

FINAL DRAFT/PROPOSED CAAPP PERMIT
Radiac Abrasives
I.D. No.: 121045AAF
Application No.: 95090063
December 11, 2000

² Except as provided in condition 8.7 of this permit.

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1.0 SOURCE IDENTIFICATION

1.1 Source

Radiac Abrasives
1015 South College Avenue
Salem, Illinois 62881
618/548-4200

I.D. No.: 121045AAF
Standard Industrial Classification: 3291, Abrasive Products

1.2 Owner/Parent Company

Radiac Abrasives
80 Field Point Road
Greenwich, Connecticut 06830

1.3 Operator

Radiac Abrasives
1015 South College Avenue
Salem, Illinois 62881

Dan Paddick, Manufacturing Engineer
618/548-4200

1.4 General Source Description

Radiac Abrasives is located at 1015 South College Avenue in Salem.

The source manufactures grinding wheels for commercial and noncommercial applications. The manufacturing process is comprised of raw materials receiving and inspection, abrasive grain mixing (dry type vitreous, wet type vitreous, and organic mixes), mix drying, wheel molding, wheel drying, wheel bonding, wheel firing, finishing and shipping.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollution Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27717
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
°F	degrees Fahrenheit
HAP	Hazardous Air Pollutants
hr	hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
kg	kilogram
lb	pound
Mft ³	Million cubic feet
Mg	Metric Tonnes or Megagrams
mmBtu	Million British thermal units
mo	month
MW	Megawatts
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
RMP	Risk Management Plan
SIC	Standard Industrial Classification
SO ₂	Sulfur Dioxide
T	Ton
T1	Title I - identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New - identifies Title I conditions that are being established in this permit

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T1R	Title I Revised - identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material
Wt	Weight
yr	year

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

- 3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

Resin Storage Bin
Urea Formaldehyde Storage Tank
Sulfur Melting Pots

- 3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

None

- 3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Furnaces used for melting metals, other than beryllium, with a brim full capacity of less than 450 cubic inches by volume [35 IAC 201.210(a)(6)].

Die casting machines where a metal or plastic is formed under pressure in a die [35 IAC 201.210(a)(12)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

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- 3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.
- 3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
Kiln #1 (401)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #1 (401), 3.0 mmBtu/hr)	1966	None
Kiln #2 (402)	Bickley Model #5200 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #2 (402), 4.0 mmBtu/hr)	1966	None
Kiln #3 (409)	Bickley Model #8710 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #3 (409), 4.0 mmBtu/hr)	October, 1974	None
Kiln #4 (403)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #4 (403), 6.0 mmBtu/hr)	May 1, 1980	None
Kiln #5 (404)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #5 (404), 3.0 mmBtu/hr)	September 28, 1981	None
Kiln #6 (405)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #6 (405), 3.0 mmBtu/hr)	September 28, 1981	None
Kiln #7 (406)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #7 (406), 3.0 mmBtu/hr)	September 28, 1981	None
Kiln #8 (407)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #8 (407), 3.0 mmBtu/hr)	July 15, 1983	None
Kiln #9 (408)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #9 (408), 3.0 mmBtu/hr)	July 15, 1983	None

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Kiln #10 (410)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #10 (410), 3.0 mmBtu/hr)	July 15, 1983	None
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Emission Unit	Description	Date Constructed	Emission Control Equipment
Kiln #11 (411)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #11 (411), 3.0 mmBtu/hr)	December 1, 1986	None
Kiln #12 (412)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #12 (412), 3.0 mmBtu/hr)	December 1, 1986	None
Kiln #13 (414)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #13 (414), 3.0 mmBtu/hr)	December 1, 1986	None
Kiln #14 (415)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #14 (415), 3.0 mmBtu/hr)	June 13, 1988	None
Kiln #15 (416)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #15 (416), 3.0 mmBtu/hr)	June 13, 1988	None
Kiln #16 (417)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #16 (417), 3.0 mmBtu/hr)	June 13, 1988	None
Kiln #17 (418)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #17 (418), 3.0 mmBtu/hr)	September 1, 1994	None
Kiln #18 (419)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #18 (419), 3.0 mmBtu/hr)	March, 1997	None
Kiln #19 (420)	Swindell Dresser Natural	June, 1998	Thermal

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	Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #19 (420), 15.0 mmBtu/hr)		Oxidizer TO 1
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Emission Unit	Description	Date Constructed	Emission Control Equipment
Oven #1 (452)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #1 (452), 0.5 mmBtu/hr)	1966	None
Oven #2 (453)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #2 (453), 0.5 mmBtu/hr)	1966	None
Oven #3 (451)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #3 (451), 1.0 mmBtu/hr)	1966	None
Oven #4 (455)	Beatie Natural Gas-Fired Resinoid Product Curing Oven (Oven #4 (455), 0.4 mmBtu/hr)	1966	None
Oven #5 (468)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #5 (468), 0.5 mmBtu/hr)	August 1, 1979	None
Oven #6 (467)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #6 (467), 0.5 mmBtu/hr)	1966	None
Oven #9 (456)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #9 (456), 1.0 mmBtu/hr)	August 1, 1979	None
Oven #10 (461)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #10 (461), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #11 (462)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #11 (462), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #12 (463)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #12 (463), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #13 (464)	Hedin Natural Gas-Fired	September 28,	None

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	Resinoid Product Curing Oven (Oven #13 (464), 0.5 mmBtu/hr)	1981	
Oven #14 (465)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #14 (465), 0.5 mmBtu/hr)	September 28, 1981	None
Emission Unit	Description	Date Constructed	Emission Control Equipment
Oven #15 (466)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #15 (466), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #17 (443/444)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #17 (443/444), 0.8 mmBtu/hr)	December 1, 1986	None
Oven #18 (445/446)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #18 (445/446), 0.8 mmBtu/hr)	December 1, 1986	None
Oven #19 (447/448)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #19 (447/448), 0.8 mmBtu/hr)	December 1, 1986	None
Oven #23 (439/440)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #23 (439/440), 0.8 mmBtu/hr)	June 13, 1988	None

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of PM and HAP emissions.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

- a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

Compliance with this requirement is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

- b. The emission of smoke or other particulate matter from any emission unit shall not exceed an opacity of greater than 30 percent, except that an opacity of greater than 30 percent but less than 60 percent shall be allowed for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 meter (1000 feet) radius from the center point of any other such emission unit owned or operated by the Permittee, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period, pursuant to 35 IAC 212.123 and 212.124.

5.2.3 The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting

substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.2.4 Risk Management Plan

Should this stationary source, as defined in 40 CFR Section 68.3, become subject to the Accidental Release Prevention regulations in 40 CFR Part 68, then the owner or operator shall submit [40 CFR 68.215(a)(2)(i) and (ii)]:

- a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or
 - b. A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan (RMP), as part of the annual compliance certification required by 40 CFR Part 70 or 71.
- 5.2.5 a. Should this stationary source become subject to a regulation under 40 CFR Parts 60, 61, or 63, or 35 IAC after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.

- b. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable requirements of any potentially applicable regulation which was promulgated after the date issued of this permit.

