

DRAFT

**AIR EMISSION PERMIT NO. 14500067- 007**  
**Total Facility Operating Permit**

**IS ISSUED TO**

**Cold Spring Granite Company**

Cold Spring Granite Company  
17482 Granite West Road  
Cold Spring, Stearns County, MN 56320

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the Permit Applications Table.

This permit supersedes Air Emission Permit No. 14500067-006 and authorizes the Permittee to operate and modify 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.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such as are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

**Permit Type:** State; Limits to Avoid Pt 70/Limits to Avoid NSR; True Minor for NSR;

**Operating Permit Issue Date:** <issue date>

**Expiration Date:** Non-Expiring – All Title I Conditions do not expire.

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Don A. Smith, Manager  
Air Quality Permits Section  
Industrial Division

for John Stine  
Commissioner  
Minnesota Pollution Control Agency

**Permit Applications Table**

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	January 20, 2012	007

XX:xx

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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. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, 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.

**FACILITY DESCRIPTION:**

Cold Spring Granite Company (Permittee) operates a dimensional granite fabrication facility in Cold Spring, Minnesota. The facility previously operated at four locations in the Cold Spring area, but has consolidated operations to a single location. Granite blocks from across the country are brought to the granite fabrication plant by truck. The granite blocks are cut into slabs and processed into the desired product, including building materials and monuments. The source also includes a bronze foundry and finishing operations. The facility has previously operated under a Part 70 operating permit; by removing operations, the facility later qualified for and obtained a Capped Permit under Minn. R. 7007.1140, under which it currently operates. Because of changes in the control efficiencies that the Permittee is allowed to assume under Minn. R. 7011.0070, the permittee no longer qualifies for the Capped Permit. Therefore, an individual state operating permit was applied for and is being issued for the facility.

This permit authorizes the addition of a 2<sup>nd</sup> spraying operation at the existing foundry lacquer application operation.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**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
Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
This permit establishes limits on the facility to keep it a minor source under New Source Review and Part 70. The Permittee cannot make any change at the source that would make the source a major source under New Source Review or Part 70 until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080
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
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subps. 14 and 16(J)
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
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. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
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
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)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
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

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-2** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.</p> <p>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</p> <p>The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.</p>	<p>Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2</p>
<p>Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.</p>	<p>Minn. R. 7017.2025, subp. 3</p>
<b>MONITORING REQUIREMENTS</b>	hdr
<p>Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<b>RECORDKEEPING</b>	hdr
<p>Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, 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).</p>	<p>Minn. R. 7007.0800, subp. 5(C)</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>
<p>If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For nonexpiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.</p>	<p>Minn. R. 7007.1200, subp. 4</p>
<b>REPORTING/SUBMITTALS</b>	hdr
<p>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.</p> <p>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.</p>	<p>Minn. R. 7019.1000, subp. 3</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-3**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

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
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 - 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). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 - 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 - 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-4**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 018 PM Limits**

**Associated Items:** EU 003 Support Services Paint Room  
 EU 029 Tumbler (DC006)  
 EU 054 Monuwest Finishing (North DC021)  
 EU 055 Monuwest Finishing (West DC020)  
 EU 057 Foundry Paint Booth (DC036)  
 EU 059 Foundry Shakeout (MS002)  
 EU 060 Foundry Induction Furnace #1 (FR008)  
 EU 063 Foundry Mixer East (SM002)  
 EU 065 Foundry Vibra Mill #1 (VM003)  
 EU 066 Pouring and Cooling (CV 0032, 0035, 0051, 0053)  
 EU 068 Foundry Induction Furnace #2 (FR009)  
 EU 069 Foundry Induction Furnace #3 (FR010)  
 EU 070 Foundry Induction Furnace #4 (FR011)  
 EU 094 Monuwest Diesel Generator  
 EU 095 Foundry VibraMill #2 (VM002)  
 EU 096 Foundry Thermal Reclaim (SR002)  
 EU 097 Foundry Sand Mixer #2 (SM005)  
 EU 103 Foundry Lacquer Booth (DC049) Sprayer #1  
 EU 110 Shot Saw Area Makeup Air Heater  
 EU 111 Shot Saw Area Makeup Air Heater  
 EU 112 Monuwest Makeup Air Heater (HE001)  
 EU 113 Monuwest Makeup Air Heater (HE002)  
 EU 114 Monuwest Makeup Air Heater (HE003)  
 EU 115 Foundry Makeup Air Heater (HE013)  
 EU 116 Foundry Makeup Air Heater (HE017)  
 EU 117 Foundry Makeup Air Heater (HE018)  
 EU 118 Monuwest 5 Highlite Panel Filter Stations  
 EU 119 Monuwest 1 Highlite Panel Filter Station  
 EU 120 Foundry Finishing  
 EU 122 Support Services Natural Gas Generator  
 EU 123 Monuwest Diesel Generator  
 EU 124 Water Reclaim Diesel Generator  
 EU 125 Lacquer Finish Booth (DC049) Sprayer #2  
 EU 126 HE 025 Hastings space heater - north  
 EU 127 HE 026 Weather Rite space heater - north  
 EU 128 Paint Curing Oven  
 EU 129 Foundry Emergency Generator

