

<u>IDNR Comment</u>:

• *The permit does not establish an averaging period for pressure drop monitoring as required in sections II A(1)viii-ix, B(1)vi-vii, C(1)v-vi, G(1)v-vi, H(1)v-vi. This does not establish a clear method to determine compliance.*

EPA Response:

The monitoring of differential pressure required in permit Sections II A(2)viii-ix, B(2)vi-vii, C(2)v-vi, G(2)v-vi, and H(2)v-vi are instantaneous readings at least once every 24 hours while the emission unit is operating. Averaging is not necessary. Compliance is determined based on whether a reading is within the established "normal" operating range posted at the location of the measurement device and the established change out schedule. Thus, the permit establishes a method to determine compliance.

IDNR Comment:

• *The DNR questions the regulatory purpose of requiring "the permittee shall retain an inventory of spare filters ... to ensure rapid replacement in the event of filter failure" as required in permit sections II A(1)x, B(1)vii, G(1)vii, H(1)vii. If source does not retain an inventory onsite, does the source have potential to exceed an annual emission limit? Again, this requirement places significant burden on the source comply with such a requirement.*

EPA Response:

The EPA believes maintaining an on-site inventory of spare filters is a reasonable requirement relating to the operation and maintenance of the source to assure continuous emissions reduction. It is an emissions reduction measure used by similar sources in surrounding areas and appears to be currently implemented by the facility.

IDNR Comment:

Emission Limits

The DNR questions the need to establish plant-wide emissions levels for PM, PM_{10}, $PM_{2.5}$, NOx, VOC and HAP and require the source to the monitor emissions on an ongoing basis. Easier mechanisms could be used such as establishing material usage limits/material content limits or establish pollutant specific short-term limits for each emission unit.

For example, a maximum welding wire usage on an annual basis could be established with the corresponding "worst case wire" material content requirements, all potential emissions from welding operations at the source are limited and the source can easily comply by tracking monthly wire usage and retaining safety data sheets demonstrating the wire used at the source. These types of restrictions may be easier for the source to comply with and would reduce the recordkeeping, monitoring and reporting as required within the draft permit.

EPA Response:

The facility-wide emissions limits are established to allow the Permittee flexibility given production variability at the facility that makes establishing material usage limits/material

content limits or establishing pollutant specific short-term limits for each emission unit difficult to determine. The ongoing recordkeeping, monitoring and reporting provide assurance that the facility-wide limits are practically enforceable.

The recordkeeping established by the synthetic minor operating permit helps to establish a paper trail to evaluate possible future construction projects and the criteria and methods to determine potential noncompliance that may serve as cause for EPA to revise, reopen or modify the permit to require daily calculations of emissions and/or require additional control technologies and emission reduction measures. Also, the Agency anticipates that the facility will continue to upgrade its manufacturing process over time and will need additional minor NSR tribal construction permits which will need to be incorporated into the synthetic minor operating permit. The EPA will continue to evaluate the effectiveness of the current recordkeeping requirements.

Based on the EPA's review of synthetic minor permits with similar restrictions established by state agencies for other manufacturing facilities in surrounding areas, the Agency believes the final permit for the facility establishes emission limitations that are achievable in practice and not overly burdensome. The following list describes six state issued permits for manufacturing facilities in surrounding areas that, similar to the permit for Thurston Manufacturing Company, establish facility-wide emissions levels and require emissions monitoring on an ongoing basis.

Orthman Manufacturing Inc. – North Facility, Lexington, NE

A Class II operating permit issued by the Nebraska Department of Environmental Quality (NDEQ) for a farm machinery and equipment manufacturing facility establishes VOC and HAP emission limits to avoid Title V and MACT applicability. The permit includes a detailed HAP emission calculation methodology with separate equations for fabrication, welding, and surface coating operations using detailed monitoring inputs to track compliance with monthly and 12-month rolling VOC and HAP emissions limits. The HAP Emission Calculation Methodology specifies a facility-wide equation for calculating the total emissions of all HAPs combined used at the facility each month using the following inputs: total number of individual HAPs contained in the products used at the facility each calendar month; and total emissions (tons/month) of an individual HAP from all products used or operations that occurred at the facility each month.

Orthman Manufacturing Inc. – South Facility, Lexington, NE

Construction permit issued by the Nebraska Department of Environmental Quality (NDEQ) for a farm machinery and equipment manufacturing facility establishes VOC and HAP emission limits to avoid Title V and MACT applicability. The permit specifies VOC and HAP emission calculation methodologies with separate equations for welding and surface coating operations using detailed monitoring inputs to track compliance with monthly and 12-month rolling VOC and HAP emissions limits. Separate facility-wide equations for calculating total emissions of all combined VOC and total emissions of all combined HAP used at the facility each month are also specified.

Both NDEQ-issued permits for Orthman Manufacturing Inc. (North and South facilities) described above also include a requirement that best available control technology for air toxics (T-BACT) be implemented at the facility whereby safety data sheets are monitored to ensure HAP content in paints and coatings is less than 2.5 pounds per gallon and less than 26% by weight. However, a similar requirement is not included in the Thurston Manufacturing permit.