5.2.6 Episode Action Plan

- a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.
- b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared.
- c. If a change occurs at the source which requires a revision of the plan (e.g., operational change, change in the source contact person), a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA.
- d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:
 - i. Illinois EPA, Compliance Section; and
 - ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control; or
 - iii. For sources located within the city of Chicago: Chicago Department of Environmental Control.

5.3 Non-Applicability of Regulations of Concern

5.3.1 The dryers, ovens, and kilns at this source are not subject to the NSPS for Calciners and Dryers in Mineral Industries, 40 CFR 60 Subparts A and UUU, because this source is not a mineral processing plant.

5.3.2 This permit is issued based on the source not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the source does not have a pollutant-specific emissions unit that uses an add-on control device to achieve compliance with an emission limitation or standard.

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.5.1) are set for the purpose of establishing fees and are not federally enforceable.

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Nitrogen Oxides (NO _x)	40.68
Particulate Matter (PM)	111.81
Sulfur Dioxide (SO ₂)	0.40
Volatile Organic Material (VOM)	0.99
HAP, not included in VOM or PM	111.0
TOTAL	264.88

5.5.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.5.3 Other Source-Wide Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 Emission Records

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions) of this permit.

5.6.2 Records for HAP Emissions

The Permittee shall maintain records of the following items for the curing ovens at the source to quantify annual HAP emissions, so as to demonstrate compliance with the annual emission limits in Condition 5.5:

a. General Records:

- i. The name and identification of each HAP material used in production at the source (e.g., formaldehyde, phenol, etc.); and
- ii. The composition of HAP materials used in each product produced at the source, % by Wt.

- b. Records maintained on a monthly basis for the previous month:
 - i. The usage of each HAP material, lb/mo and ton/yr; and
 - ii. Monthly and aggregate annual emissions of each individual HAP based on HAP usage at the source, with supporting calculations.

5.6.3 Records for Natural Gas Usage and Emissions

The Permittee shall maintain records of the following items for the units which combust natural gas so as to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

- a. Natural gas usage of the source, Mft³/mo and Mft³/yr; and
- b. Records of the monthly and aggregate annual NO_x, PM, SO₂, and VOM emissions from the combustion of natural gas at the source shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

5.6.4 Retention and Availability of Records

- a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the source with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.7.3 Annual Reporting of HAP Emissions

The Permittee shall submit an annual report to the Illinois EPA, Compliance Section, on HAP emissions from the source, including the following information, so as to demonstrate whether the source is being operated as a non-major source of HAP emissions. This report shall be submitted with the Annual Emissions Report (Condition 9.7).

- a. The annual emissions of individual HAPs for each month of the previous calendar year sufficient to demonstrate compliance with the 12 month running total of Condition 5.5.2, tons/year, (e.g., for the month of January, the emissions from February of the preceding calendar year through January; for the month of February, the emissions from March of the preceding calendar year through February; 12 months in all); and
- b. The total annual emissions of all HAPs combined for each month of the previous calendar year sufficient to demonstrate compliance with the 12 month running total of Condition 5.5.2, tons/year, (e.g., for the month of January, the emissions from February of the preceding calendar year through January; for the month of February, the emissions from March of the preceding calendar year through February; 12 months in all).

5.8 General Operational Flexibility/Anticipated Operating Scenarios

N/A

5.9 General Compliance Procedures

5.9.1 General Procedures for Calculating HAP Emissions

Compliance with the source-wide emission limits specified in Condition 5.5 shall be based on the recordkeeping and reporting requirements of Conditions 5.6 and 5.7 and the use of USEPA approved emissions estimating guidance.

To determine compliance with Condition 5.5.1, HAP emissions from the curing ovens at the source shall be calculated based on the following:

$$\text{HAP Emissions (lb)} = \text{HAP Material Usage (lb)}$$

5.9.2 General Procedures for Calculating Fuel Combustion Emissions

To determine compliance with Condition 5.5.1, emissions from the combustion of natural gas at the source shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lb/Mft³)</u>
NO _x	100
PM	7.6
SO ₂	0.6
VOM	5.5

These are the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998.

$$\text{Natural Gas Fuel Combustion Emissions (lb)} = (\text{Natural Gas Consumed, Mft}^3) \times (\text{The Appropriate Emission Factor, lb/Mft}^3)$$

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6.0 NOT APPLICABLE TO THIS PERMIT

7.0 UNIT SPECIFIC CONDITIONS

7.1 Units Ovens #1 - #4, #6: Resinoid Product Curing Ovens
Constructed Prior to April 14, 1972

7.1.1 Description

Organic bonded wheels are placed in natural gas-fired ovens after molding for curing with a controlled temperature cycle. A cycle is typically 24 to 72 hours long with high temperatures of approximately 300 - 400°F. During the cycle the thermal set of the bond will occur creating bond posts between the abrasive grains. Ovens #1 through #4 and #6 were constructed prior to April 14, 1972, which means they are classified as existing process emission units.

7.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Oven #1 (452)	Gehrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #1 (452), 0.5 mmBtu/hr)	None
Oven #2 (453)	Gehrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #2 (453), 0.5 mmBtu/hr)	None
Oven #3 (451)	Gehrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #3 (451), 1.0 mmBtu/hr)	None
Oven #4 (455)	Beatie Natural Gas-Fired Resinoid Product Curing Oven (Oven #4 (455), 0.4 mmBtu/hr)	None
Oven #6 (467)	Gehrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #6 (467), 0.5 mmBtu/hr)	None

7.1.3 Applicability Provisions and Applicable Regulations

- a. Ovens #1 through #4 and #6 are "affected ovens" for the purpose of these unit-specific conditions.
- b. Each affected oven is subject to the emission limits identified in Condition 5.2.2.

- c. The affected ovens are subject to 35 IAC 212.322(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (see also Attachment 2) [35 IAC 212.322(a)].

- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].
- e. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in 35 IAC 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

7.1.4 Non-Applicability of Regulations of Concern

- a. The affected ovens are not subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Dc, because construction, modification, or reconstruction of each affected oven was commenced prior to June 9, 1989, the maximum design heat input capacity is less than 2.9 MW (10 million Btu/hr), and the affected ovens are not used to produce steam or to heat water or any other heat transfer medium.
- b. The affected ovens are not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM₁₀, as identified in 35 IAC 212.324(a)(1).
- c. The affected ovens are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion

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emission units, because the actual heat input of each affected oven is less than 2.9 MW (10 mmBtu/hr) and the affected ovens are not by definition fuel combustion emission units.

- d. The affected ovens are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each affected oven is less than 73.2 MW (250 mmBtu/hr) and the affected ovens are not by definition fuel combustion emission units.

7.1.5 Operational and Production Limits and Work Practices

The affected ovens shall only be operated with natural gas as the fuel.

7.1.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.1.7 Testing Requirements

None

7.1.8 Monitoring Requirements

None

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected oven to demonstrate compliance with Conditions 5.5.1 and 7.1.3, pursuant to Section 39.5(7)(b) of the Act:

- a. The weight of raw materials introduced to each affected oven, lb/mo and ton/yr;
- b. The operating schedule of the affected ovens; and
- c. Monthly and aggregate annual PM and VOM emissions from the affected ovens shall be maintained, based on the operating schedule and the emission rates determined by stack testing, with supporting data.

