**NORTH CAROLINA DIVISION OF AIR QUALITY**

# Application Review

**Issue Date:**

**Region:** Mooresville Regional Office
**County:** Iredell
**NC Facility ID:** 4900070
**Inspector's Name:** Jim Vanwormer
**Date of Last Inspection:** 01/26/2022
**Compliance Code:** 3 / Compliance - inspection

## Facility Data

**Applicant (Facility's Name):** Statesville Brick Company

**Facility Address:**
Statesville Brick Company
391 Brickyard Road
Statesville, NC 28687

**SIC:** 3251 / Brick And Structural Clay Tile
**NAICS:** 327121 / Brick and Structural Clay Tile Manufacturing

**Facility Classification: Before:** Title V **After:** Title V
**Fee Classification: Before:** Title V **After:** Title V

## Permit Applicability (this application only)

**SIP:** 15A NCAC 02D .0515, .0516, .0521, .1109, .1100, .1111, .1806, and 02Q .0711
**NSPS:** N/A
**NESHAP:** 02D .1111 for MACT Subpart JJJJJ (effective December 28, 2023)
**PSD:** N/A
**PSD Avoidance:** N/A
**NC Toxics:** 15A NCAC 02D .1100 and 02Q .0711
**112(r):** N/A
**Other:** N/A

## Contact Data

| Facility Contact | Authorized Contact | Technical Contact |
|---|---|---|
| Adam Foster<br>Quality Control Manager<br>(704) 746-1459<br>PO Box 471<br>Statesville, NC 28687 | Eric Potts<br>Production Manager<br>(704) 872-4123<br>PO Box 471<br>Statesville, NC 28687 | Eric Potts<br>Production Manager<br>(704) 872-4123<br>PO Box 471<br>Statesville, NC 28687 |

## Application Data

**Application Number:** 4900070.20A
**Date Received:** 11/03/2020
**Application Type:** Renewal
**Application Schedule:** TV-Renewal

**Existing Permit Data**
**Existing Permit Number:** 02493/T11
**Existing Permit Issue Date:** 09/09/2016
**Existing Permit Expiration Date:** 08/31/2021

**Total Actual emissions in TONS/YEAR:**

| CY | SO2 | NOX | VOC | CO | PM10 | Total HAP | Largest HAP |
|---|---|---|---|---|---|---|---|
| 2021 | 16.49 | 9.13 | 5.17 | 14.55 | 13.28 | 11.43 | 7.14 [Hydrogen fluoride (hydrofluori] |
| 2020 | 26.17 | 14.47 | 8.20 | 23.06 | 21.07 | 18.15 | 11.33 [Hydrogen fluoride (hydrofluori] |
| 2019 | 24.87 | 13.72 | 7.44 | 21.90 | 20.03 | 17.24 | 10.76 [Hydrogen fluoride (hydrofluori] |
| 2018 | 20.81 | 11.56 | 6.32 | 18.38 | 16.76 | 14.43 | 9.01 [Hydrogen fluoride (hydrofluori] |
| 2017 | 26.02 | 14.40 | 7.88 | 22.95 | 20.97 | 18.04 | 11.27 [Hydrogen fluoride (hydrofluori] |

**Review Engineer:** Emily Supple

**Review Engineer's Signature:** **Date:**

**Comments / Recommendations:**
**Issue** 02493/T12
**Permit Issue Date:**
**Permit Expiration Date:**

## 1. Purpose of Application

Statesville Brick Company has submitted a renewal application, 4900070.20A, for their current Title V air permit, 02493T11. The facility is located at 391 Brickyard Road in Statesville, Iredell County, NC. The renewal application was received by email on November 3, 2020. The hardcopy renewal application was received at the Mooresville Regional Office on November 4, 2020 and the Raleigh Central Office on November 5, 2020.

## 2. Facility Description

Statesville Brick Company is a brick manufacturing facility. The permitted equipment include: one sawdust/natural gas-fired brick tunnel kiln (30 million Btu/hr, 11 tons/hr maximum process rate), two rotary dryers heated by hot gases from the kilns (3.75 tons/hr maximum process rate, each), one sawdust/natural gas-fired brick tunnel kiln (30 million Btu per hour, 9.5 tons/hr maximum process rate), and one shale/clay grinding and screening operation consisting of one crusher, one dry pan, one single screen, two double screens, and one hammermill.

The facility is subject to Title V regulation for individual HAPs. Specifically, the facility emits more than 10 tons per year of hydrogen fluoride.

## 3. History/Background/Application Chronology

History/Background

| | |
|---|---|
| September 9, 2016 | TV permit renewal issued. Air Permit No. 02493T11 was issued on September 9, 2016 with an expiration date of August 31, 2021. |

Application Chronology

| | |
|---|---|
| November 3, 2020 | Received permit application 4900070.20A for renewal. |
| November 10, 2020 | Sent acknowledgment letter indicating that the application for permit renewal was complete. |
| April 21, 2023 | Draft permit and review forwarded for to the regional office and applicant for comments. No comments were received from the Mooresville Regional Office. |
| April 26, 2023 | Dale Overcash of Trinity Consultants provided comments on the applicant's behalf. The comments are addressed in Section 12 of this review. |
| May 2, 2023 | Additional information was requested for documentation that the sawdust dryers should be subject to the Brick MACT. |
| May 3, 2023 | Dale Overcash sent additional comments pertaining to the applicability of the Brick MACT to the sawdust dryers. The comments are addressed in Section 12 of this review. |
| XXXXX XX, 2023 | Draft permit and permit review forwarded to public notice. |
| XXXXXX XX, 2023 | Public comment period ends. No comments received. |
| XXXXXX XX, 2023 | EPA comment period ends. No comments received. |
| XXXXXX XX, 2023 | Permit issued. |