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 71.5 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
PM < 10 micron: less than or equal to 71.5 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-5** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

PM < 2.5 micron: less than or equal to 71.5 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
RECORDKEEPING REQUIREMENTS	hdr
By the 15th day of each month, calculate and record the total PM emissions for the previous month, using the following equation:  $PM = PM(EU029) + PM(EU096) + PM(EU120) + PM(GP022) + PM(GP023) + PM(GP024) + PM(GP025) + PM(GP026) + PM(GP027)$ PM(EUxxx) and PM(GPxxx) are calculated and described under the Subject Items "EUxxx" and "GPxxx."	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the total PM10 emissions for the previous month, using the following equation:  $PM10 = PM10(EU029) + PM10(EU096) + PM10(EU120) + PM10(GP022) + PM10(GP023) + PM10(GP024) + PM10(GP025) + PM10(GP026) + PM10(GP027)$ PM10(EUxxx) and PM10(GPxxx) are calculated and described under the Subject Items "EUxxx" and "GPxxx."	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the total PM2.5 emissions for the previous month, using the following equation:  $PM2.5 = PM2.5(EU029) + PM2.5(EU096) + PM2.5(EU120) + PM2.5(GP022) + PM2.5(GP023) + PM2.5(GP024) + PM2.5(GP025) + PM2.5(GP026) + PM2.5(GP027)$ PM2.5(EUxxx) and PM2.5(GPxxx) are calculated and described under the Subject Items "EUxxx" and "GPxxx."	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the 12 month rolling sum of PM emissions, by summing the PM emissions calculated for each of the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the 12 month rolling sum of PM10 emissions, by summing the PM10 emissions calculated for each of the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the 12 month rolling sum of PM2.5 emissions, by summing the PM2.5 emissions calculated for each of the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-6**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 019 VOC Limit**

**Associated Items:**

- EU 003 Support Services Paint Room
- EU 057 Foundry Paint Booth (DC036)
- EU 059 Foundry Shakeout (MS002)
- EU 063 Foundry Mixer East (SM002)
- EU 065 Foundry Vibra Mill #1 (VM003)
- EU 094 Monuwest Diesel Generator
- EU 095 Foundry VibraMill #2 (VM002)
- EU 097 Foundry Sand Mixer #2 (SM005)
- EU 103 Foundry Lacquer Booth (DC049) Sprayer #1
- EU 110 Shot Saw Area Makeup Air Heater
- EU 111 Shot Saw Area Makeup Air Heater
- EU 112 Monuwest Makeup Air Heater (HE001)
- EU 113 Monuwest Makeup Air Heater (HE002)
- EU 114 Monuwest Makeup Air Heater (HE003)
- EU 115 Foundry Makeup Air Heater (HE013)
- EU 116 Foundry Makeup Air Heater (HE017)
- EU 117 Foundry Makeup Air Heater (HE018)
- EU 118 Monuwest 5 Highlite Panel Filter Stations
- EU 119 Monuwest 1 Highlite Panel Filter Station
- EU 122 Support Services Natural Gas Generator
- EU 123 Monuwest Diesel Generator
- EU 124 Water Reclaim Diesel Generator
- EU 125 Lacquer Finish Booth (DC049) Sprayer #2
- EU 126 HE 025 Hastings space heater - north
- EU 127 HE 026 Weather Rite space heater - north
- EU 128 Paint Curing Oven
- EU 129 Foundry Emergency Generator

What to do	Why to do it
EMISSION LIMITS	hdr
Volatile Organic Compounds: less than or equal to 85.0 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
RECORDKEEPING REQUIREMENTS	hdr
By the 15th day of each month, calculate and record the total VOC emissions for the previous month, using the following equation:  $\text{VOC} = \text{VOC}(\text{GP022}) + \text{VOC}(\text{GP024}) + \text{VOC}(\text{GP026}) + \text{VOC}(\text{GP027})$ Values of VOC(GPxxx) are calculated and described under the Subject Items "GPxxx."	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the 12 month rolling sum of VOC emissions, by summing the VOC emissions calculated for each of the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-7** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item:** GP 020 NOX Limit