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected oven with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

The use of any fuel other than the fuel specified in Condition 7.1.5 within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.1.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 7.1.9 and the emission factors and formulas listed below:

- a. Compliance with Conditions 7.1.3(b), (c), and (d) is assumed by the work-practices inherent in operation of natural gas-fired ovens, so that no compliance procedures are set in this permit addressing these regulations.
- b. To determine compliance with Condition 5.5.1, emissions of PM and VOM from each affected oven shall be determined based on hourly emission rates of 0.03 lb/hr and 0.21 lb/hr, respectively, which are the emission rates determined from the most recent stack testing.

7.2 Units Ovens 5, 9-15, 17-19, & 23: Resinoid Product Curing Ovens
 Constructed on or After
 April 14, 1972

7.2.1 Description

Organic bonded wheels are placed in natural gas-fired ovens after molding for curing with a controlled temperature cycle. A cycle is typically 24 to 72 hours long with high temperatures of approximately 300 - 400°F. During the cycle the thermal set of the bond will occur creating bond posts between the abrasive grains. Ovens #5, #9 through #15, #17 through #19, and #23 were constructed on or after April 14, 1972, which means they are classified as new process emission units.

7.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Oven #5 (468)	Gehrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #5 (468), 0.5 mmBtu/hr)	None
Oven #9 (456)	Gehrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #9 (456), 1.0 mmBtu/hr)	None
Oven #10 (461)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #10 (461), 0.5 mmBtu/hr)	None
Oven #11 (462)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #11 (462), 0.5 mmBtu/hr)	None
Oven #12 (463)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #12 (463), 0.5 mmBtu/hr)	None
Oven #13 (464)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #13 (464), 0.5 mmBtu/hr)	None
Oven #14 (465)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #14 (465), 0.5 mmBtu/hr)	None
Oven #15 (466)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #15 (466), 0.5 mmBtu/hr)	None

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Oven #17 (443/444)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #17 (443/444), 0.8 mmBtu/hr)	None
Oven #18 (445/446)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #18 (445/446), 0.8 mmBtu/hr)	None

Emission Unit	Description	Emission Control Equipment
Oven #19 (447/448)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #19 (447/448), 0.8 mmBtu/hr)	None
Oven #23 (439/440)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #23 (439/440), 0.8 mmBtu/hr)	None

7.2.3 Applicability Provisions and Applicable Regulations

- a. Ovens #5, #9 through #15, #17 through #19, and #23 are "affected ovens" for the purpose of these unit-specific conditions.
- b. Each affected oven is subject to the emission limits identified in Condition 5.2.2.
- c. The affected ovens are subject to 35 IAC 212.321(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321(a)].

- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].
- e. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in 35 IAC 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

7.2.4 Non-Applicability of Regulations of Concern

- a. The affected ovens are not subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Dc, because construction, modification, or reconstruction of each affected oven was commenced prior to June 9, 1989, the maximum design heat input capacity is less than 2.9 MW (10 million Btu/hr), and the affected ovens are not used to produce steam or to heat water or any other heat transfer medium.
- b. The affected ovens are not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM₁₀, as identified in 35 IAC 212.324(a)(1).
- c. The affected ovens are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the actual heat input of each affected oven is less than 2.9 MW (10 mmBtu/hr) and the affected ovens are not by definition fuel combustion emission units.
- d. The affected ovens are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each affected oven is less than 73.2 MW (250 mmBtu/hr) and the affected ovens are not by definition fuel combustion emission units.

7.2.5 Operational and Production Limits and Work Practices

The affected ovens shall only be operated with natural gas as the fuel.

7.2.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected ovens are subject to the following:

- a. i. This permit is issued based upon a minimal hourly emission rate and negligible annual emissions (less than 0.1 ton/year) of

particulate matter, volatile organic material, carbon monoxide, sulfur dioxide, and nitrogen oxides from product curing ovens #17, #18, and #19.

- ii. The above limitations contain revisions to previously issued Permit 86090028. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, Ovens #16, #20, and #21 have been permanently shut down and removed from this source [T1R].
- b. i. Emissions of nitrogen oxides from resinoid coating ovens #23 shall not exceed 0.7 ton/year. The limit for nitrogen oxides is based on standard emission factors, firing of natural gas at the maximum firing rate (0.8 mmBtu/hr), and the maximum hours of operation (8,760 hr/yr).
- ii. The above limitations contain revisions to previously issued Permit 88060009. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application.

The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, Oven #22 has been permanently shut down and removed from this source and the hours of operation for Oven #23 have been increased from 8,400 hours/year to 8,760 hours/year [T1R].

- c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

7.2.7 Testing Requirements

None

7.2.8 Monitoring Requirements

None

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected oven to demonstrate compliance with Conditions 5.5.1, 7.2.3, and 7.2.6, pursuant to Section 39.5(7)(b) of the Act:

- a. Natural gas usage of Ovens #17, #18, #19, and #23, Mft³/mo and Mft³/yr;
- b. The weight of raw materials introduced to each

affected oven, lb/mo and ton/yr;

- c. The operating schedule of the affected ovens;
- d. Monthly and aggregate annual PM and VOM emissions from the affected ovens shall be maintained, based on the operating schedule and the emission rates determined by stack testing, with supporting data; and
- e. Monthly and aggregate annual CO, NO_x, and SO₂ emissions from Ovens #17, #18, #19, and #23 shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

7.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected oven with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. The use of any fuel other than the fuel specified in Condition 7.2.5 within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.
- b. Emissions of CO, NO_x, PM, VOM, and/or SO₂ from Ovens #17, #18, #19, and/or #23 in excess of the limits in Condition 7.2.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.2.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 7.2.9 and the

emission factors and formulas listed below:

- a. Compliance with Conditions 7.2.3(b), (c), and (d) is assumed by the work-practices inherent in operation of natural gas-fired dryer, so that no compliance procedures are set in this permit addressing this regulation.
- b. To determine compliance with Conditions 5.5.1 and 7.2.6(a), emissions of PM and VOM from each affected oven shall be determined based on hourly emission rates of 0.03 lb/hr and 0.21 lb/hr, respectively, which are the emission rates determined from the most recent stack testing.
- c. To determine compliance with Conditions 5.5.1 and 7.2.6, emissions from the combustion of natural gas in Ovens #17, #18, #19, and #23 shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lb/Mft³)</u>
CO	84
NO _x	100
SO ₂	0.6

These are the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998.

Natural Gas Combustion Emissions (lb) = (Natural Gas Consumed, Mft³) x (The Appropriate Emission Factor, lb/Mft³)

7.3 Units Kilns #1 and #2: Truck Intermittent Kilns Constructed Prior to April 14, 1972

7.3.1 Description

Vitreous bonded wheels are placed in a kiln and fired with a controlled temperature cycle. A cycle is typically 48 to 138 hours long with a high temperature of between 1,910 and 2,335°F. During this cycle any organic material is removed and the bond is melted to form vitreous bond posts between abrasive grains. Kilns #1 and #2 were constructed prior to April 14, 1972, which means they are classified as existing process emission units. Because the configurations of the burners of each kiln are different, these kilns are not considered to be "similar" for purposes of 35 IAC Part 212 Subpart K.