## 4. Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit as part of the renewal process.

| Page No. | Section | Description of Changes |
|---|---|---|

| | | |
|---|---|---|
| Cover and throughout | Throughout | • Updated all tables, dates, and permit revision numbers |
| 5-6 | 2.1 A.1 | • Updated condition to be consistent with shell language |
| 6 | 2.1 A.2 | • Updated condition to be consistent with shell language |
| 6-7 | 2.1 A.3 | • Updated condition to be consistent with shell language |
| 8-17 | 2.1 A.5 | • Added MACT Subpart JJJJJ for Brick Manufacturing |
| 18-19 | 2.1 B.1 | • Updated condition to be consistent with shell language |
| 19 | 2.1 B.2 | • Updated condition to be consistent with shell language |
| 20 | 2.1 B.3 | • Removed the kilns (ID Nos. ES-K1 and ES-K2) from Condition 02D .1100 and added condition to Section 2.1 B |
| 20-21 | 2.1 B.4 | • Removed the kilns (ID Nos. ES-K1 and ES-K2) from Condition 02Q .0711 and added condition to Section 2.1 B |
| 22 | 2.1 C.1 | • Updated condition to be consistent with shell language |
| N/A | N/A | • Condition 02D .0515 removed for shale/clay grinding and screening operation (ID No. F-GR) |
| N/A | N/A | • Condition 02D .1100 removed from Section 2.2 A. |
| N/A | N/A | • Condition 02Q .0711 removed from Section 2.2 A |
| 25-33 | General Conditions | • Updated to the latest version of DAQ shell version 6.0 01/17/2022. |

This permit renewal is without modification, and no changes to the Title V Equipment Editor are needed.

**5. Regulatory Review**

Statesville Brick Company is subject to the following regulations. The facility's equipment and operations have not changed since the last renewal in 2016. MACT Subpart JJJJJ (5J) was added with this renewal. The permit was updated to reflect the most current stipulations for all applicable regulations, where necessary.

- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes

  This Rule states that particulate matter emissions from any stack, vent, or outlet, resulting from any industrial process for which no other emission control standards are applicable, shall not exceed the level calculated with the equation(s) displayed below. With this permit revision, 02D .0515 is no longer applicable to the grinding/screening operation (ID No. F-GR) since it was stated in the application that this source only emits fugitive particulate emissions which are not emitted from a stack and are therefore not covered in this regulation. The emission sources (ID Nos. ES-K1, ES-K2, ES-SD1, and ES-SD2) continue to be subject to 02D .0515 and shall not exceed the allowable emission rate as shown below.

  The allowable emission rate ($E_{al}$) for the emissions sources is a function of the process weight rate and shall be determined by the following equation(s), where P is the process throughput rate in tons per hour (tons/hr) and $E_{al}$ is the allowable emission rate in pounds per hour (lbs/hr).

  $E_{al} = 4.10 \times (P)^{0.67}$ for P <= 30 tons/hr, or
  $E_{al} = 55 \times (P)^{0.11} - 40$ for P >30 tons/hr

  ES-K1 and ES-K2

  The process rates (P) for the kilns, ES-K1 and ES-K2, are 9.95 and 9.35 tons per hour, respectively.

  Therefore, $E_{al} = 4.10 \times (P)^{0.67}$
  $E_{al}$(ES-K1) = 19.11 lbs/hr
  $E_{al}$(ES-K2) = 18.33 lbs/hr

  Actual particulate emissions ($E_{ac}$) must be below $E_{al}$.

Actual emissions from the kilns were taken from the CY2021 emissions inventory. The facility reported a total of 8,736 operating hours for each kiln for CY2021.

$E_{ac}$(ES-K1) = 0.96 tpy / 8,736 hr/yr x 2,000 lb/ton = 0.22 lbs/hr < $E_{al}$ (19.11 lbs/hr)
$E_{ac}$(ES-K2) = 2.46 tpy / 8,736 hr/yr x 2,000 lb/ton = 0.56 lbs/hr < $E_{al}$ (18.33 lbs/hr)

Actual emissions are well below the allowable emissions rates for the kilns.

ES-SD1 and ES-SD2

The process rates (P) for the sawdust dryers, ES-SD1 and ES-SD2, are 3.75 tons per hour, each.

Therefore, $E_{al} = 4.10 \times (P)^{0.67}$
$E_{al}$(ES-SD1, ES-SD2) = 9.94 lbs/hr, each
Actual particulate emissions ($E_{ac}$) must be below $E_{al}$.

Actual emissions from the sawdust dryers were taken from the CY2021 emissions inventory. The facility reported a total of 8,736 operating hours for each kiln for CY2021.

$E_{ac}$(ES-SD1) = 2.47 tpy / 8,736 hr/yr x 2,000 lb/ton = 0.57 lbs/hr < $E_{al}$ (9.94 lbs/hr)
$E_{ac}$(ES-SD2) = 7.37 tpy / 8,736 hr/yr x 2,000 lb/ton = 1.69 lbs/hr < $E_{al}$ (9.94 lbs/hr)

Actual emissions are below the allowable emissions rates for the sawdust dryers.

To ensure continuous compliance with this regulation, the facility must perform semiannual inspections of each brick kilns' ductwork and combustion systems. Additionally, the facility must perform monthly visual inspections of the system ductwork and material collection unit for each sawdust dryer and an annual external inspection of each cyclone. The results of each inspection must be recorded in a logbook which is available for review. A summary report is due semiannually on January 30 and July 30 of each year. The report must detail all monitoring and recordkeeping activities and identify any deviations from the requirements of the permit.

Continued compliance with this regulation is expected.

- 15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources

  This Rule states that emissions of sulfur dioxide (SO2) from any source shall not exceed 2.3 pounds of SO2 per million Btu heat input. SO2 emissions result from the combustion of sawdust and natural gas in the kilns (ID Nos. ES-K1 and ES-K2).

  The SO2 emission factor for wood waste combustion is 0.025 pounds of SO2 per million Btu heat input as per the NC DAQ Wood Waste Combustion emissions spreadsheet (Revision L). The SO2 emission factor for natural gas combustion, as per the NC DAQ Natural Gas Combustion emissions spreadsheet (Revision N), is 0.6 pounds per million standard cubic foot (for sources which combust at a rate below 100 million Btu per hour) which converts to 0.001 pounds per million Btu when a heating value of 1,020 Btu per standard cubic foot is assumed. The emissions factors for both wood waste and natural gas combustion demonstrate that the emission limit of 2.3 pounds of SO2 per million Btu heat input will not be exceeded. No further monitoring, recordkeeping, or reporting is required. Continued compliance is anticipated.

