

AIR EMISSION PERMIT NO. 01500007- 001

IS ISSUED TO

Ochs Brick Company
Highway 14 East
Springfield, Brown County, Minnesota 56087-0106

The emission units, and emission stacks at the stationary source authorized in this permit are as described in the following permit application:

Permit Type	Application Date
Total Facility Operating Permit	April 17, 1995

This permit authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Pt 70/Limits to avoid NSR
Issue Date: August 7, 2000
Expiration: August 7, 2005
All Title I Conditions do not expire.

Toni Volkmeier

Ann M. Foss
Manager
North and South Major Facilities

for Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

TV:ais

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition.

FACILITY DESCRIPTION:

The facility manufactures bricks from clay. Clay is mined off site. As it is used, it is milled and screened to create a consistent material. Water is added as necessary to create the correct consistency for extruding and forming the brick. As the brick material is extruded, the bricks are chopped to the correct size. Bricks are then stacked and proceed through a heating and drying chamber prior to the firing kiln. Fired bricks are then stacked on pallets for storage and shipment.

The primary source of air pollution is the firing kiln. Emissions are combustion products of natural gas or distillate oil, and gaseous emissions driven off as the clay is fired (sulfur dioxide, hydrogen fluoride, and hydrogen chloride. The facility has accepted limits on the annual quantity of bricks produced, the sulfur content of the clay used, and the sulfur content of the distillate oil combusted, to maintain the potential emissions of sulfur dioxide below 250 tons per year.

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co
 Permit Number: 01500007 - 001

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item:	Total Facility
What to do	Why to do it
FACILITY-SPECIFIC REQUIREMENTS	hdr
Recordkeeping: by the 15th day of every month, record the quantity of bricks produced during the previous month and calculate the new 12 month rolling sum of bricks produced.	Title I Condition: Recordkeeping to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Computer Dispersion Modeling of Sulfur Dioxide Emissions: Computer Dispersion Modeling is required for all pollutants for which potential emissions exceed 100 tons per year, to demonstrate that the National and Minnesota Ambient Air Quality Standards are not impacted. See Table B for submittal requirements. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 2
A. PRIMARY OPERATING LIMIT	hdr
Sulfur Content of Clay: less than or equal to 0.083 percent by weight	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Sulfur Content Analysis: Test the sulfur content of each shipment of clay received. Maintain records of the results of this analysis on site.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Brick Production: less than or equal to 105000 tons/year using 12-month Rolling Sum	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
B. ALTERNATE OPERATING LIMIT (applies only in the event that sulfur content of clay exceeds the above limit)	hdr
Sulfur Dioxide: less than or equal to 249 tons/year using 12-month Rolling Sum , calculated as described below. For the 1st 11 months of the rolling sum, the following limits apply: Month 1: 63 tons Months 1-2: 80 tons Months 1-3: 97 tons Months 1-4: 114 tons Months 1-5: 131 tons Months 1-6: 148 tons Months 1-7: 165 tons Months 1-8: 182 tons Months 1-9: 199 tons Months 1-10: 216 tons Months 1-11: 233 tons	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Alternate Limit, continued Each month, test the sulfur content of the of the clay being processed, maintain records of this analysis on site, and use the information to calculate the monthly SO2 emissions. When the sulfur content has been below 0.083% for 12 consecutive months, the Permittee may return to the annual testing requirement (when the sulfur content has been below 0.083% for 12 consecutive months, the "alternate limit" and associated calculations and recordkeeping no longer apply).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Alternate Limit, continued By the 15th day of every month, calculate and record the SO2 emissions from the previous month using the following equation: $SO_2 = [B \times S(B) \times 2] + [G \times S(G) \times 0.000071]$ where: SO2 = the sulfur dioxide emissions for the previous month B = the tons of brick fired during the previous month S(B) = the current percent sulfur content of the clay (most recent measurement). If the sulfur content is 0.09%, S(B) = 0.0009. 2 = conversion factor (2 tons of SO2 per ton of sulfur) G = gallons of fuel oil used in the kiln during the previous month S(G) = 100 x the percent sulfur content of the fuel (from fuel certification, see requirements under EU004). If the sulfur content is 0.3%, S(G) = 0.3. 0.000071 = emission factor in units of tons/gallon of fuel oil	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co
 Permit Number: 01500007 - 001