7.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Kiln #1 (401)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #1 (401), 3.0 mmBtu/hr)	None
Kiln #2 (402)	Bickley Model #5200 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #2 (402), 4.0 mmBtu/hr)	None

7.3.3 Applicability Provisions and Applicable Regulations

- a. Truck Intermittent Kilns #1 and #2 are "affected kilns" for the purpose of these unit-specific conditions.
- b. Each affected kiln is subject to the emission limits identified in Condition 5.2.2.
- c. The affected kilns are subject to 35 IAC 212.322(a), which provides that:
 - i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit

for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (see also Attachment 2) [35 IAC 212.322(a)].

- ii. The expected process weight rates for each affected kiln and the allowable PM emission rates for each affected kiln set by 35 IAC 212.322 are as follows:

<u>Emission Unit(s)</u>	Process Weight Rate <u>(T/hr)</u>	Allowable PM Emissions <u>(lb/hr)</u>
Kiln #1 (401)	149	0.72
Kiln #2 (402)	260	1.05

- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].
- e. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in 35 IAC 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

7.3.4 Non-Applicability of Regulations of Concern

- a. The affected kilns are not subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Dc, because construction, modification, or reconstruction of each affected kiln was commenced prior to June 9, 1989, the maximum design heat input capacity is less than 2.9 MW (10 million Btu/hr), and the affected kilns are not used to produce steam or to heat water or any other heat transfer medium.
- b. The affected kilns are not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the

source is not located in a non-attainment area for PM₁₀, as identified in 35 IAC 212.324(a)(1).

- c. The affected kilns are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the actual heat input of each affected kiln is less than 2.9 MW (10 mmBtu/hr) and the affected kilns are not by definition fuel combustion emission units.
- d. The affected kilns are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each affected kiln is less than 73.2 MW (250 mmBtu/hr) and the affected kilns are not by definition fuel combustion emission units.

7.3.5 Operational and Production Limits and Work Practices

The affected kilns shall only be operated with natural gas as the fuel.

7.3.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.3.7 Testing Requirements

Pursuant to 35 IAC 212.110 and Section 39.5(7)(b) of the Act, testing for PM emissions shall be performed as follows:

- a. Measurement of particulate matter emissions from stationary emission units subject to 35 IAC Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E [35 IAC 212.110(a)].
- b. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4 [35 IAC 212.110(b)].
- c. Upon a written notification by the Illinois EPA, the

owner or operator of a particulate matter emission unit subject to 35 IAC Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA [35 IAC 212.110(c)].

7.3.8 Monitoring Requirements

None

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected kiln to demonstrate compliance with Conditions 5.5.1 and 7.3.3, pursuant to Section 39.5(7)(b) of the Act:

- a. Pursuant to 35 IAC 212.110(e) and Section 39.5(7)(e) of the Act, the owner or operator of an emission unit subject 35 IAC Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed and shall include the following:
 - i. The date, place and time of sampling or measurements;
 - ii. The date(s) analyses were performed;
 - iii. The company or entity that performed the analyses;
 - iv. The analytical techniques or methods used;
 - v. The results of such analyses; and
 - vi. The operating conditions as existing at the time of sampling or measurement.
- b. The weight of raw materials introduced to each affected kiln, lb/mo and ton/yr;

- c. The operating schedule of the affected kilns; and
- d. Monthly and aggregate annual PM and VOM emissions from the affected kilns shall be maintained, based on the operating schedule and the emission rates determined by stack testing, with supporting data.

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected kiln with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. A person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from Condition 7.3.7 (see also 35 IAC 212.110) that will be used [35 IAC 212.110(d)].
- b. The use of any fuel other than the fuel specified in Condition 7.3.5 within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.3.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 7.3.9 and the emission factors and formulas listed below:

- a. Compliance with Conditions 7.3.3(b) and (d) is assumed

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by the work-practices inherent in operation of natural gas-fired kilns, so that no compliance procedures are set in this permit addressing these regulations.

- b. To determine compliance with Condition 5.5.1, emissions of PM and VOM from each affected kiln shall be determined based on hourly emission rates of 0.01 lb/hr and 0.69 lb/hr, respectively, which are the emission rates determined from the most recent stack testing.

7.4 Units Kilns #3 - #18: Uncontrolled Truck Intermittent Kilns
Constructed on or After April 14, 1972

7.4.1 Description

Vitreous bonded wheels are placed in a kiln and fired with a controlled temperature cycle. A cycle is typically 48 to 138 hours long with a high temperature of between 1,910 and 2,335°F. During this cycle any organic material is removed and the bond is melted to form vitreous bond posts between abrasive grains. Kilns #3 through #18 were constructed on or after April 14, 1972, which means they are classified as new process emission units. Because the configurations of the burners of each kiln may differ, not all of these kilns are considered to be "similar" for purposes of 35 IAC Part 212 Subpart K.

7.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Kiln #3 (409)	Bickley Model #8710 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #3 (409), 4.0 mmBtu/hr)	None
Kiln #4 (403)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #4 (403), 6.0 mmBtu/hr)	None
Kiln #5 (404)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #5 (404), 3.0 mmBtu/hr)	None
Kiln #6 (405)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #6 (405), 3.0 mmBtu/hr)	None
Kiln #7 (406)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #7 (406), 3.0 mmBtu/hr)	None
Kiln #8 (407)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #8 (407), 3.0 mmBtu/hr)	None
Kiln #9 (408)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #9 (408), 3.0 mmBtu/hr)	None

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Emission Unit	Description	Emission Control Equipment
Kiln #10 (410)	Boulton Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #10 (410), 3.0 mmBtu/hr)	None
Kiln #11 (411)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #11 (411), 3.0 mmBtu/hr)	None
Kiln #12 (412)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #12 (412), 3.0 mmBtu/hr)	None
Kiln #13 (414)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #13 (414), 3.0 mmBtu/hr)	None
Kiln #14 (415)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #14 (415), 3.0 mmBtu/hr)	None
Kiln #15 (416)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #15 (416), 3.0 mmBtu/hr)	None
Kiln #16 (417)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #16 (417), 3.0 mmBtu/hr)	None
Kiln #17 (418)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #17 (418), 3.0 mmBtu/hr)	None
Kiln #18 (419)	Bickley Model #5300 Natural Gas-Fired Vitrifified Product Kiln (Truck Intermittent Kiln #18 (419), 3.0 mmBtu/hr)	None

7.4.3 Applicability Provisions and Applicable Regulations

- a. Truck Intermittent Kilns #3 through #18 are "affected kilns" for the purpose of these unit-specific conditions.