- 15A NCAC 02D .0521, Control of Visible Emissions

  This Rule applies to all fuel burning sources and to other industrial processes having a visible emission. For sources manufactured after July 1, 1971, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period. Six-minute averaging periods may exceed 20 percent opacity if:

  (1) no six-minute period exceeds 87 percent opacity;
  (2) no more than one six-minute period exceeds 20 percent opacity in any hour; and

(3) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period.

This Rule applies to visible emissions for all emission sources at the facility including the sawdust/natural gas-fired kilns (ID Nos. ES-K1 and ES-K2), sawdust rotary dryers (ID Nos. ES-SD1 and ES-SD2), and the grinding/screening operation (ID No. F-GR).

In order to comply with 02D .0521, the facility shall make monthly visible emissions observations of each emission point and record the findings in a logbook which is available for review. A summary report is due semiannually on January 30 and July 30 of each year. The report must detail all monitoring and recordkeeping activities and identify any deviations from the requirements of the permit.

This facility was most recently inspected by Mr. Jim Vanwormer of MRO on January 26, 2022. No visible emissions were observed from the facility during this inspection. Therefore, this facility is considered to be in compliance with 02D .0521.

- 15A NCAC 02D .1109, CAA § 112(j); Case-by-Case MACT for Brick Manufacturers

  On March 13, 2007, the D.C. Circuit Court vacated the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Brick & Structural Clay Products Manufacturing, which had been promulgated under 40 CFR 63, Subpart JJJJJ. As a result, the site-specific Maximum Achievable Control Technology (MACT) standards required under CAA §112(j), commonly referred to as the MACT "hammer" provisions, were triggered.

  On October 26, 2015, the new MACT Subpart JJJJJ was published in the Federal Register. This new rule features operating limits, emission limits, work practice standards, and performance testing requirements for both small and large tunnel kilns. Per the rule, small tunnel kilns are designated as those that have a capacity of less than 10 TPH and large tunnel kilns are those that have a capacity of equal to or greater than 10 TPH. Both kilns at Statesville Brick are considered small tunnel kilns according to the new Subpart JJJJJ rule. Previously, the facility was able to avoid the applicability of MACT JJJJJ by taking a limitation to operate the kilns at less than 10 tons per hour of production. The facility will now be subject to MACT Subpart JJJJJ since it is a major source of HAPs. The facility indicated in the application that MACT Subpart JJJJJ should be put in the new permit revision. Both kilns (ID Nos. ES-K1 and ES-K2) at Statesville Brick are still currently subject to the Case-by-case MACT Standard for Brick Kilns (02D .1109) and they shall remain subject until the compliance date for Subpart JJJJJ occurs on December 28, 2023 at which point the facility must be in compliance with MACT Subpart JJJJJ.

  Continued compliance with this regulation is expected.

- 15A NCAC 02D .1111, Maximum Achievable Control Technology (MACT)

  Statesville Brick Company is subject to National Emission Standards for Hazardous Air Pollutants for Brick Manufacturers, 40 CFR Part 63 Subpart JJJJJ. The compliance requirements for this MACT will come into effect for this facility on December 28, 2023. Until then, the facility can choose to continue complying with the 112(j) condition above. More discussion on MACT is provided below in Section 6 of this review.

- 15A NCAC 02D .1100, Control of Toxic Air Pollutants – This regulation is state enforceable only. With this application, the facility requested that the toxics conditions be removed from the permit since the kilns will be subject to MACT Subpart JJJJJ. As part of the T09 permit review and toxics memo dated May 12, 2004, the DAQ conducted a TAP evaluation and demonstrated emission sources of TAPs present no unacceptable risk to human health. Thus, the toxics emission limits and restrictions for the kilns (ID Nos. ES-K1 and ES-K2) may be removed from the permit. However, the kilns are not the only source of air toxics. The sawdust dryers also emit toxic air pollutants (TAPs) but are not listed as affected sources under Subpart JJJJJ. Thus, the toxic emission limits and restrictions for the sawdust dryers (ID Nos. ES-SD1 and ES-SD2) will remain in the permit. More discussion on toxics is provided below in Section 7 of this review.

- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions

This Rule applies to all operations that may produce odorous emissions that can cause or contribute to objectionable odors beyond the facility's boundaries. The owner or operator of the facility shall not operate without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary. Continued compliance is anticipated.

- 15A NCAC 02Q .0711, Emission Rates Requiring a Permit - The facility emits or has a potential to emit the following NC air toxics below their respective TPERs: acrylonitrile, beryllium, carbon disulfide, carbon tetrachloride, chloroform, soluble chromate compounds (as chromium VI equivalent), di(2-ethylhexyl) phthalate, mercury, methyl chloroform, methylene chloride, methyl ethyl ketone, perchloroethylene, phenol, styrene, toluene, trichlorofluoromethane, and xylene. With this application, the facility requested that the toxics conditions be removed from the permit since the kilns will be subject to MACT Subpart JJJJJ. However, the kilns are not the only source of air toxics. The sawdust dryers also emit toxic air pollutants (TAPs) but are not listed as affected sources under Subpart JJJJJ. Thus, the TPER limits still apply, and 02Q .0711 will remain in the permit. The CY2021 emission inventory appeared to demonstrate compliance with this regulation. A toxics review is not triggered with this permit renewal. More discussion on toxics is provided below in Section 7 of this review.

**6. NSPS, NESHAPS/MACT, PSD, 112(r), CAM**

NSPS - Two double deck screens and the hammermill (F-DDS1, F-DDS2, and F-HM1) are affected sources under 40 CFR 60 Subpart OOO. However, they are exempt from the provisions of Sections 60.672, 60.674, and 60.675, as per 40 CFR 60.670(d)(1). In addition, the permittee has complied with the requirement of Section 60.676(a) for these sources, as required per 40 CFR 60.60.670(d)(2). No remaining requirements of this subpart apply to the facility, so the condition will not be listed in the permit.

No equipment is being added or removed, so this permit renewal does not change the facility's NSPS status.