GENERAL REQUIREMENTS	hdr
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Do not cause or permit a building or its appurtenances or a road, or a driveway, or an open area to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne. Take reasonable precautions to prevent the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate. The Commissioner may require such reasonable measures as may be necessary to prevent particulate matter from becoming airborne, including but not limited to, paving or frequent clearing of roads, driveways, and parking lots; application of dust-free surfaces; application of water; and the planting and maintenance of vegetative ground cover.	Minn. R. 7011.0150
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co
 Permit Number: 01500007 - 001

Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Emissions Inventory Report: due April 1 of each year. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co

Permit Number: 01500007 - 001

Subject Item: GP 001 Grinding and Screening equipment**Associated Items:** EU 001 Hammermill

EU 002 Screener

What to do	Why to do it
Total Particulate Matter: less than or equal to 35.43 lbs/hour or the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 under actual operating conditions, never to exceed 0.3 grains per dry standard cubic foot of exhaust gas. This limit applies to each unit individually. The combined potential to emit of EU001 and EU002 is 2.5 lb/hour.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (Applies to each unit individually)	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co

Permit Number: 01500007 - 001

Subject Item: EU 003 Tunnel Kiln (Dryer Portion)**Associated Items:** SV 002 Tunnel Kiln (dryer portion) exhaust

What to do	Why to do it
Total Particulate Matter: less than or equal to 31.83 lbs/hour or the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 under actual operating conditions, never to exceed 0.3 grains per dry standard cubic foot of exhaust gas. The potential to emit of EU003 is 8.42 lb/hour.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co
 Permit Number: 01500007 - 001

Subject Item: EU 004 Tunnel Kiln (Kiln Portion)

Associated Items: SV 003 Tunnel Kiln (kiln portion) exhaust

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 31.83 lbs/hour or the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 under actual operating conditions, never to exceed 0.3 grains per dry standard cubic foot of exhaust gas.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
OPERATING REQUIREMENTS	hdr
Fuel: Limited to natural gas and fuel oil only.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Sulfur Content of Fuel: less than or equal to 0.5 percent by weight (fuel oil)	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Recordkeeping: The Permittee shall maintain records of vendor certifications for each fuel oil purchase. Certification shall include the name of the oil supplier and a statement of the sulfur content of the shipment, by weight.	Title I Condition: Recordkeeping to avoid major source classification under 40 CFR Section 52.21
TESTING REQUIREMENTS	hdr
Performance Test: due 365 days after Permit Issuance to measure total particulate matter emissions	Minn. R. 7017.2020, subp. 1
Performance Test Notifications and Submittals: See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS

08/07/00

Facility Name: Ochs Brick Co

Permit Number: 01500007 - 001

Subject Item: EU 005 Monorail - Packaging Equipment**Associated Items:** SV 004 Monorail exhaust point

What to do	Why to do it
Total Particulate Matter: less than or equal to 31.83 lbs/hour or the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 under actual operating conditions, never to exceed 0.3 grains per dry standard cubic foot of exhaust gas. The potential to emit of EU005 is 4.5 lb/hour.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE B: SUBMITTALS

08/07/00

Facility Name: Ochs Brick Co
Permit Number: 01500007 - 001

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

08/07/00

Facility Name: Ochs Brick Co
 Permit Number: 01500007 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Protocol	due 1,096 days after Permit Issuance. This protocol will describe the proposed SO2 modeling methodology and input data, in accordance with all requirements of 40 CFR pt. 51, App. W. The protocol will be based on projected operating conditions under the next permit term. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility
Computer Dispersion Modeling Results	due 1,462 days after Permit Issuance. To be submitted after the MPCA has reviewed and approved the modeling protocol. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility
Testing Frequency Plan	due 60 days after Initial Performance Test for total particulate matter emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	EU004

TABLE B: RECURRENT SUBMITTALS

08/07/00

Facility Name: Ochs Brick Co
Permit Number: 01500007 - 001

What to send	When to send	Portion of Facility Affected
Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit was issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year. The EPA copy shall be sent to: Mr. George Czerniak, Chief, Air Enforcement and Compliance Assurance Branch, Air and Radiation Division, EPA Region V, 77 West Jackson Boulevard, Chicago, Illinois 60604	Total Facility