- b. Each affected kiln is subject to the emission limits identified in Condition 5.2.2.
- c. The affected kilns are subject to 35 IAC 212.321(a), which provides that:
 - i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321(a)].
 - ii. The expected process weight rates for the affected kiln(s) and the allowable PM emission rates for the affected kiln(s) set by 35 IAC 212.321 are as follows:

<u>Emission Unit(s)</u>	<u>Process Weight Rate (T/hr)</u>	<u>Allowable PM Emissions (lb/hr)</u>
Kiln #3 (409)	800	1.56
Kiln #4 (403)	175	0.69
Kilns #5 (404), #6 (405), #7 (406), #8 (407), #9 (408), and #10 (410) (combined)	1,050	1.80
Kilns #11 (411), #12 (412), #13 (414), #14 (415), #15 (416), #16 (417), #17 (418), and #18 (419) (combined)	1,400	2.10

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- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].

- e. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in 35 IAC 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

7.4.4 Non-Applicability of Regulations of Concern

- a. The affected kilns are not subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Dc, because the maximum design heat input capacity of each affected kiln is less than 2.9 MW (10 million Btu/hr), and the affected kilns are not used to produce steam or to heat water or any other heat transfer medium.
- b. The affected kilns are not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM₁₀, as identified in 35 IAC 212.324(a)(1).
- c. The affected kilns are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the actual heat input of each affected kiln is less than 2.9 MW (10 mmBtu/hr) and the affected kilns are not by definition fuel combustion emission units.
- d. The affected kilns are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each affected kiln is less than 73.2 MW (250 mmBtu/hr) and the affected kilns are not by definition fuel combustion emission units.

7.4.5 Operational and Production Limits and Work Practices

The affected kilns shall only be operated with natural gas as the fuel.

7.4.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected kilns are subject to the following:

- a. Emissions of PM from Kiln #4 shall not exceed 3.03 tons/year.
 - i. This limit is based on the allowable PM emission rate from 35 IAC 212.321 (0.69 lb/hr) determined from the maximum process weight

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rate for Kiln #4 (175 lb/hr) and the maximum hours of operation (8,760 hours/year).

- ii. The above limitations are being established in this permit pursuant to Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the PM emissions from Kiln #4 below the levels that would trigger the applicability of these rules, consistent with the information provided in the CAAPP application [T1N].
- b. Emissions of PM from Kilns #5 through #10 shall not exceed 7.89 tons/year, combined.
- i. This limit is based on the allowable PM emission rate from 35 IAC 212.321 (1.80 lb/hr, combined) determined by combining the maximum process weight rates of Kilns #5 through #10 (175 lb/hr, each) and the maximum hours of operation (8,760 hr/yr).
 - ii. The above limitations contain revisions to previously issued Permits 81090043 and 83070067. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of these aforementioned permits, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in these permits does not constitute a new major source or major modification pursuant to these rules. These limits are the primary

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enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the limits for PM emissions from Kilns #5, #6, and #7 (previously 0.23 ton/year) and Kilns #8, #9, and #10 (previously 1.34 tons/year) have been combined so as to correctly apply the emission limit specified by 35 IAC 212.321 to all similar process units for which construction or modification commenced on or after April 14, 1972 at this source. Also, the process weight rate for each kiln has been increased from 149 lb/hr to 175 lb/hr and the operating hours of each kiln have been increased from 8,400 hours/year to 8,760 hours/year [T1R].

- c. Emissions of PM from Kilns #11 through #18 shall not exceed 9.20 tons/year, combined.
 - i. This limit is based on the allowable PM emission rate from 35 IAC 212.321 (2.10 lb/hr, combined) determined by combining the maximum process weight rates of Kilns #11 through #18 (175 lb/hr, each) and the maximum hours of operation (8,760 hr/yr).
 - ii. The above limitations contain revisions to previously issued Permits 86090028, 88060009, 94080131, and 97020098. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of these aforementioned permits, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in these permits does not constitute a new

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major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the limit for PM emissions from Kilns #11, #12, and #13 (previously 4.8 tons/year), Kilns #14, #15, and #16 (previously 0.6 ton/year), Kiln #17 (previously 2.67 tons/year), and Kiln #18 (previously 2.67 tons/year) have been combined so as to correctly apply the emission limit specified by 35 IAC 212.321 to all similar process units for which construction or modification commenced on or after April 14, 1972 at this source. Also, the process weight rate for each kiln has been increased from 149 lb/hr to 175 lb/hr and the operating hours of each kiln have been increased from 8,400 hours/year to 8,760 hours/year [T1R].

- d. Emissions of NO_x from Kilns #14, #15, and #16 shall not exceed the following limits:

<u>Item of Equipment</u>	NO _x Emissions	
	<u>Ton/mo</u>	<u>Ton/yr</u>
Kilns #14 - #16 (Combined)	0.33	3.94

- i. The limit for NO_x emissions is based on standard emission factors, the maximum firing rate for natural gas in each kiln (3.0 mmBtu/hr), and the maximum hours of operation (8,760 hr/yr).
- ii. The above limitations contain revisions to previously issued Permit 88060009. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources

Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the limit for NO_x emissions from Kilns #14, #15, and #16 has been increased from 3.80 tons/year by 0.14 ton/year because the operating hours for these kilns has been increased from 8,400 hours/year to 8,760 hours/year [T1R].

- e. Emissions of NO_x from Kiln #17 shall not exceed the following limits:

<u>Item of Equipment</u>	<u>NO_x Emissions</u>	
	<u>lb/hr</u>	<u>Ton/yr</u>
Kiln #17	0.30	1.31

- i. The limit for NO_x emissions is based on standard emission factors, the maximum firing rate for natural gas (3.0 mmBtu/hr), and the maximum hours of operation (8,760 hr/yr).
- ii. The above limitations contain revisions to previously issued Permit 94080131. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major

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source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the limit for NO_x emissions from Kiln #17 has been increased from 1.26 tons/year by 0.05 ton/year because the operating hours for this kiln has been increased from 8,400 hours/year to 8,760 hours/year [T1R].

- f. Emissions of NO_x from Kiln #18 shall not exceed the following limits:

<u>Item of Equipment</u>	NO _x Emissions	
	<u>lb/hr</u>	<u>Ton/yr</u>
Kiln #18	0.30	1.31

- i. The limit for NO_x emissions is based on standard emission factors, the maximum firing rate for natural gas (3.0 mmBtu/hr), and the maximum hours of operation (8,760 hr/yr).
- ii. The above limitations contain revisions to previously issued Permit 97020098. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains

the most current and accurate information for the source. Specifically, the limit for NO_x emissions from Kiln #18 has been increased from 1.26 tons/year by 0.05 ton/year because the operating hours for this kiln has been increased from 8,400 hours/year to 8,760 hours/year [T1R].

- g. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

7.4.7 Testing Requirements

Pursuant to 35 IAC 212.110 and Section 39.5(7)(b) of the Act, testing for PM emissions shall be performed as follows:

- a. Measurement of particulate matter emissions from stationary emission units subject to 35 IAC Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E [35 IAC 212.110(a)].
- b. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4 [35 IAC 212.110(b)].
- c. Upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 IAC Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA [35 IAC 212.110(c)].