NESHAP/MACT – Statesville Brick Company is brick manufacturer and a major source of HAPs due to emissions of hydrogen fluoride in excess of 10 tons per year. As such, the facility is subject to National Emission Standards for Hazardous Air Pollutants for Brick and Structural Clay Manufacturing, 40 CFR Part 63 Subpart JJJJJ (MACT Subpart JJJJJ). The MACT applies to the facility's existing tunnel kilns (ID Nos. ES-K1 and ES-K2). The kilns can be considered "small tunnel" since each has a design capacity of less than 10 tons per hour of fired product. The compliance requirements for this MACT will come into effect for this facility on **December 28, 2023**. Until then, the facility can choose to continue complying with the 112(j) condition. In this renewal application, the facility requested that MACT Subpart JJJJJ be added to the permit. The requirements of MACT Subpart JJJJJ are briefly summarized below. The permit contains the complete list of requirements for this facility.

**Emission Limits**

Once the compliance requirements for MACT Subpart JJJJJ come into effect, the facility must meet the emissions limits in Table 1 of MACT Subpart JJJJJ for the existing small tunnel kilns as follows:

| Pollutant | Emission Limit | Alternative Emission Limit |
|---|---|---|
| HF, HCl, Cl2 | 57 lb/hr, combined | N/A |
| PM | 0.37 lb/ton of fired product | 4.8 mg/dscm at 17% O2<br>*or*<br>non-Hg HAP metals must not exceed 0.11 lb/hr |
| Hg | 3.3E-04 lb/ton of fired product | 91 µg/dscm at 17% O2<br>*or*<br>0.0019 lb/hr |

**Operating Limits**

The facility must comply with the following operating requirements found in Table 2 of MACT Subpart JJJJJ for the small tunnel kiln with no add-on controls as follows:

i. Maintain no visible emissions from the stack.
ii. Maintain the process rate of each kiln at or below the kiln process rate determined as follows:

- Calculate the maximum potential HCl-equivalent emissions for HF, HCl, and $Cl_2$ for each tunnel kiln using Equation 4:

$$E_{\max i} = (Cap_i)\left[(MP_{iHCl}) + (MP_{iHF})\left(\frac{RfC_{HCl}}{RfC_{HF}}\right) + \left(MP_{iCl_2}\right)\left(\frac{RfC_{HCl}}{RfC_{Cl_2}}\right)\right] \text{ (Equation 4)}$$

Where:
$E_{max\ i}$ = maximum potential HCl-equivalent emissions for kiln i in pounds per hour
$Cap_i$ = design capacity for kiln i, in tons of fired product per hour
$MP_{iHCl}$ = mass of HCl per unit of production for kiln i, in pounds of HCl per ton of fired product
$MP_{iHF}$ = mass of HF per unit of production for kiln i, in pounds of HF per ton of fired product
$MP_{iCl2}$ = mass of $Cl_2$ per unit of production for kiln i, in pounds of $Cl_2$ per ton of fired product
$RfC_{HCl}$ = reference concentration for HCl, 20 micrograms per cubic meter
$RfC_{HF}$ = reference concentration for HF, 14 micrograms per cubic meter
$RfC_{Cl2}$ = reference concentration for $Cl_2$, 0.15 micrograms per cubic meter

- For multiple tunnel kilns, sum the maximum potential HCl-equivalent values for all tunnel kilns at the facility using Equation 5:

$$E_{\max total} = \sum_{i=1}^{n} E_{\max i} \quad \text{(Equation 5)}$$

- For a single tunnel kiln, if the total facility maximum potential HCl-equivalent emissions ($E_{max\ i}$) are greater than the HCl-equivalent limit, determine the maximum process rate for the tunnel kiln using Equation 6 that would ensure the total facility maximum potential HCl-equivalent emissions remain at or below the HCl-equivalent limit.

$$P_{\max i} = \frac{HCl-eq}{\left[(MP_{iHCl})+(MP_{iHF})\left(\frac{RfC_{Hcl}}{RfC_{HF}}\right)+\left(MP_{iCl_2}\right)\left(\frac{RfC_{HCl}}{RfC_{Cl_2}}\right)\right]} \text{ (Equation 6)}$$

where:
$P_{max\ i}$ = maximum process rate for kiln i in tons per hour
HCl-eq = HCl-equivalent limit in Section 2.1 A.5.n (57 pounds per hour)
$MP_{iHCl}$ = mass of HCl per unit of production for kiln i in pounds of HCl per ton of fired product
$MP_{iHF}$ = mass of HF per unit of production for kiln i in pounds of HF per ton of fired product
$MP_{iCl2}$ = mass of Cl2 per unit of production for kiln i in pounds of Cl2 per ton of fired product
$RfC_{HCl}$ = reference concentration for HCl (20 micrograms per cubic meter)
$RfC_{HF}$ = reference concentration for HF, 14 micrograms per cubic meter
$RfC_{Cl2}$ = reference concentration for $Cl_2$, 0.15 micrograms per cubic meter

- For multiple tunnel kilns, if the total facility maximum potential HCl-equivalent emissions ($E_{max\ total}$) are greater than the HCl-equivalent emission limit, determine the combination of maximum process rates for each single kiln that would ensure that total facility maximum potential HCl-equivalent emissions remain at or below the HCl-equivalent emission limit.

The process rate determined should be such that $E_{max\ total}$ does not exceed the applicable emission limit of 57 lb/hr of HCl-equivalent emissions. The facility stated in the application that the HCl-equivalent emission rate for all kilns is less than 57 lb/hr. Performance testing is required to verify compliance with this stipulation.

**Work Practice Standards**

The following work practice standards apply at all times as per 40 CFR 63.8420(e) and Table 3 of MACT Subpart JJJJJ. As per 40 CFR 63.8420(a), the facility must be in compliance with the emission limitations at all times except

during periods of start-up and shutdown, at which time the facility must comply with the following work practice standards.