SAF-Holland, Inc., Warrenton, MO

An Intermediate State Permit to Operate issued by the Missouri Department of Natural Resources (MDNR) for a manufacturer of components used in over the road trailers establishes plant-wide emission limits for VOC and HAP (individual and combined) to avoid Title V and MACT applicability. The permit requires the use of a detailed data collection methodology to be used by the permittee to track compliance with monthly and 12-month rolling emissions limits from the entire installation (including welding and painting operations).

Quaker Window Products Company, Freeburg, MO

An Intermediate State Permit to Operate issued by the Missouri Department of Natural Resources (MDNR) for a window and door manufacturer establishes plant-wide emission limits for VOC, HAP (individual and combined), and PM_{10} to avoid Title V and MACT applicability. The permit requires the use of detailed data collection methodology to be used by the permittee to track compliance with monthly and 12-month rolling emissions limits from the entire installation (including welding, metal cutting and painting operations).

Modine Manufacturing Company, Trenton, MO

An Intermediate State Permit to Operate issued by the Missouri Department of Natural Resources (MDNR) for a radiator manufacturer establishes plant-wide emission limits for VOC and HAP (individual and combined) to avoid Title V and MACT applicability. The permit requires the use of detailed data collection methodology to be used by the permittee to track compliance with monthly and 12-month rolling emissions limits from the entire installation (including welding and painting operations).

Acuity Brands Lighting Inc. - Winona Lighting Inc., Winona, MN

A Total Facility Operating Permit issued by the Minnesota Pollution Control Agency (MPCA) for a manufacturer of specialized decorative electrical lighting fixtures includes limits on VOC, combined and single HAPs, PM, PM_{10}, and $PM_{2.5}$ emissions to avoid PSD, Title V and MACT applicability. The permit requires the use of a detailed data collection methodology to track compliance with monthly and 12-month rolling emissions limits from the facility's spray paint booths.

IDNR Comment:

If the ton per year emission limits are determined to be appropriate and remain in the final permit, the DNR questions the need for both the NOx, and $PM_{2.5}$ limits.

• NOx: The limit appears to be based on worst case emission scenario from each plasma cutting operation operating at maximum design rate and maximum hours of operation per year. The NOx limit appears to be unnecessary since potential emissions from these sources represent "worst case emission scenario" and do not require restriction on emissions or operation to maintain the facility's minor status for purposes of the Title V and PSD.

• $PM_{2.5}$: The draft permit establishes a source-wide PM_{10} cap and restricts PM_{10} below PSD and Title V applicability thresholds. $PM_{2.5}$ is defined as a subset of PM_{10} and the PM_{10} emission limit inherently restricts the potential emissions from $PM_{2.5}$ below PSD and Title V applicability thresholds.

EPA Response:

The EPA concurs that the facility-wide annual NOx emission limit is unnecessary given that it is based on the uncontrolled NOx emissions from emissions units operating at maximum design rate and maximum hours of operation per year. The permit will continue to include the requirement that Permittee maintain periodic records to estimate facility-wide NOx emissions, which will provide facility information and data to the Agency. The data will be used to better understand how these emissions change over time and whether they may trigger minor NSR or major source permitting requirements in the future.

The facility-wide emissions limits for $PM_{2.5}$ and PM_{10} reduce the potential to emit for the purpose of avoiding regulation and are set at different levels below the Part 71/PSD major source thresholds. The facility-wide emissions limits and associated monitoring provide clarity as to all potential and actual $PM_{2.5}$ and PM_{10} emissions at the facility that are considered in determining compliance and establishes a paper trail to evaluate possible future construction projects. Future projects are evaluated using different minor source applicability thresholds in the Tribal Minor NSR rule for PM_{10} and $PM_{2.5}$. Given that the location of the facility is in an attainment area, the minor NSR threshold for PM_{10} is 5 tons per year while the threshold for $PM_{2.5}$ is 3 tons per year. EPA is retaining the facility-wide annual emission limits for $PM_{2.5}$ and PM_{10}.

Changes in the draft permit to the final permit:

The EPA is removing the facility-wide annual NOx emission limit since it is unnecessary given that it is based on the uncontrolled NOx emissions from emissions units EU-2-PCT, EU-4-PW, EU-7-FM1, and EU-8-FM2, operating at maximum design rate and maximum hours of operation per year.

Additional changes in the draft permit to the final permit:

In addition to the changes identified previously, EPA is making several additional revisions to the permit. The revisions and justification for the revisions are included below.

1) To better distinguish the permittee's role in "assigning" personnel to spray apply surface coatings from EPA's role in "authorizing" the permit:

   Page 7, Section II. A. (1) viii.
   - Replaced "authorized" with "assigned"

   Page 7, Section II. A. (1) ix. c.
   - In first sentence replaced "authorized personnel" with "personnel assigned to spray apply surface coatings"
   - In second sentence replaced "authorized" with "assigned"

   Page 11, Section II. A. (2) xiv.
   - In two places replaced "authorized" with "assigned"

2) Page 9, Section II. A. (2) vi.

   Since equation component $\boldsymbol{E_{PB\text{-}HAP\,i}}$ is already in tons, removed conversion factor.

3) Minor typographical and formatting issues were corrected throughout the permit. There were no substantive changes to any permit condition as a result of these changes.