7.4.8 Monitoring Requirements

None

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected kiln to demonstrate compliance with Conditions 5.5.1, 7.4.3, and 7.4.6, pursuant to Section 39.5(7)(b) of the Act:

- a. Pursuant to 35 IAC 212.110(e) and Section 39.5(7)(e) of the Act, the owner or operator of an emission unit subject 35 IAC Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed and shall include the following:
 - i. The date, place and time of sampling or measurements;
 - ii. The date(s) analyses were performed;
 - iii. The company or entity that performed the analyses;
 - iv. The analytical techniques or methods used;
 - v. The results of such analyses; and
 - vi. The operating conditions as existing at the time of sampling or measurement.
- b. Natural gas usage of Kilns #14, #15, #16, #17, and #18, Mft³/mo and Mft³/yr;
- c. The weight of raw materials introduced to each affected kiln, lb/mo and ton/yr;
- d. The operating schedule of the affected kilns;
- e. Monthly and aggregate annual PM and VOM emissions from the affected kilns shall be maintained, based on the operating schedule and the emission rates determined by stack testing, with supporting data; and
- f. Monthly and aggregate annual NO_x emissions from the Kilns #14, #15, #16, #17, and #18 shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

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7.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of an affected kiln with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. A person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from Condition 7.4.7 (see also 35 IAC 212.110) that will be used [35 IAC 212.110(d)].
- b. The use of any fuel other than the fuel specified in Condition 7.4.5 within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.
- c. Emissions of NO_x and/or PM in excess of the limits in Condition 7.4.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 7.4.9 and the emission factors and formulas listed below:

- a. Compliance with Conditions 7.4.3(b) and (d) is assumed by the work-practices inherent in operation of natural gas-fired kilns, so that no compliance procedures are set in this permit addressing these regulations.

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- b. To determine compliance with Condition 5.5.1 and 7.4.6, emissions of PM and VOM, from each affected kiln shall be determined based on hourly emission rates of 0.01 lb/hr and 0.69 lb/hr, respectively, which are the emission rates determined from the most recent stack testing.
- c. To determine compliance with Conditions 5.5.1 and 7.4.6, NO_x emissions from the combustion of natural gas in Kilns #14, #15, #16, #17, and #18 shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lb/Mft³)</u>
NO _x	100

This is the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998.

Natural Gas Combustion Emissions (lb) = (Natural Gas Consumed, Mft³) x (The Appropriate Emission Factor, lb/Mft³)

7.5 Unit Kiln #19: Truck Intermittent Kiln #19
 Control TO 1: Thermal Oxidizer

7.5.1 Description

Abrasive grains are mixed with a liquid binder/resin and then the mix is placed in a steel mold and pressed to achieve a desired density and shape. The formed wheels are stripped from the mold and placed on racks, which are then placed in the kiln for drying. Abrasive grains are mixed with a liquid binder/resin and then the mix is placed in a steel mold and pressed to achieve a desired density and shape. The formed wheels are stripped from the mold and placed on racks, which are then placed in the kiln for drying. The applicant states that the thermal oxidizer will be used to control odors. The thermal oxidizer for Kiln #19 is used to control odors.

7.5.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Kiln #19 (420)	Swindell Dresser Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #19 (420), 15.0 mmBtu/hr)	Thermal Oxidizer TO 1

7.5.3 Applicability Provisions and Applicable Regulations

- a. Kiln #19 is an "affected kiln" for the purpose of these unit-specific conditions.
- b. The affected kiln is subject to the emission limits identified in Condition 5.2.2.
- c. The affected kiln is subject to 35 IAC 212.321(a), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced

on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321(a)].

- d. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, [35 IAC 214.301].
- e. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in 35 IAC 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

7.5.4 Non-Applicability of Regulations of Concern

- a. The affected kiln is not subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Dc, because the affected kiln is not used to produce steam or to heat water or any other heat transfer medium.
- b. The affected kiln is not subject to 35 IAC 212.324, Process Emission Units In Certain Areas, because the source is not located in a non-attainment area for PM₁₀, as identified in 35 IAC 212.324(a)(1).
- c. The affected kiln is not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the affected kiln is not by definition a fuel combustion emission unit.
- d. The affected kiln is not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of the affected kiln is less than 73.2 MW (250 mmBtu/hr) and the affected kiln is not by definition a fuel combustion emission unit.

7.5.5 Operational and Production Limits and Work Practices

- a. The affected kiln shall only be operated with natural gas as the fuel.

- b. The Permittee shall follow good operating practices for the thermal oxidizer, including periodic inspection, routine maintenance and prompt repair of defects.

7.5.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected kiln is subject to the following:

- a. Emissions and operation of equipment shall not exceed the following limits:

<u>Item of Equipment</u>	Firing Rate (mmBtu/hr)
Kiln #19	15.0
<u>Thermal Oxidizer</u>	8.0
Total	

E M I S S I O N S					
CO		NO _x		PM	
<u>(lb/hr)</u>	<u>(T/yr)</u>	<u>(lb/hr)</u>	<u>(T/yr)</u>	<u>(lb/hr)</u>	<u>(T/yr)</u>
0.50	2.19	2.00	8.76	0.20	0.88
0.16	<u>0.71</u>	0.77	<u>3.34</u>	0.10	<u>0.41</u>
	2.90		12.10		1.29

These limits are based on standard emission factors, the type of fuel(s), the maximum firing rate(s), and the maximum hours of operation (8,760 hours/year).

- b. The above limitations were established in Permit 98050016, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].
- c. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month

total).

7.5.7 Testing Requirements

Pursuant to 35 IAC 212.110 and Section 39.5(7)(b) of the Act, testing for PM emissions shall be performed as follows:

- a. Measurement of particulate matter emissions from stationary emission units subject to 35 IAC Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E [35 IAC 212.110(a)].
- b. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4 [35 IAC 212.110(b)].
- c. Upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 IAC Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA [35 IAC 212.110(c)].

7.5.8 Monitoring Requirements

None

7.5.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected kiln to demonstrate compliance with Conditions 5.5.1, 7.5.3, and 7.5.6, pursuant to Section 39.5(7)(b) of the Act:

- a. Pursuant to 35 IAC 212.110(e) and Section 39.5(7)(e) of the Act, the owner or operator of an emission unit subject 35 IAC Part 212 shall retain records of all tests which are performed. These records shall be

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retained for at least three (3) years after the date a test is performed and shall include the following:

- i. The date, place and time of sampling or measurements;
 - ii. The date(s) analyses were performed;
 - iii. The company or entity that performed the analyses;
 - iv. The analytical techniques or methods used;
 - v. The results of such analyses; and
 - vi. The operating conditions as existing at the time of sampling or measurement.
- b. Records addressing use of good operating practices for the thermal oxidizer:
- i. Records for periodic inspection of the thermal oxidizer with date, individual performing the inspection, and nature of inspection; and

- ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- c. Natural gas usage of the affected kiln, Mft³/mo and Mft³/yr;
- d. The weight of raw materials introduced to the affected kiln, lb/mo and ton/yr;
- e. The operating schedule of the affected kiln; and
- f. Monthly and aggregate annual CO, NO_x PM, SO₂, and VOM emissions from the affected kiln shall be maintained, based on fuel consumption and the applicable emission factors, with supporting calculations.