| For each… | You must… | According to the following requirements… |
|---|---|---|
| Existing, new, or reconstructed tunnel kiln | Minimize dioxin/furan emissions | Maintain and inspect the burners and associated combustion controls (as applicable);<br>and |
| | | Tune the specific burner type to optimize combustion. |
| Existing, new, or reconstructed tunnel kiln during periods of startup | Minimize HAP emissions | Establish the startup push rate for each kiln, the minimum APCD inlet temperature for each APCD, and temperature profile for each kiln without an APCD and include them in your first compliance report, as specified in 63.8485(c)(8);<br>and |
| | | After the initial charging of the kiln with loaded kiln cars, remain at or below the startup push rate for the kiln until the kiln exhaust reaches the minimum APCD inlet temperature for a kiln with APCD or until the kiln temperature profile is attained for a kiln with no APCD;<br>and |
| | | If your kiln has an APCD, begin venting the exhaust from the kiln through the APCD by the time the kiln exhaust temperature reaches the minimum APCD inlet temperature. |
| Existing, new, or reconstructed tunnel kiln during periods of shutdown | Minimize HAP emissions | Do not push loaded kiln cars into the kiln once the kiln exhaust temperature falls below the minimum APCD inlet temperature if the kiln is controlled by an APCD or when the kiln temperature profile is no longer maintained for an uncontrolled kiln;<br>and |
| | | If your kiln has an APCD, continue to vent the exhaust from the kiln through the APCD until the kiln exhaust temperature falls below the minimum inlet temperature for the APCD. |
| Existing, new, or reconstructed tunnel kiln during periods of routine control device maintenance | Minimize HAP emissions | Develop and use a temperature profile for each kiln, develop and follow maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices and controls that regulate air to fuel ratios;<br>and |
| | | Develop and maintain records for each kiln, as specified in 63.8490(a)(3) |

The small tunnel kilns at Statesville Brick Company do not have any add-on control devices. To ensure that the facility is in compliance by December 28, 2023, the facility must complete the following by December 28, 2023:

1. Tune and inspect the burners and combustion controls;
2. Install continuous temperature monitoring and recording devices on each kiln;
3. Conduct temperature monitoring to develop a kiln temperature profile for each kiln.

**Operation, Maintenance, and Monitoring Plan (OM&M Plan)**

Statesville Brick Company must develop an OM&M plan by December 28, 2023 in accordance with 63.8425(a). The OM&M plan must include, at a minimum, the following information:

1. Each process APCD to be monitored, the type of monitoring device to be used, and the operating parameters that will be monitored.

2. A monitoring schedule that specifies the frequency that the parameter values will be determined and recorded.
3. The limits for each parameter that represent continuous compliance with the emission limitations in 63.8405. The limits must be based on values of the monitored parameters recorded during performance tests.
4. Procedures for the proper operation and routine and long-term maintenance of each APCD, including a maintenance and inspection schedule that is consistent with the manufacturer's recommendations.
5. Procedures for installing the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions.
6. Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system.
7. Continuous monitoring system performance evaluation procedures and acceptance criteria.
8. Procedures for the proper operation and maintenance of monitoring equipment consistent with the requirements in 63.8450 and 63.8(c)(1), (3), (7), and (8).
9. Continuous monitoring system data quality assurance procedures consistent with the requirements in 63.8(d)(1) and (2). The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of the part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan in 63.8(d)(2) is revised, the owner or operator shall keep previous versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under 63.8(d)(2).
10. Continuous monitoring system recordkeeping and reporting procedures consistent with the requirements in 63.8485 and 63.8490.
11. Procedures for responding to operating parameter deviations.
12. Procedures for keeping records to document compliance.
13. If you operate an affected kiln and you plan to take the kiln control device out of service for routine maintenance, as specified in 63.8420(d), the procedures specified in paragraphs (b)(13)(i) and (ii) of this section apply.

Changes to the operating limits in the OMMP require a new performance test. Revision of the inspection and maintenance procedures in the OMMP do not require new performance tests.

**Performance Testing**

Each affected kiln is subject to performance testing under this MACT. The initial performance tests must be conducted within 180 days after the compliance date of December 28, 2023. Performance testing must then be conducted every five years after the date of the initial performance tests. Each performance test must be conducted in accordance with 63.7. The results of the performance test shall be used to to determine compliance with the emission limits and to establish operating limits (if maximum potential emissions are greater than the emission limits). The specific conditions are found in Table 4 of MACT Subpart JJJJJ as follows:

| Pollutant(s) | Testing Method(s) |
|---|---|
| HF, HCl, CL2 | Methods 1 (or1A), 2, 3, 4, 26A, and 320 |
| PM or non-HG HAP metals | Method 5 (PM only) or 29 |
| Hg | HCl-equivalent limit in Table 1 and emissions and production data from the HF/HCl/CL2 test |

**Continuous Monitoring System: Installation, Operation, and Maintenance Requirements**

The Permittee shall install, operate and maintain each continuous monitoring system (CMS) according to the OM&M plan and the requirements in 63.8450(a)(1) through (5). For each temperature measurement device, the Permittee shall meet the following requirements:

- Locate the measurement device in a position that provides a representative temperature.
- Use a measurement device with a minimum sensitivity of 1 percent of the temperature being measured.
- At least semiannually, conduct a calibration check.

**Notifications**

The Permittee shall submit all applicable notifications according to the following:

- The Permittee shall submit all of the notifications in 40 CFR 63.7(b) and (c), 63.8(f)(4), and 63.9 (b) through (e), (g)(1), and (h) that apply, by the dates specified.
- The Permittee shall submit an Initial Notification not later than 120 calendar days after the Permittee becomes subject to this subpart.
- The Permittee shall submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin.
- The Permittee shall submit a Notification of Compliance Status including the performance test results no later than 60 calendar days following the completion of the performance test required by Section 2.1 A.5.r.
- The Permittee shall submit a Notification of Compliance Status no later than 30 calendar days following the completion of a compliance demonstration required by Sections 2.1 A.5.ee through gg.
- Each Notification of Compliance Status must include the following information:
  (A) The requirements of 40 CFR 63.9(h)(2)(i); and
  (B) The operating limit parameter values established for each affected source with supporting documentation and a description of the procedure used to establish the values.

**Initial Compliance Requirements**

- The Permittee shall demonstrate initial compliance with each emission limitation and work practice standard according to the requirements of Table 5 of MACT Subpart JJJJJ.
- The Permittee shall establish each site-specific operating limit listed in Table 2 to this subpart.
- The Permittee shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration.