**Associated Items:**

- EU 094 Monuwest Diesel Generator
- EU 096 Foundry Thermal Reclaim (SR002)
- EU 110 Shot Saw Area Makeup Air Heater
- EU 111 Shot Saw Area Makeup Air Heater
- EU 112 Monuwest Makeup Air Heater (HE001)
- EU 113 Monuwest Makeup Air Heater (HE002)
- EU 114 Monuwest Makeup Air Heater (HE003)
- EU 115 Foundry Makeup Air Heater (HE013)
- EU 116 Foundry Makeup Air Heater (HE017)
- EU 117 Foundry Makeup Air Heater (HE018)
- EU 122 Support Services Natural Gas Generator
- EU 123 Monuwest Diesel Generator
- EU 124 Water Reclaim Diesel Generator
- EU 126 HE 025 Hastings space heater - north
- EU 127 HE 026 Weather Rite space heater - north
- EU 128 Paint Curing Oven
- EU 129 Foundry Emergency Generator

What to do	Why to do it
EMISSION LIMITS	hdr
Nitrogen Oxides: less than or equal to 73.0 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
RECORDKEEPING REQUIREMENTS	hdr
By the 15th day of each month, calculate and record the total VOC emissions for the previous month, using the following equation:  $NOX = NOX(GP026) + NOX(GP027)$ Values of NOX(GPxxx) are calculated and described under the Subject Items "GPxxx."	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 and 5
By the 15th day of each month, calculate and record the 12 month rolling sum of NOX emissions, by summing the NOX emissions calculated for each of the previous 12 months.	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-8**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 021 HAP Limits**

**Associated Items:** EU 003 Support Services Paint Room  
 EU 057 Foundry Paint Booth (DC036)  
 EU 059 Foundry Shakeout (MS002)  
 EU 060 Foundry Induction Furnace #1 (FR008)  
 EU 063 Foundry Mixer East (SM002)  
 EU 065 Foundry Vibra Mill #1 (VM003)  
 EU 066 Pouring and Cooling (CV 0032, 0035, 0051, 0053)  
 EU 068 Foundry Induction Furnace #2 (FR009)  
 EU 069 Foundry Induction Furnace #3 (FR010)  
 EU 070 Foundry Induction Furnace #4 (FR011)  
 EU 095 Foundry VibraMill #2 (VM002)  
 EU 097 Foundry Sand Mixer #2 (SM005)  
 EU 103 Foundry Lacquer Booth (DC049) Sprayer #1  
 EU 118 Monuwest 5 Highlite Panel Filter Stations  
 EU 119 Monuwest 1 Highlite Panel Filter Station  
 EU 125 Lacquer Finish Booth (DC049) Sprayer #2

What to do	Why to do it
EMISSION LIMITS	hdr
HAPs - Total: less than or equal to 20.5 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Xylenes (mixed isomers): less than or equal to 8.5 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Methyl isobutyl ketone: less than or equal to 8.5 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Ethylbenzene: less than or equal to 9.0 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Toluene: less than or equal to 9.0 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Benzene: less than or equal to 9.0 tons/year using 12-month Rolling Sum calculated as described below.	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
RECORDKEEPING REQUIREMENTS	hdr
By the 15th day of each month, calculate and record the total HAP (THAP) emissions for the previous month, using the following equation:  $THAP = THAP(GP022) + THAP(GP024) + THAP(GP025)$ Values of THAP(GPxxx) are calculated and described under the Subject Items "GPxxx."	Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-9** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>By the 15th day of each month, calculate and record the total emissions of xylenes (mixed isomers) for the previous month, using the following equation:</p> <p>Xylene = IHAP(GP022) + IHAP(GP024) + IHAP(GP025)</p> <p>using the "IHAP(GPxxx)" values calculated for xylenes at Subject Items GP022, GP024, and GP025.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the total Benzene emissions for the previous month, using the following equation:</p> <p>Benzene = IHAP(GP022) + IHAP(GP024) + IHAP(GP025)</p> <p>using the "IHAP(GPxxx)" values calculated for benzene at Subject Items GP022, GP024, and GP025.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the total Ethylbenzene emissions for the previous month, using the following equation:</p> <p>Ethylbenzene = IHAP(GP022) + IHAP(GP024) + IHAP(GP025)</p> <p>using the "IHAP(GPxxx)" values calculated for ethylbenzene at Subject Items GP022, GP024, and GP025.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the total Toluene emissions for the previous month, using the following equation:</p> <p>Toluene = IHAP(GP022) + IHAP(GP024) + IHAP(GP025)</p> <p>using the "IHAP(GPxxx)" values calculated for toluene at Subject Items GP022, GP024, and GP025.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the total Methyl Isobutyl Ketone emissions for the previous month, using the following equation:</p> <p>Methyl Isobutyl Ketone = IHAP(GP022) + IHAP(GP024) + IHAP(GP025)</p> <p>using the "IHAP(GPxxx)" values calculated for methyl isobutyl ketone at Subject Items GP022, GP024, and GP025.</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the 12 month rolling sum of total HAP emissions, by summing the THAP emissions calculated for each of the previous 12 months.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the 12 month rolling sum of Xylene emissions, by summing the Xylene emissions calculated for each of the previous 12 months.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the 12 month rolling sum of Toluene emissions, by summing the Toluene emissions calculated for each of the previous 12 months.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the 12 month rolling sum of Benzene emissions, by summing the Benzene emissions calculated for each of the previous 12 months.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the 12 month rolling sum of Ethylbenzene emissions, by summing the Ethylbenzene emissions calculated for each of the previous 12 months.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>By the 15th day of each month, calculate and record the 12 month rolling sum of Methyl Isobutyl Ketone emissions, by summing the Methyl Isobutyl Ketone emissions calculated for each of the previous 12 months.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 022 Coating Operations**