7.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected kiln with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. A person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from Condition 7.5.7 (see also 35 IAC 212.110) that will be used [35 IAC 212.110(d)].
- b. The use of any fuel other than the fuel specified in Condition 7.5.5(a) within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

- c. Emissions of CO, NO_x and/or PM in excess of the limits in Condition 7.5.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.5.12 Compliance Procedures

Compliance with the emission limits shall be based on the recordkeeping requirements in Condition 7.5.9 and the emission factors and formulas listed below:

- a. Compliance with Conditions 7.5.3(b) and (d) is assumed by the work-practices inherent in operation of natural gas-fired kilns, so that no compliance procedures are set in this permit addressing these regulations.
- b. To determine compliance with Conditions 5.5.1 and 7.5.6, emissions from the combustion of natural gas in the affected kiln shall be calculated based on the following emission factors:

<u>Pollutant</u>	<u>Emission Factor</u> <u>(lb/Mft³)</u>
CO	84
NO _x	100
PM	7.6
SO ₂	0.6
VOM	5.5

These are the emission factors for uncontrolled natural gas combustion in small boilers (< 100 mmBtu/hr), Tables 1.4-1 and 1.4-2, AP-42, Volume I, Fifth Edition, Supplement D, March, 1998.

Natural Gas Combustion Emissions (lb) = (Natural Gas Consumed, Mft³) x (The Appropriate Emission Factor, lb/Mft³)

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after _____ **{insert public notice start date}** (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

As of the date of issuance of this permit, there are no such economic incentive, marketable permit or emission trading programs that have been approved by USEPA.

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms

without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

- a. The changes do not violate applicable requirements;
- b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;
- c. The changes do not constitute a modification under Title I of the CAA;
- d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and
- e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:
 - i. Describe the physical or operational change;
 - ii. Identify the schedule for implementing the physical or operational change;
 - iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;
 - iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and
 - v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

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Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

<u>Monitoring Period</u>	<u>Report Due Date</u>
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

- a. The name and identification of the affected unit(s);
- b. The person(s) who will be performing sampling and analysis and their experience with similar tests;
- c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;
- d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;

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- e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;
- f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and
- g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

- a. The name and identification of the affected unit(s);
- b. The date and time of the sampling or measurements;
- c. The date any analyses were performed;
- d. The name of the company that performed the tests and/or analyses;
- e. The test and analytical methodologies used;
- f. The results of the tests including raw data, and/or analyses including sample calculations;
- g. The operating conditions at the time of the sampling or measurements; and
- h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

- a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:

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- i. Illinois EPA - Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276
 - ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234
 - iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506
 - iv. USEPA Region 5 - Air Branch

USEPA (AR - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604
- b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 ("Title I provisions") and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

- a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;
- b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
- c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and
- d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or

denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

- a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- d. Sample or monitor any substances or parameters at any location:
 - i. At reasonable times, for the purposes of assuring permit compliance; or
 - ii. As otherwise authorized by the CAA, or the Act.
- e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and
- f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply With Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

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This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

- a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].
- b. Other records required by this permit shall be retained for a period of at least 5 years from the

date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 - Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

- a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.
- b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.
- c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

- a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:
 - i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency. Normally, an act of God such as lightning or flood is considered an emergency;
 - ii. The permitted source was at the time being properly operated;
 - iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and
 - iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.
- b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

- a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;
- b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;
- c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and
- d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15)(b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5)(l), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 - Emissions of Particulate Matter from New Process Emission Units

10.1.1 Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972

- a. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].
- b. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.321(b)]:

$$E = A(P)^B$$

Where:

P = Process weight rate; and
E = Allowable emission rate; and,

- i. Up to process weight rates of 408 Mg/hr (450 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.214	2.54
B	0.534	0.534

- ii. For process weight rate greater than or equal to 408 Mg/hr (450 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	11.42	24.8

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B

0.16

0.16

- c. Limits for Process Emission Units For Which
Construction or Modification Commenced On or After
April 14, 1972 [35 IAC 212.321(c)]:

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Metric		English	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10
0.3	0.64	0.30	1.35
0.4	0.74	0.40	1.58
0.5	0.84	0.50	1.75
0.7	1.00	0.75	2.40
0.9	1.15	1.00	2.60
1.8	1.66	2.00	3.70
2.7	2.1	3.00	4.60
3.6	2.4	4.00	5.35
4.5	2.7	5.00	6.00
9.0	3.9	10.00	8.70
13.0	4.8	15.00	10.80
18.0	5.7	20.00	12.50
23.0	6.5	25.00	14.00
27.0	7.1	30.00	15.60
32.0	7.7	35.00	17.00
36.0	8.2	40.00	18.20
41.0	8.8	45.00	19.20
45.0	9.3	50.00	20.50
90.0	13.4	100.00	29.50
140.0	17.0	150.00	37.00
180.0	19.4	200.00	43.00
230.0	22.0	250.00	48.50
270.0	24.0	300.00	53.00
320.0	26.0	350.00	58.00
360.0	28.0	400.00	62.00
408.0	30.1	450.00	66.00
454.0	30.4	500.00	67.00

10.2 Attachment 2 - Emissions of Particulate Matter from Existing
 Process Emission Units

10.2.1 Process Emission Units for Which Construction or
 Modification Commenced Prior to April 14, 1972

- a. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which, either alone or in combination with the emission of particulate matter from all other similar process emission at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 [35 IAC 212.322(a)].
- b. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.322 shall be determined by using the equation [35 IAC 212.322(b)]:

$$E = C + A(P)^B$$

Where:

P = Process weight rate; and
 E = Allowable emission rate; and,

- i. Up to process weight rates up to 27.2 Mg/hr (30 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	1.985	4.10
B	0.67	0.67
C	0	0

- ii. For process weight rate in excess of 27.2 Mg/hr (30 T/hr):

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lb/hr
A	25.21	55.0
B	0.11	0.11
C	-18.4	-40.0

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- c. Limits for Process Emission Units For Which
Construction or Modification Commenced Prior to
April 14, 1972 [35 IAC 212.322(c)]:

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Metric		English	
P	E	P	E
Mg/hr	kg/hr	T/hr	lb/hr
0.05	0.27	0.05	0.55
0.1	0.42	0.10	0.87
0.2	0.68	0.2	1.40
0.3	0.89	0.30	1.83
0.4	1.07	0.40	2.22
0.5	1.25	0.50	2.58
0.7	1.56	0.75	3.38
0.9	1.85	1.00	4.10
1.8	2.9	2.00	6.52
2.7	3.9	3.00	8.56
3.6	4.7	4.00	10.40
4.5	5.4	5.00	12.00
9.0	8.7	10.00	19.20
13.0	11.1	15.00	25.20
18.0	13.8	20.00	30.50
23.0	16.2	25.00	35.40
27.2	18.15	30.00	40.00
32.0	18.8	35.00	41.30
36.0	19.3	40.00	42.50
41.0	19.8	45.00	43.60
45.0	20.2	50.00	44.60
90.0	23.2	100.00	51.20
140.0	25.3	150.00	55.40
180.0	26.5	200.00	58.60
230.0	27.7	250.00	61.00
270.0	28.5	300.00	63.10
320.0	29.4	350.00	64.90
360.0	30.0	400.00	66.20
400.0	30.6	450.00	67.70
454.0	31.3	500.00	69.00

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10.3 Attachment 3 - Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

RWB:jar

I. INTRODUCTION

This source has applied for a Clean Air Act Permit Program (CAAPP) operating permit for its existing operation. The CAAPP is the program established in Illinois for the operating permits for significant stationary sources required by the federal Clean Air Act, as amended in 1990. The conditions in a CAAPP permit are enforceable by both the Illinois Environmental Protection Agency (Illinois EPA) and the USEPA.