**Continuous Compliance Requirements**

- Except for periods of monitor malfunctions, associated repairs, and required quality assurance or control activities, the Permittee shall monitor continuously (or collect data at all required intervals) at all times that the affected source is operating. This includes periods of startup, shutdown, or malfunction when the affected source is operating.
- The Permittee shall perform visible emissions observations of the stack at the frequency specified in Section 2.1 A.5.mm using Method 22 of 40 CFR Part 60 Appendix and maintaining no visible emissions from the stack.
- The Permittee must maintain and inspect the burners and associated combustion controls and tune the specific burner type to optimize combustion no later than 36 calendar months after the previous tune up.
- The Permittee must maintain records of burner tune ups used to demonstrate compliance with the dioxin/furan work practice standard.
- The Permittee must submit a report of the most recent tune up for each tunnel kiln conducted with the compliance report.
- **VE testing.** The Permittee shall demonstrate continuous compliance with the operating limits in Table 2 of this subpart for visible emissions (VE) from tunnel kilns that are uncontrolled by monitoring VE at each kiln stack on a daily basis.
- **Alternative to VE testing.** In lieu of meeting the requirements of Section 2.1 A.5.mm, the Permittee may conduct a PM test at least once every year following the initial performance test, according to the procedures of Method 5 of 40 CFR part 60, appendix A-3.

**Recordkeeping Requirements**

The Permittee shall keep the following records:

- A copy of each notification and report submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted, according to the requirements of 40 CFR 63.10(b)(2).
- Records of performance tests according to the requirements of 40 CFR 63.10(b)(2)(viii).
- The Permittee shall keep records of the monitoring activities required to show continuous compliance with each emission limitation and work practice standard.
- Records of production rates on a fired-product basis.
- Records for any approved alternative monitoring or test procedures.

- Current copies of the OM&M plan, including any revisions, with records documenting conformance.
- Records of burner tune-ups used to comply with the dioxin/furan work practice standards for tunnel kilns.
- For periods of startup and shutdown, records shall be kept of the following information:
  - The date, time, and duration of each startup and/or shutdown period, recording the periods when the affected source was subject to the standard applicable to startup and shutdown.
  - For periods of startup, the kiln push rate and kiln exhaust temperature prior to the time the kiln temperature profile is attained.
  - For periods of shutdown, the kiln push rate and kiln exhaust temperature after the time the kiln temperature profile is no longer maintained.
- All site-specific parameters, temperature profiles, and procedures required to be established or developed according to the applicable work practice standards.
-

**Reporting**

- A semiannual report will be due each year on January 31 and July 31. The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in 63.8395 and ending on either June 30 or December 31. The first reporting period must be at least 6 months, but less than 12 months. In this case, since the compliance date is December 28, 2023, the first reporting period will end on June 30, 2023 and will be due on July 31, 2023. The compliance report must contain all information specified in 63.8485.
- Within 60 calendar days after the date of completing each performance test (as defined in 40 CFR 63.2) required by this subpart, the Permittee shall submit the results of the performance test following these procedures:
  - For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (*http://www.epa.gov/ttn/chief/ert/index.html*) at the time of the test, the results of the performance test shall be submitted to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (*http://cdx.epa.gov/*).) Performance test data must be submitted in a file format generated through the use of the EPA's ERT or an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site. If some of the performance test information being submitted is claimed as confidential business information (CBI), the Permittee shall submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.
  - For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the

PSD

Statesville Brick Company is a PSD minor source located in Iredell County, which is in attainment for all promulgated NAAQS standards. This county is triggered for minor source baseline dates for PM10, SO2, and NOx. This renewal application does not consume or expand increments for any pollutant.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the 112(r) thresholds. No change with respect to 112(r) is anticipated under this permit renewal.

CAM

The CAM rule (40 CFR 64; 15A NCAC 02D .0614) applies to each pollutant specific emissions unit (PSEU) at facilities required to obtain a Title V permit that meets all three of the following criteria:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source (i.e., 100 tons per year for criteria pollutants or 10/25 tons per year for HAPs).

Statesville Brick Company has the potential to emit individual and total HAPs above major source thresholds, but no control devices are utilized to control the emissions. Control devices (cyclones; ID Nos. CD-SD-1 and CD-SD2) are used to control particulate matter emissions from the sawdust dryers (ID Nos. ES-SD1 and ES-SD2). However, the sawdust dryers do not have the uncontrolled potential to emit greater than the major source threshold of PM10 (100 tons per year) according to the T09 permit review. Therefore, CAM does not apply. This permit renewal does not change the facility's CAM status.

**7. Facility Wide Air Toxics**

On June 28, 2012, the North Carolina General Assembly passed air toxics reform legislation HB 952. The bill was signed by the governor and became law. Under the bill, any source that is covered under a MACT or Generally Achievable Control Technology (GACT) standard and any source covered under a 112(j) permit is exempt from regulation under the state air toxics rule, except in those circumstances when the Division of Air Quality's (DAQ) Director makes a written finding that emissions from such a source presents an unacceptable risk to public health (e.g., a Director's call).With this application, the facility requested that the toxics conditions be removed from the permit since the kilns will be subject to MACT Subpart JJJJJ. As part of the T09 permit review and toxics memo dated May 12, 2004, the DAQ conducted a TAP evaluation and demonstrated that all emission sources of TAPs present no unacceptable risk to human health (i.e., it was concluded that the modeling analysis demonstrated compliance with the AALs of all subject pollutants). The kilns were previously restricted to operating at 9.95 and 9.35 tons per hour, respectively, which is the maximum operating rate for each kiln. Since each kiln could operate at the maximum operating rate and remain in compliance with all AALs, and since the kilns will be subject to MACT Subpart JJJJJ, it is reasonable that the toxics emission limits and restrictions for the kilns (ID Nos. ES-K1 and ES-K2) be removed from the permit.

However, the kilns are not the only source of air toxics. The sawdust dryers also emit toxic air pollutants (TAPs) but are not affected sources under MACT Subpart JJJJJ. The facility requested in the permit application to have all toxic conditions removed from the permit, but the sawdust dryers will continue to be subject to State Air Toxics. Thus, the toxic emission limits and restrictions for the sawdust dryers (ID Nos. ES-SD1 and ES-SD2) listed in 02D .1100 will remain in the permit unchanged. Based on review of the facility's recent emission inventories, it is assumed that all TAPs emitted from the kilns are also emitted from the sawdust dryers, so the pollutants listed under 02Q .0711 will remain the same. The current limits that will remain in the permit for the sawdust dryers are as follows:

| Emission Source | Toxic Air Pollutant | Emission Limit |
|---|---|---|
| Sawdust Dryer (ID No. ES-SD1) | Arsenic<br>Benzene<br>Cadmium<br>Fluorides<br><br>Formaldehyde<br>Hydrogen Fluoride<br><br>Hydrogen Chloride<br>Manganese<br>Nickel | 1.38 pounds per year<br>36.74 pounds per year<br>1.44 pounds per year<br>0.96 pounds per hour<br>15.38 pounds per day<br>0.055 pounds per hour<br>1.6 pounds per hour<br>25.7 pounds per day<br>1.4 pounds per hour<br>0.063 pounds per day<br>0.005 pounds per day |

| | | |
|---|---|---|
| Sawdust dryer (ID No. ES-SD2) | Arsenic<br>Benzene<br>Cadmium<br>Fluorides<br><br>Formaldehyde<br>Hydrogen Fluoride<br><br>Hydrogen Chloride<br>Manganese<br>Nickel | 1.17 pounds per year<br>31.19 pounds per year<br>1.23 pounds per year<br>0.82 pounds per hour<br>19.6 pounds per day<br>0.05 pounds per hour<br>1.36 pounds per hour<br>32.73 pounds per day<br>1.19 pounds per hour<br>0.08 pounds per day<br>0.0057 pounds per day |

| Pollutant | CAS No. | Carcinogens (lb/yr) | Chronic Toxicant (lb/day) | Acute Systemic Toxicants (lb/hr) | Acute Irritants (lb/hr) |
|---|---|---|---|---|---|
| Acrylonitrile | 107-13-1 | 10 | | | |
| Beryllium | 7440-41-7 | 0.28 | | | |
| Carbon disulfide | 75-15-0 | | 3.9 | | |
| Carbon tetrachloride | 56-23-5 | 460 | | | |
| Chloroform | 67-66-3 | 290 | | | |
| Soluble chromate compounds, as chromium (VI) equivalent | | | 0.013 | | |
| Cresol | 1319-77-3 | | | 0.56 | |
| Di(2-ethylhexyl)phthalate | 117-81-7 | | 0.63 | | |
| Mercury, aryl and inorganic compounds | | | 0.013 | | |
| Methyl chloroform | 71-55-6 | | 250 | | 64 |
| Methylene chloride | 75-09-2 | 1,600 | | | |
| Methyl ethyl ketone | 78-93-3 | | 78 | | 22.4 |
| Perchloroethylene | 127-18-4 | 13,000 | | | |
| Phenol | 108-95-2 | | | 0.24 | |
| Styrene | 100-42-5 | | | 2.7 | |
| Toluene | 108-88-3 | | 98 | | 14.4 |
| Trichlorofluoromethane | 75-35-4 | | | | 140 |
| Xylene | 1330-20-7 | | 57 | | 16.4 |

The sawdust dryers will still be restricted to operating at a drying rate of no more than 3.75 tons per hour, each. The facility will also still have a quarterly reporting requirement of the highest sawdust dryer drying rate for each calendar quarter.

**8. Facility Emissions Review**

The facility-wide potential emissions do not change under this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the years 2017 through 2021 are provided in the header of this permit review.

**9. Compliance Status**

DAQ has reviewed the compliance status of Statesville Brick Company. During the most recent inspection, conducted on January 26, 2022 by Jim VanWormer, previously of MRO, the facility appeared to be in compliance with all applicable requirements. Further, the facility has had no air quality violations within the last five years. The facility's Annual Compliance Certification was received on January 24, 2022 and indicated compliance with all applicable requirements in 2021.

**10. Public Notice/EPA and Affected State(s) Review**

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA.

**11. Other Regulatory Considerations**

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A permit fee is NOT required for this renewal application.

**12. Recommendations**

The permit renewal application for Statesville Brick Company located in Statesville, Iredell County, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 02493T12 after completion of public participation and EPA's review period.

The comments received from Mr. Dale Overcash are as follows:

Comment 1

In the table of applicable regulations in Section 2.1 A, there is a partial list of the emission limits for the Brick MACT. Due to the expansive list and various options for complying with the Brick MACT, maybe this Table should only include "See Section 2.1 A.5" for all MACT pollutants.