**Associated Items:**

- CE 015 Mat or Panel Filter
- CE 023 Mat or Panel Filter
- CE 032 Mat or Panel Filter
- CE 033 Mat or Panel Filter
- CE 034 Mat or Panel Filter
- EU 003 Support Services Paint Room
- EU 057 Foundry Paint Booth (DC036)
- EU 103 Foundry Lacquer Booth (DC049) Sprayer #1
- EU 118 Monuwest 5 Highlite Panel Filter Stations
- EU 119 Monuwest 1 Highlite Panel Filter Station
- EU 125 Lacquer Finish Booth (DC049) Sprayer #2
- SV 003 Support Services Paint Room
- SV 027 Foundry Paint Booth (DC036)
- SV 042 Foundry Lacquer Booth (DC049)
- SV 043 Monuwest 6 Highlight Panel Filter Station
- SV 044 Monuwest 1 Highlight Panel Filter Station

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This applies individually to each emission unit (EUxxx) listed as an Associated Item.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This applies individually to each emission unit (EUxxx) listed as an Associated Item.	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (See Also GP029)	hdr
The Permittee shall operate and maintain the panel filter any time that any process equipment controlled by the panel filters is(are) in operation. The Permittee shall document periods of non-operation of the control equipment.  See GP029 for specific operating requirements.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
The Permittee shall operate and maintain the control equipment on EU003, EU103, and EU125 such that it achieves an overall control efficiency (capture efficiency x panel control efficiency), for Total Particulate Matter: greater than or equal to 85 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment on EU003, EU103, and EU125 such that it achieves an overall control efficiency (capture efficiency x panel control efficiency), for PM < 10 micron: greater than or equal to 85 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment on EU057, EU118, and EU119 such that it achieves an overall control efficiency (capture efficiency x panel control efficiency), for Total Particulate Matter: greater than or equal to 68 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
The Permittee shall operate and maintain the control equipment on EU057, EU118, and EU119 such that it achieves an overall control efficiency (capture efficiency x panel control efficiency), for PM < 10 micron: greater than or equal to 68 percent control efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
EU003 Paint Booth Total Enclosure: The Permittee shall close the paint booth doors prior to and during any coating application in order to achieve a total enclosure.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-11 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