Radiac Abrasives is located at 1015 South College Avenue in Salem. The source manufactures grinding wheels for commercial and noncommercial applications. The manufacturing process is comprised of raw materials receiving and inspection, abrasive grain mixing (dry type vitreous, wet type vitreous, and organic mixes), mix drying, wheel molding, wheel drying, wheel bonding, wheel firing, finishing and shipping.

II. EMISSION UNITS

Significant emission units at this source are as follows:

Emission Unit	Description	Date Constructed	Emission Control Equipment
Kiln #1 (401)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #1 (401), 3.0 mmBtu/hr)	1966	None
Kiln #2 (402)	Bickley Model #5200 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #2 (402), 4.0 mmBtu/hr)	1966	None
Kiln #3 (409)	Bickley Model #8710 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #3 (409), 4.0 mmBtu/hr)	October, 1974	None
Kiln #4 (403)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #4 (403), 6.0 mmBtu/hr)	May 1, 1980	None
Kiln #5 (404)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #5 (404), 3.0 mmBtu/hr)	September 28, 1981	None
Kiln #6 (405)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #6 (405), 3.0 mmBtu/hr)	September 28, 1981	None

Kiln #7 (406)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #7 (406), 3.0 mmBtu/hr)	September 28, 1981	None
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Emission Unit	Description	Date Constructed	Emission Control Equipment
Kiln #8 (407)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #8 (407), 3.0 mmBtu/hr)	July 15, 1983	None
Kiln #9 (408)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #9 (408), 3.0 mmBtu/hr)	July 15, 1983	None
Kiln #10 (410)	Boulton Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #10 (410), 3.0 mmBtu/hr)	July 15, 1983	None
Kiln #11 (411)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #11 (411), 3.0 mmBtu/hr)	December 1, 1986	None
Kiln #12 (412)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #12 (412), 3.0 mmBtu/hr)	December 1, 1986	None
Kiln #13 (414)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #13 (414), 3.0 mmBtu/hr)	December 1, 1986	None
Kiln #14 (415)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #14 (415), 3.0 mmBtu/hr)	June 13, 1988	None
Kiln #15 (416)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #15 (416), 3.0 mmBtu/hr)	June 13, 1988	None
Kiln #16 (417)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent Kiln #16 (417), 3.0 mmBtu/hr)	June 13, 1988	None
Kiln #17 (418)	Bickley Model #5300 Natural Gas-Fired Vitrified Product Kiln (Truck Intermittent	September 1, 1994	None

	Kiln #17 (418), 3.0 mmBtu/hr)		
Kiln #18 (419)	Bickley Model #5300 Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #18 (419), 3.0 mmBtu/hr)	March, 1997	None

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Emission Unit	Description	Date Constructed	Emission Control Equipment
Kiln #19 (420)	Swindell Dresser Natural Gas-Fired Vitriified Product Kiln (Truck Intermittent Kiln #19 (420), 15.0 mmBtu/hr)	June, 1998	Thermal Oxidizer TO 1
Oven #1 (452)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #1 (452), 0.5 mmBtu/hr)	1966	None
Oven #2 (453)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #2 (453), 0.5 mmBtu/hr)	1966	None
Oven #3 (451)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #3 (451), 1.0 mmBtu/hr)	1966	None
Oven #4 (455)	Beatie Natural Gas-Fired Resinoid Product Curing Oven (Oven #4 (455), 0.4 mmBtu/hr)	1966	None
Oven #5 (468)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #5 (468), 0.5 mmBtu/hr)	August 1, 1979	None
Oven #6 (467)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #6 (467), 0.5 mmBtu/hr)	1966	None
Oven #9 (456)	Gehnrich Natural Gas-Fired Resinoid Product Curing Oven (Oven #9 (456), 1.0 mmBtu/hr)	August 1, 1979	None
Oven #10 (461)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #10 (461), 0.5 mmBtu/hr)	September 28, 1981	None

Oven #11 (462)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #11 (462), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #12 (463)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #12 (463), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #13 (464)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #13 (464), 0.5 mmBtu/hr)	September 28, 1981	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Oven #14 (465)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #14 (465), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #15 (466)	Hedin Natural Gas-Fired Resinoid Product Curing Oven (Oven #15 (466), 0.5 mmBtu/hr)	September 28, 1981	None
Oven #17 (443/444)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #17 (443/444), 0.8 mmBtu/hr)	December 1, 1986	None
Oven #18 (445/446)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #18 (445/446), 0.8 mmBtu/hr)	December 1, 1986	None
Oven #19 (447/448)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #19 (447/448), 0.8 mmBtu/hr)	December 1, 1986	None
Oven #23 (439/440)	Michigan Natural Gas-Fired Resinoid Product Curing Oven (Oven #23 (439/440), 0.8 mmBtu/hr)	June 13, 1988	None

III. EMISSIONS

This source is required to have a CAAPP permit since it is a major source of emissions.

For purposes of fees, the source is allowed the following emissions:

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Nitrogen Oxides (NO _x)	40.68
Particulate Matter (PM)	111.81
Sulfur Dioxide (SO ₂)	0.40
Volatile Organic Material (VOM)	0.99
HAP, not included in VOM or PM	111.0
TOTAL	264.88

This permit is a combined Title I/CAAPP permit that may contain terms and conditions which address the applicability, and compliance if

determined applicable, of Title I of the Clean Air Act and regulations promulgated thereunder, including 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the permit by T1, T1R, or T1N. The source has requested that the Illinois EPA establish or revise such conditions in a

Title I permit, consistent with the information provided in the CAAPP application. Any conditions established in a construction permit pursuant to Title I and not revised or deleted in this permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois.

All emission sources in Illinois must comply with the federal New Source Performance Standards (NSPS). The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

All emission sources in Illinois must comply with the federal National Emission Standards for Hazardous Air Pollutants (NESHAP). The Illinois EPA is administering NESHAP in Illinois on behalf of the United States EPA under a delegation agreement.

V. PROPOSED PERMIT

CAAPP

A CAAPP permit contains all conditions that apply to a source and a listing of the applicable state and federal air pollution control regulations that are the origin of the conditions. The permit also contains emission limits and appropriate compliance procedures. The appropriate compliance procedures may include inspections, work practices, monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis.

Title I

A combined Title I/CAAPP permit contains terms and conditions established by the Illinois EPA pursuant to authority found in Title I provisions, e.g., 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Notwithstanding the expiration date on the first page of the permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a CAAPP permit. The Illinois EPA is therefore proposing to issue a CAAPP permit, subject to the conditions proposed in the draft permit.

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Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 164.

RWB:jar