**DAQ Response:** The table has been edited to include a complete list of emission limits for the Brick MACT.

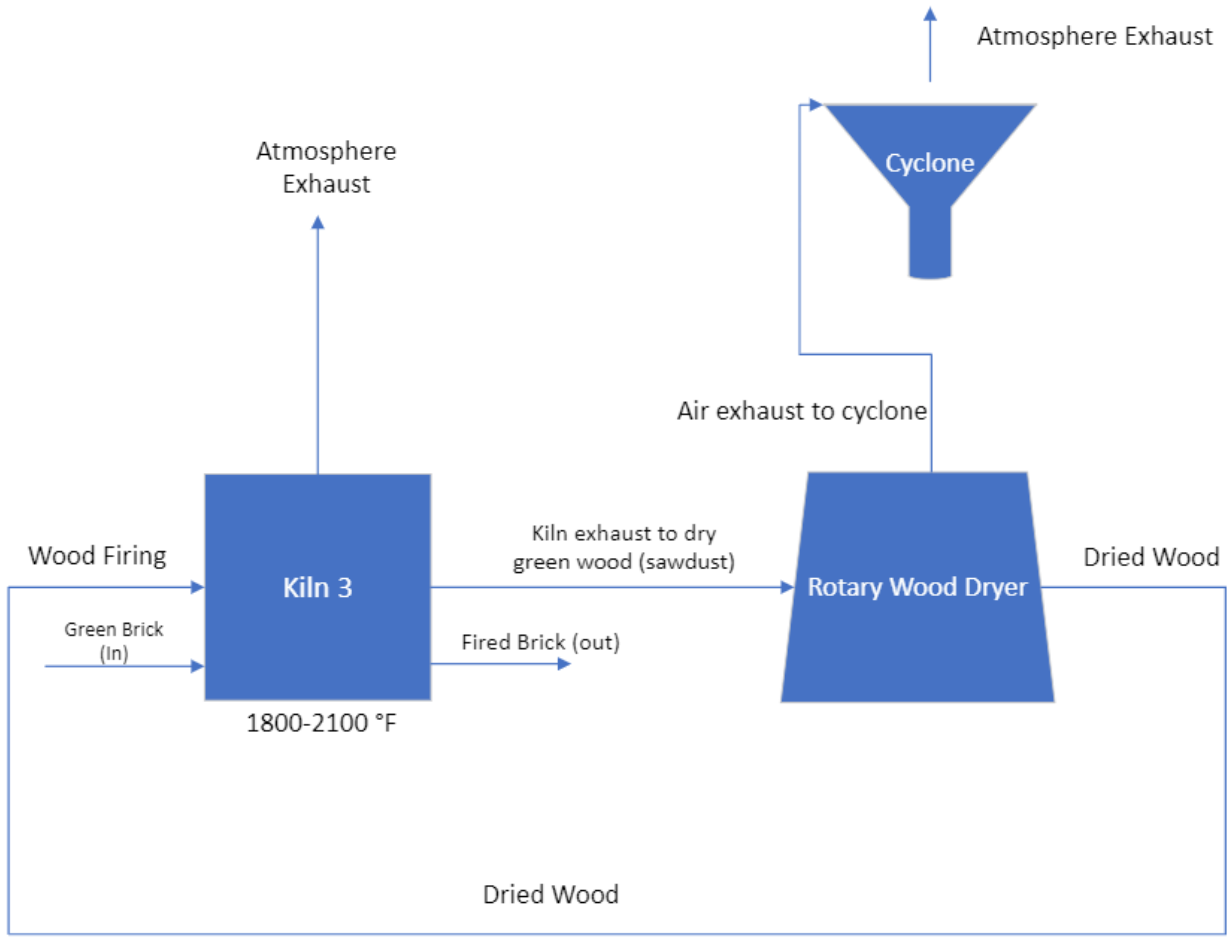
Comment 2

Permit Condition 2.1 A.5.n. needs the following correction: Condition n.iii. needs to be amended to read "0.0021 grains per dry standard cubic foot at 17% $O_2$."

**DAQ Response:** Agreed with comment. The emission limit has been updated to the requested units.

Comment 3

Please review the following diagram.




As you review the above diagram, you can see that the exhaust from the kiln goes two ways. A part of the exhaust is vented directly to the atmosphere and the remainder of the exhaust is sent to the rotary wood dryer (or sawdust dryer) where green wood is dried for fuel firing in the kiln. The exhaust from this wood dryer which originated in the kiln is then vented through a cyclone to the atmosphere.

In Table 1 of the Brick MACT, the small kiln is defined as follows:

> 3. Existing small tunnel kiln (design capacity <10 tph of fired product), including all process streams

Here is the definition of Tunnel Kiln.

> *Tunnel kiln* means any continuous kiln that is used to fire BSCP. Some tunnel kilns have two process streams, including a process stream that exhausts directly to the atmosphere or to an APCD, and a process stream in which the kiln exhaust is ducted to a sawdust dryer where it is used to dry sawdust before being emitted to the atmosphere.

As such, we conclude that the sawdust dryer must also comply with the Brick MACT emission limits. The brick kiln and the accompanying sawdust dryer for the brick kiln must meet the Table 1 limits.

**DAQ Response:** 40 CFR Part 63, Subpart JJJJJ (63.8390(b)) specifies affected sources as "all tunnel kilns at a BSCP manufacturing facility". 63.8515 defines tunnel kiln as "any continuous kiln that is used to fire BSCP" and continues to state that "some tunnel kilns have two process streams, including a process stream that exhausts directly to the atmosphere or to an APCD, and a process stream in which the kiln exhaust is ducted to a sawdust dryer where it is used to dry sawdust before being emitted to the atmosphere". All kiln process streams, including the portion of a process stream that goes to a sawdust dryer, are subject to the emission limits in the MACT. However, the sawdust dryers themselves are not listed as affected sources.

Comment 4

We interpret that the no VE limit only applies to the kiln stack. The term kiln stack is used six (6) times in the VE portion of the rule. This does make sense as the true VE from the kiln itself would only be the part of the exhaust the is vented directly from the kiln to the atmosphere. There is also no reference to a process stream in the VE requirements.

**DAQ Response:** Agreed with comment. MACT Subpart JJJJJ does not specifically limit visible emissions from all process stream stacks; MACT Subpart JJJJJ only limits visible emissions from each kiln stack.

Comment 5

The air toxics from the sawdust dryer originate from the combustion and brick vitrification within the kiln. The sawdust is only dried in the dryer. As such since the kiln and its process stream (the sawdust dryer) are subject to the Brick MACT, the air toxics should be removed from Condition Nos. 2.1 B.3. and 4. of the draft permit.

**DAQ Response:** As stated previously, the sawdust dryers are not listed as affected sources in 40 CFR Part 63, Subpart JJJJJ. Therefore, the sawdust dryers will not be considered subject to this rule, so the toxics limits listed in the permit will remain for the sawdust dryers.

Additional Comments Received on May 3, 2023

I am attaching the Federal Register for the proposed rule and the preamble to the proposed rule from 12/18/2014. The attached PDF is searchable. If you search on "sawdust" you will find a discussion at the bottom of page 75627 and the top of page 75628 regarding sawdust fired kilns and sawdust dryers. On page 75628, EPA concludes that the sawdust kiln and the sawdust dryer are subject to the Brick NESHAP.

If you search through the attached PDF, you will find that EPA was requesting comments on a subcategorization for sawdust fired kilns. If you go to the Federal Register for the final rule (10/26/15), you will find that there was no such subcategorization.

The final rule is not very clear on this subject. If you look at my original email below, you will see where I provided from Table 1 of the Brick MACT that a small kiln includes all process streams (*i.e.*, in this case, the brick kiln plus the sawdust dryer) and both were included in the tunnel kiln definition. However, EPA did not clearly delineate that both the kiln and the sawdust dryer are subject to the emission limits.

You are correct that EPA says that dryers are not subject to the rule. Once again, the language is not clear for anyone that does not understand the brick manufacturing process. For every brick kiln (also known as a tunnel kiln) there is a preceding tunnel dryer. Tunnel dryers operate at much lower temperatures than kilns and thus HAPs are not emitted from the tunnel dryers. These "tunnel" dryers are exempt from the Brick MACT. There is a simplified brick manufacturing process description in AP-42, Section 11.3.

If you have any additional questions, please advise.

**DAQ Response:** As discussed above, 40 CFR Part 63, Subpart JJJJJ does not specify the sawdust dryers as affected sources. Therefore, the sawdust dryers will not be considered subject to Subpart JJJJJ.