APPENDIX I – Insignificant Activities

Facility Name: Ochs Brick Company

Permit Number: 01500007-001

Insignificant Activities and Applicable Requirements

Minn. R. 7007.1300, subpart	Rule Description and Actual Description of the Activity	Applicable Requirement
3(A)	<p>Space heaters fueled by kerosene, natural gas, or propane.</p> <p>Natural gas fired space heaters</p>	Minn. R. 7011.0510/0515
3(B)(2)	<p>Fuel burning equipment with a capacity less than 500,000 Btu per hour</p> <p>Clay dryer, <500,000 Btu/hour capacity</p>	Minn. R. 7011.0610
3(E)(2)	<p>Non-hazardous pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of non-hazardous air pollutant VOCs</p> <p>2 – 3000 gallon VOC storage tanks</p>	Minn. R. 7011.1505
3(I)	<p>Individual emission units each of which have a potential to emit less than 4000 pounds per year of CO, and 2000 pounds per year of NO_x, SO₂, PM, PM₁₀, VOCs, and ozone.</p> <p>Body additive process (PTE 9.6 lb/yr PM)</p> <p>Body additive process (PTE 67 lb/yr PM)</p> <p>Sand dryer (PTE 1000 lb/yr PM, 0.02 lb/yr SO₂, 4.9 lb/yr NO_x, 0.1 lb/yr VOC, 1.2 lb/yr CO)</p> <p>Brick extruder (PTE 1580 lb/yr PM)</p> <p>Rock facer (PTE 1380 tpy PM)</p>	Minn. R. 7011.0710/0715
4(B)	<p>Emission units with actual emissions less than one ton per year of PM, PM₁₀, NO_x, SO₂, and VOCs</p> <p>2 cement mixers (actual emissions 0.04 tpy PM each)</p> <p>Feed hopper (actual emissions 0.2 tpy PM)</p> <p>3 raw material feed belts (actual emissions 0.18 tpy PM each)</p> <p>Kiln car/holding room (actual emissions 0.17 tpy PM each)</p> <p>Waste product transfer (actual emissions 0.34 tpy PM)</p> <p>Main plant packaging line (actual emissions 0.019 tpy PM)</p> <p>2 octagon packagers (actual emissions 0.3 tpy PM each)</p>	Minn. R. 7011.0710/0715
	<p>Stockpile loading/unloading (actual emissions 0.2 tpy PM)</p> <p>Red clay stockpile (actual emissions 0.11 tpy PM)</p> <p>Buff clay stockpile (actual emissions 0.004 tpy PM)</p>	Minn. R. 7011.0150

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 01500007-001

This technical support document is intended for all parties interested in the permit. The purpose of this document is to set forth the legal and factual bases for the permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner Address and Phone Number	Facility Address (SIC Code: 3251)
Ochs Brick Company P.O. Box 106 Springfield, MN 56087 Contact: Phillip Weller, Plant Manager (507) 723-4221 (507) 723-4223 --- fax	Ochs Brick Company Highway 14 East Springfield, Brown County, MN

1.2. Description of the facility

The facility manufactures bricks from clay. Clay is mined off site. As it is used, it is milled and screened to create a consistent material. Water is added as necessary to create the correct consistency for extruding and forming the brick. As the brick material is extruded, the bricks are chopped to the correct size. Bricks are then stacked and proceed through a heating and drying chamber prior to the firing kiln. Fired bricks are then stacked on pallets for storage and shipment.

The primary source of air pollution is the firing kiln. Emissions are combustion products of natural gas or distillate oil, and gaseous emissions driven off as the clay is fired (sulfur dioxide, hydrogen fluoride, and hydrogen chloride). The facility has accepted limits on the annual quantity of bricks produced, the sulfur content of the clay used, and the sulfur content of the distillate oil combusted, to maintain the potential emissions of sulfur dioxide below 250 tons per year.

1.3 Description of any changes allowed with this permit issuance

This permit allows an increase in brick production to 105,000 tons per year from the previous permit limit of 48,700 tons per year (set in 1989). No physical modifications are authorized.