EU003 Paint Booth Total Enclosure Monitoring and Recordkeeping: The Permittee shall keep a log of all EU003 coating activities to demonstrate the booth doors are closed during all coating application. Each person that applies coating in EU003 shall make a daily log entry on the date the coatings are applied. The log shall be dated and signed by each person, and shall confirm if the booth doors were closed during all coating applications made by that person on that date. Failure to close the doors during coating application is a deviation that must be reported on the semi-annual deviation report requirement in Table B.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0070, subp. 1(A)
Calculation Of Emissions To Be Used At GP018, GP019, and GP020	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate and record the total quantity of all coatings and other VOC and HAP containing materials used in the emission units (EUxxx) listed as Associated Items. This shall be based on written usage logs.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record:  1) The total usage of VOC containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC, solids, and individual HAP contents of each material used, as determined by the Material Content Requirement of this permit.  2) The total quantity of VOC containing materials shipped out as waste for the previous calendar month.	Minn. R. 7007.0800, subp. 4 and 5
Material Content. VOC, HAPs, and Solids contents in coating materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. When using the MSDS as the basis of calculating particulate emissions, the conservative assumption is made that PM consists entirely of PM less than 10 microns or less than 2.5 microns. Other alternative methods approved by the MPCA may be used to determine the VOC, HAPs, and solids contents. The Commissioner reserves the right to require the Permittee to determine the VOC, HAP, and solids contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS.	Minn. R. 7007.0800, subps. 4 and 5
Waste Credit: If the Permittee elects to obtain credit for HAPs, solids, and/or VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC, solids, and/or total and individual HAP content for each credited shipment.  1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, solids, total HAP, and each individual HAP, excluding water.  2) The Permittee may use supplier data for raw materials to determine the VOC, solids, and total and individual HAP contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC, solids, and total and individual HAP content of any of the materials.	Minn. R. 7007.0800, subps. 4 and 5
Maximum Contents of Materials: The Permittee assumed certain worst-case contents of materials when determining the short term potential to emit of units in GP022. These assumptions are listed in Appendix E of this permit. Changing to a material that has a higher content of any of the given pollutants is considered a change in method of operation that must be evaluated under Minn. R. 7007.1200, subp. 3 to determine if a permit amendment or notification is required under Minn. R. 7007.1150.	Minn. R. 7005.0100, subp. 35a
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the VOC, individual HAP, Total HAP, and PM emissions for the previous month (VOC(GP022), IHAP(GP022), THAP(GP022), and PM(GP022)), using the daily usage records and the calculations below. It can be assumed that $PM_{2.5} = PM_{10} = PM$ , and therefore $PM(GP022) = PM_{10}(GP022) = PM_{2.5}(GP022)$ .  These calculated values will be used in the calculations required by GP018, GP019, and GP020.	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-12**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- VOC Emissions.</p> <p>The Permittee shall calculate VOC emissions in tons per month using the following equations:</p> $\text{VOC}(\text{GP022}) = \text{V} - \text{W}$ $\text{V} = (\text{A1} \times \text{B1}) + (\text{A2} \times \text{B2}) + (\text{A3} \times \text{B3}) + \dots$ $\text{W} = (\text{C1} \times \text{D1}) + (\text{C2} \times \text{D2}) + \text{C3} \times \text{D3}) + \dots$	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly VOC Emissions Calculation Continued:</p> <p>where:</p> <p>V = total VOC used in tons/month;</p> <p>A# = amount of each VOC-containing material used, in tons/month;</p> <p>B# = weight percent VOC in A#, as a fraction;</p> <p>W = the amount of VOC shipped in waste, in tons/month;</p> <p>C# = amount, in tons/month, of each VOC-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and</p> <p>D# = weight percent of VOC in C#, as a fraction.</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- Individual HAP Emissions. The Permittee shall calculate each individual HAP emissions in tons per month using the following equations:</p> $\text{IHAP}(\text{GP022}) = \text{H} - \text{W}$ $\text{H} = (\text{A1} \times \text{B1}) + (\text{A2} \times \text{B2}) + (\text{A3} \times \text{B3}) + \dots$ $\text{W} = (\text{C1} \times \text{D1}) + (\text{C2} \times \text{D2}) + (\text{C3} \times \text{D3}) + \dots$	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly HAP Emissions Calculation Continued:</p> <p>Where:</p> <p>H = the amount of each pollutant (each individual HAP), used, in tons/month.</p> <p>A# = Amount of each HAP-containing material used in the previous month, in tons/month.</p> <p>B# = weight percent of each individual or total HAP in A#, as a fraction (e.g., 50% is 0.50).</p> <p>W = the amount of each pollutant (each individual HAP) shipped in waste, in tons/month.</p> <p>C# = amount, in tons/month, of each HAP-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero.</p> <p>D# = weight percent of each individual or total HAP in C#, as a fraction.</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- Particulate Emissions.</p> <p>The Permittee shall calculate particulate emissions (it is assumed that PM = PM10 = PM2.5) in tons per month using the following equations:</p> $\text{PM}(\text{GP022}) = \text{PM10}(\text{GP022}) = \text{PM2.5}(\text{GP022}) = \text{S}(1 - \text{CE})(1 - \text{TE}) - \text{W}$ $\text{S} = (\text{A1} \times \text{B1}) + (\text{A2} \times \text{B2}) + (\text{A3} \times \text{B3}) + \dots$ $\text{W} = (\text{C1} \times \text{D1}) + (\text{C2} \times \text{D2}) + (\text{C3} \times \text{D3}) + \dots$	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Particulate Emissions Calculation Continued:</p> <p>Where:</p> <p>S = total solids used in tons/month;</p> <p>CE = overall control efficiency, as a fraction. This shall be 0.85 for EU003/CE015, and 0.68 for all other spray booths/controls;</p> <p>TE = transfer efficiency, as a fraction. This shall be 0.70 for EU057, EU103, and EU125, and shall be 0.75 for EU003, EU118 and EU119, unless otherwise approved by the MPCA in writing.</p> <p>A# = amount of each solids-containing material sprayed, in tons/month;</p> <p>B# = weight percent solids in A#, as a fraction;</p> <p>W = the amount of solids shipped in waste, in tons/month;</p> <p>C# = amount, in tons/month, of each solids-containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and</p> <p>D# = weight percent of solids in C#, as a fraction.</p>	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-13**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

Monthly Calculation -- Total HAP Emissions:

Minn. R. 7007.0800, subp. 4 and 5

Monthly calculations of the Total HAP (THAP(GP022)) emissions shall be calculated by summing all of the individual HAP (IHAP(GP022)) calculated using the formulas specified in this permit.