1.4 Description of all modifications since the issuance of the last total facility permit

Application/Date	Action Authorized
Insignificant modification / June 8, 1995	Replacement of hammermill and screener

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1.5. Facility Emissions

Table 1. Total Facility Permitted Potential to Emit Summary:

(for detailed emissions calculations for individual units, see Attachment 1)

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x Tpy	CO tpy	VOC tpy	Lead tpy	HF tpy	HCl tpy	Total HAPs tpy
Total Facility Limited Potential Emissions	85.1	63.1	249.0	39.4	74.8	2.0	1.3	71.7	8.9	82.4
1997 Total Facility Actual Emissions	62.61	5.48	21.36	18.55	39.41	1.35	NR ¹	NR	NR	NR

¹ NR = Not reported

AP-42 also lists Total Fluorides as a pollutant. Total Fluorides are not regulated as a HAP, although they do have a significant increase threshold under the PSD program. HF was calculated by the Ochs Brick Company, based on measurements of fluorine content of their materials. It is assumed that all fluorine is released as HF; therefore, the total fluorides would be equivalent to the HF emissions.

Table 2. Facility and Permit Classification

Classification	Major Source	*Synthetic Minor	*Minor
PSD		SO ₂ , PM	PM ₁₀ , NO _x , CO, VOC
NAAR - NA			
Part 70 Permit Program	SO ₂ , HAPs	CO, PM ₁₀	VOC, NO _x

* Refers to permitted potential emissions that are less than those specified as major by 40 CFR 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

1.6 Summary of changes made during and following public notice period

Comments were received from EPA Region 5 on June 8, 2000, within the public notice period. The following changes were made to the draft permit as a result of those comments:

- Permit originally called for testing the sulfur content of the clay on an annual basis, since all clay is received from the same mine, and sulfur doesn't vary much within the mine. (Limit of 0.083% sulfur is more than what is indicated in AP-42 as the normal sulfur content of clays in Minnesota, Wisconsin, northern Iowa, and eastern Dakotas). Request was that sulfur be tested on a more frequent basis (for example, require testing of each shipment of clay received). Requirement changed to test sulfur content of each shipment of clay (usually only one shipment of clay is received per year – Attachment 3).
- EPA requested additional periodic monitoring on short term (lb/hr) limits under EU003. Rather than add monitoring, the limits on EU001, EU002, EU003, and EU005 were modified

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to clarify the fact that the potential to emit of each of those units is approximately 3.5%, 3.5%, 26%, and 14%, respectively, of the applicable limits.

2. Regulatory and/or Statutory Basis

New Source Review

The facility is a non-major source under New Source Review – Prevention of Significant Deterioration (PSD, 40 CFR § 52.21). The facility has accepted fuel restriction, raw material restrictions, and limits on production to avoid major source classification under PSD.

Part 70 Permit Program

The facility is a major source under the federal operating permits program (40 CFR pt. 70) and submitted a timely Title V application.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards that apply to this facility. 40 CFR § 60, Subpart OOO does not apply because the facility was in existence prior to August 31, 1983, and new equipment since that date have been replacements for larger units (large units replaced with smaller units, so no increase in emission rates).

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility is not subject to any of the proposed or promulgated NESHAPs. (There is a planned NESHAP for Clay Products Manufacturing, but work has not yet begun.) No changes affecting the emissions of any of the listed HAPs are being made at the facility.

Minnesota State Rules

State Standards of Performance that apply to this facility and are included in the permit are:

- Minn. R. 7011.0600 through 7011.0625 – Heating Fossil-Fuel-Burning Direct Equipment
- Minn. R. 7011.0700 through 7011.0735 – Pre- and Post- 1969 Industrial Process Equipment

Table 3: Regulatory Overview of Facility

Item	Applicable Regulations	Comments:
FC	Title I – synthetic minor limits for SO ₂ , PM	Limits set to keep potential emissions of all pollutants below 250 tpy. Primary limit consists of limit on sulfur content of clay and quantity of bricks produced. Alternate limit applies only if sulfur content of clay exceeds limit (an unlikely event). In that case, Permittee must measure the sulfur content monthly, and do monthly calculations of actual SO ₂ emissions.
EU001, EU002, EU003, EU005	Minn. R. 7011.0715	Standards of Performance for New Industrial Process Equipment
	Minn. R. 7005.0100	Definition of Potential to Emit (PTE is significantly less than IPER allows)
EU004	Minn. R. 7011.0610	Standards of Performance for Direct Heating Equipment

3. Technical Information

3.1 Potential to Emit Calculations

Attachment 1 to this document includes a summary of the potential to emit of the facility, and individual calculations. Supporting documentation prepared by the MPCA and the Permittee is also included.