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-14**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 023 Monuwest Finishing Operations****Associated Items:** CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 025 Fabric Filter - Low Temperature, i.e., T&lt;180 Degrees F

EU 054 Monuwest Finishing (North DC021)

EU 055 Monuwest Finishing (West DC020)

SV 029 Monuwest North Finishing (DC021)

SV 030 Monuwest West Finishing (DC020)

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. This limit applies individually to each emission unit (EUxxx) listed in GP023.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies individually to each emission unit (EUxxx) listed in GP023.	Minn. R. 7011.0715, subp. 1(B)
EMISSION UNIT DESCRIPTION & RECORDKEEPING	hdr
EU054 includes several sandblasting units from which emissions are collected and routed to a baghouse (CE024) exhausting to the atmosphere. EU055 includes several pieces of cutting and finishing equipment from which emissions are collected and routed to a baghouse (CE025). Finishing equipment from which emissions are not collected or for which collected emissions are exhausted inside the building are considered insignificant activities and are not included in EU054 or EU055.	Minn. R. 7007.0800, subp. 5
PM/PM10/PM2.5 PreCap: The Permittee may make changes to the cutting and finishing equipment, provided the changes are in compliance with all permit requirements. If the Permittee replaces, adds, or modifies a PM-emitting operation classified as EU054 or EU055, such equipment is subject to the PM and opacity limits listed above, as well as all of the requirements of GP023. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.  For modifications that solely involve equipment covered by the PM/PM10/PM2.5 PreCap, the Permittee is not required to complete PM/PM10/PM2.5 calculations described in Minn. R. 7007.1200, subp. 2.  A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit, including changes to emission calculations required by GP023.	Minn. R. 7007.0800, subp. 5 and 11
Recordkeeping: The Permittee shall keep a complete description of each piece of equipment described by EU054 and EU055 at any time. The description shall include the manufacturer, model number, capacity, date of original installation, and how the emissions are characterized and included in the calculations of PM(GP023), PM10(GP023), and PM2.5(GP023) (for example, if the emissions will be included in the calculation segment for sandblasting, polishing, or splitters.). The description shall also identify each piece of equipment using a unique identification (ID) number.	Minn. R. 7007.0800, subp. 5
CONTROL REQUIREMENTS (See Also GP028)	hdr
The Permittee shall operate and maintain each fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 79.2 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 74.4 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
Calculation Of Emissions To Be Used At GP018	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-15 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Recordkeeping: By the 15th day of each month, the Permittee shall calculate and record the total quantity of the following:</p> <p>1) the pounds of abrasives use in the north sandblast operation (A)  2) the square feet of granite hand polished (B)  3) the tons of granite split (C)  4) the number of markers sandblasted (D)</p>	<p>Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM and PM10 emissions for the previous month (PM(GP023) and PM10(GP023)), using the monthly usage records and the calculations below. It can be assumed that PM2.5 = PM10, and therefore PM10(GP023) = PM2.5(GP023).</p> <p>These calculated values will be used in the calculations required by GP018.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>Monthly Calculation -- PM Emissions</p> <p>The Permittee shall calculate PM emissions in tons per month using the following equation:</p> $PM(GP023) = \{ [ (A \times EF(A) / 1000) + (D \times EF(D)) ] \times 0.01 \times 0.0005 \} + \{ [(B \times EF(B)) + (C \times EF(C))] \times 0.208 \times 0.0005 \}$ <p>(continued below)</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>(Monthly PM calculations continued)</p> <p>Where:</p> <p>A, B, C, and D are as defined above</p> <p>EF(A) = 91 lb/1000 lb of abrasive  EF(B) = 0.048 lb/square feet of hand polished granite  EF(C) = 0.0054 lb/ton of granite split  EF(D) = 0.49 lb/marker  0.01 = 1 - overall control efficiency of the fabric filter on the sandblasting operations  0.208 = 1- overall control efficiency of the fabric filter on the other operations  0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Monthly Calculation -- PM10 and PM2.5 Emissions</p> <p>The Permittee shall calculate PM10 emissions in tons per month using the following equation:</p> $PM10(GP023) = PM2.5(GP023)$ $PM10(GP023) = \{ [ (A \times EF(A) / 1000) + (D \times EF(D)) ] \times 0.07 \times 0.0005 \} + \{ [(B \times EF(B)) + (C \times EF(C))] \times 0.256 \times 0.0005 \}$ <p>(continued below)</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>(Monthly PM10 calculations continued)</p> <p>Where:</p> <p>A, B, C, and D are as defined above</p> <p>EF(A) = 13 lb/1000 lb of abrasive  EF(B) = 0.048 lb/square feet of hand polished granite  EF(C) = 0.0054 lb/ton of granite split  EF(D) = 0.49 lb/marker  0.07 = 1 - overall control efficiency of the fabric filter on the sandblasting operations  0.256 = 1- overall control efficiency of the fabric filter on the other operations  0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-16**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 024 Sand Handling Operations****Associated Items:** CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 059 Foundry Shakeout (MS002)

EU 063 Foundry Mixer East (SM002)

EU 065 Foundry Vibra Mill #1 (VM003)