Criteria Pollutant Emissions: The maximum numbers in Table 1 are limited by both production limits and pollutant-specific emission limits contained in the permit.

Note: there is an “alternate limit” controlling SO₂ emissions from the facility. The permitted sulfur content (0.083%) is the highest that the facility has ever used, and it is unlikely that their clay supply would suddenly jump in sulfur content. However, if that does occur, there is little that the facility can do immediately other than seek other sources of clay. Until a clay source is found that can consistently meet the permit limit, the facility will measure the sulfur content monthly and calculate SO₂ emissions monthly to ensure that they do not exceed 250 tons per year. If the alternate limit is triggered (i.e. if the sulfur content of the clay exceeds 0.083%), the procedures associated with the alternate limit must continue until the sulfur content has been below 0.083% for 12 consecutive months.

Hazardous Air Pollutant (HAP) Emissions: Total and individual HAPs are limited only by the production limits and raw material requirements contained in the permit.

3.2 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements. To achieve this objective, US EPA issued guidance (September 15, 1998, memorandum Periodic Monitoring Guidance for Title V Operating Permits Programs) on periodic monitoring requirements for permitted sources.

In evaluating the monitoring included in the permit, the MPCA considered the following as per the September 15, 1998, guidance:

- the likelihood of violating the applicable requirement;
- whether add-on controls are necessary to meet the emission limit;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units.

Table 4 summarizes the periodic monitoring requirements.

Table 4. Periodic Monitoring Requirements

Emission Unit	Requirement (Basis)	Additional Monitoring	Discussion
Entire facility	Title I limits to avoid NSR applicability	<u>Primary limit:</u> Keep records of brick production Test the sulfur content of each shipment of clay <u>Alternate limit:</u> Keep records of brick production Test sulfur content of clay monthly Do monthly calculations of SO ₂ emissions	These limits maintain SO ₂ and PM emissions below the PSD threshold of 250 tpy each.

Emission Unit	Requirement (Basis)	Additional Monitoring	Discussion
EU001, EU002, EU003, EU005	PM and opacity limits under Minn. R. 7011.0715	None	For each of these units, the potential to emit of the equipment based on AP-42 emission factors is far less than what is allowed by the rule. No control equipment is required to achieve the limits.
EU004	PM and opacity limits under Minn. R. 7011.0610	Performance Testing for PM emissions	The PM emission rate based on AP-42 emission factors exceeds what is allowed by Minn. R. 7011.0610 at maximum conditions. However, since the emission factors are "D" rated, and excessive visible emissions were not observed from the operating kiln during a visit to the facility, it is likely that the actual emission rate is less than predicted. A PM test would confirm this. No control equipment is required to achieve the limits.
EU004, continued	Title I limits to avoid NSR applicability	Keep records of sulfur content of fuel oil purchases	Limit maintains SO ₂ emissions below the PSD threshold. While the total facility SO ₂ limit is 249 tpy, that is based on combusting fuel oil 100% of the time at a 0.5% sulfur content. In reality, the company routinely gets fuel oil at about 0.05% sulfur, and uses fuel oil as a back up fuel. Therefore, it is unlikely that the PSD threshold of 250 tpy will be approached.

3.3 Deviations from Delta Guidance

Groups

One item that deviates from guidance is the listing of certain applicable requirements at the group level even though they apply at the individual unit or control device. Specifically: the Minnesota standards for industrial process equipment are listed at GP001. In general, limits that

apply to individual pieces of equipment should be tracked at the stack or unit level and should not be listed as a GP. The main reason is if there is noncompliance with a limit by one unit within the group, the computer system would say the whole group was out of compliance. This is a computer tracking issue.

In this case, the units included in GP001 are grouped by AP-42 for purposes of emission calculation. The emission factors is for the two operations combined. Since they are subject to identical requirements, and testing is not required (so there are no “Delta trackable” requirements) all limits were placed at the GP level.

4. Conclusion

Based on the information provided by the Ochs Brick Company, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 01500007-001 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

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Attachment 1 Calculations

Attachment 2 Facility Description and CD-01 Forms

Attachment 3 EPA comments and Ochs Brick response

Attachment 1

Calculations

Attachment 2
Facility Description Forms

Attachment 3

EPA Comments/Ochs Brick's Response