EU 095 Foundry VibraMill #2 (VM002)

EU 097 Foundry Sand Mixer #2 (SM005)

SV 034 Foundry Sand Handling (DC047)

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. This limit applies individually to each emission unit (EUxxx) listed in GP024.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies individually to each emission unit (EUxxx) listed in GP024.	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (See Also GP028)	hdr
The Permittee shall operate and maintain each fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 79.2 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 74.4 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
Calculation Of Emissions To Be Used At GP018, GP019, and GP020	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate and record the total quantity of the following:  1) the tons of metal charged (An) 2) the tons of sand through EU063 (Bn) 3) the tons of sand through EU097 (Cn) 4) the tons of sand through EU065 (Dn) 5) the tons of sand through EU095 (En) 6) the quantity of VOC and/or HAP containing materials used in the sand mixers, including the VOC content and HAP content for each individual HAP	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the VOC, PM, PM10, individual HAP, and total HAP emissions for the previous month (VOC(GP024), PM(GP024), PM10(GP024), IHAP(GP024), and THAP(GP024)), using the daily usage records and the calculations below. It can be assumed that PM2.5 = PM10, and therefore PM10(GP024) = PM2.5(GP024).  These calculated values will be used in the calculations required by GP018, GP019, and GP020.	Minn. R. 7007.0800, subp. 4 and 5
VOC and HAP Content: The VOC and HAP content of all materials shall be determined by the Material Safety Data Sheet (MSDS) or Certificate of Analysis (COA) provided by the supplier of each material used. If the MSDS or COA gives the VOC and HAP content as a range, the highest number in the range shall be used for all permit calculations. Alternative methods approved by the MPCA may be used to determine the VOC and HAP content. The MPCA reserves the right to require the Permittee to determine the VOC and HAP content of any material according to EPA and/or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supersede the MSDS or COA data. A copy of the MSDS, COA, or other record of the VOC and HAP content shall be kept at the facility.	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-17**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM Emissions</p> <p>The Permittee shall calculate PM emissions in tons per month using the following equation:</p> $PM(GP024) = \{ [(A \times EF(A)) \times 0.208 \times 0.0005] + [(B + C + D + E) \times EF(B)] \times 0.01 \times 0.0005 \}$ <p>Where:  A = the sum of all individual An values recorded during the previous month  B = the sum of all individual Bn values recorded during the previous month  C = the sum of all individual Cn values recorded during the previous month  D = the sum of all individual Dn values recorded during the previous month  E = the sum of all individual En values recorded during the previous month</p> <p>An, Bn, Cn, Dn, and En are as defined above</p> <p>EF(A) = 3.2 lb/ton of metal charged  EF(B) = 3.6 lb/ton of sand</p> <p>0.208 = 1 - overall control efficiency of the fabric filter on the shakeout operation  0.01 = 1 - overall control efficiency of the fabric filter on the other operations  0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Monthly Calculation -- PM10 and PM2.5 Emissions</p> <p>The Permittee shall calculate PM10 emissions in tons per month using the following equation:</p> $PM10(GP024) = PM2.5(GP024)$ $PM10(GP024) = \{ [(A \times EF(A)) \times 0.256 \times 0.0005] + [(B + C + D + E) \times EF(B)] \times 0.07 \times 0.0005 \}$ <p>Where:  A = the sum of all individual An values recorded during the previous month  B = the sum of all individual Bn values recorded during the previous month  C = the sum of all individual Cn values recorded during the previous month  D = the sum of all individual Dn values recorded during the previous month  E = the sum of all individual En values recorded during the previous month</p> <p>An, Bn, Cn, Dn, and En are as defined above</p> <p>EF(A) = 2.24 lb/ton of metal charged  EF(B) = 0.54 lb/ton of sand</p> <p>0.256 = 1 - overall control efficiency of the fabric filter on the shakeout operation  0.07 = 1 - overall control efficiency of the fabric filter on the other operations  0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Monthly Calculation -- VOC Emissions (EU063 and EU097 only)</p> <p>Monthly emissions of VOC shall be calculated in tons per month as follows:</p> $VOC(GP024) = [(R1 \times VR1 \times VER1 / 2000) + (R2 \times VR2 \times VER2 / 2000) + \dots \text{etc.}] + [(C1 \times VC1 \times VEC1 / 2000) + (C2 \times VC2 \times VEC2 / 2000) \dots \text{etc.}]$	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>Monthly VOC calculations, continued</p> <p>Where:</p> <p>R1, R2, etc. = the quantity of resin used in each binder formula during the previous month (pounds)  VR1, VR2, etc. = the VOC content of the resin in each binder formula used during the previous month (VOC, weight percent)  VER1, VER2, etc. = the evaporation rate of the VOC for the resin in each binder formula used during the previous month (percent) (See Note 1)  C1, C2, etc. = the quantity of catalyst used in each binder formula during the previous month (pounds)  VC1, VC2, etc. = the VOC content of the catalyst in each binder formula used during the previous month (VOC, weight percent)  VEC1, VEC2, etc. = the evaporation rate of VOC for the catalyst in each binder formula used during the previous month (percent) (See Note 1)</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-18**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- Individual HAP Emissions (EU063 and EU097 only)</p> <p>Monthly emissions of each individual HAP shall be calculated in tons per month as follows:</p> $IHAP(GP024) = [(R1 \times HR1 \times HER1 / 2000) + (R2 \times HR2 \times HER2 / 2000) + \dots \text{etc.}] + [(C1 \times HC1 \times HEC1 / 2000) + (C2 \times HC2 \times HEC2 / 2000) \dots \text{etc.}]$	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Individual HAP calculations, continued</p> <p>Where:</p> <p>R1, R2, etc. = the quantity of resin used in each binder formula during the previous month (pounds)</p> <p>HR1, HR2, etc. = the HAP content of the resin in each binder formula used during the previous month (individual HAP, weight percent)</p> <p>HER1, HER2, etc. = the evaporation rate of the individual HAP for the resin in each binder formula used during the previous month (percent) (See Note 1)</p> <p>C1, C2, etc. = the quantity of catalyst used in each binder formula during the previous month (pounds)</p> <p>HC1, HC2, etc. = the HAP content of the catalyst in each binder formula used during the previous month (individual HAP, weight percent)</p> <p>HEC1, HEC2, etc. = the evaporation rate of the individual HAP for the catalyst in each binder formula used during the previous month (percent) (See Note 1)</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Calculation -- Total HAP Emissions:</p> <p>Monthly calculations of the Total HAP (THAP(GP024)) emissions shall be calculated by summing all of the individual HAP (IHAP(GP024)) calculated using the formulas specified in this permit.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>NOTE 1: Evaporation rates for individual HAPs from resins and catalysts shall be those provided in manufacturer's data; if manufacturer's data is not available, use the rates provided in Appendix C (from "Form R Reporting of Binder Chemicals Used in Foundries", Second Edition (1998), published by the American Foundrymen's Society, Inc. and the Casting Industry Suppliers Association).</p> <p>If manufacturer's data is used, the Permittee shall keep a record of the data and all supporting documentation. Any changes to the evaporation rate shall be submitted to the MPCA with the annual compliance certification. If no evaporation rate data is available, an evaporation rate of 50% shall be used.</p> <p>The Permittee may propose to use a resin or catalyst-specific evaporation rate derived from MPCA approved performance tests. If approved by the MPCA, this resin or catalyst-specific evaporation rate shall be used.</p>	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-19**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 025 Foundry Melting/Pouring/Cooling****Associated Items:** CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 060 Foundry Induction Furnace #1 (FR008)

EU 066 Pouring and Cooling (CV 0032, 0035, 0051, 0053)

EU 068 Foundry Induction Furnace #2 (FR009)

EU 069 Foundry Induction Furnace #3 (FR010)

EU 070 Foundry Induction Furnace #4 (FR011)

SV 032 Foundry Pouring/Cooling (DC046)

What to do	Why to do it
<b>EMISSION LIMITS</b>	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. This limit applies individually to each emission unit (EUxxx) listed in GP025.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies individually to each emission unit (EUxxx) listed in GP025.	Minn. R. 7011.0715, subp. 1(B)
<b>CONTROL REQUIREMENTS (See Also GP028)</b>	hdr
The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 79.2 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 74.4 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
<b>Calculation Of Emissions To Be Used At GP018 and GP020</b>	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate and record the total tons of metal charged in the furnaces (An).	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM, PM10, individual HAP, and total HAP emissions for the previous month (PM(GP025), PM10(GP025), IHAP(GP025), and THAP(GP025)), using the daily usage records and the calculations below. It can be assumed that PM2.5 = PM10, and therefore PM10(GP025) = PM2.5(GP025).  These calculated values will be used in the calculations required by GP018 and GP020.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Calculation -- PM Emissions  The Permittee shall calculate PM emissions in tons per month using the following equation:  $PM(GP025) = (A \times 5.586) \times 0.208 \times 0.0005$  A = the total tons of metal charged during the previous month, = the sum of all values of An (defined above) recorded each day during the previous month 5.586 = the total emission factor for melting + pouring/cooling, in lb/ton of metal charged 0.208 = 1 - overall control efficiency of the fabric filter on the charging and pouring operations 0.0005 = 1 ton/2000 lb	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-20**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM10 Emissions</p> <p>The Permittee shall calculate PM10 (assumed = PM2.5) emissions in tons per month using the following equation:</p> <p><math>PM10(GP025) = PM2.5(GP025)</math></p> <p><math>PM10(GP025) = (A \times 3.198) \times 0.256 \times 0.0005</math></p> <p>A = the total tons of metal charged during the previous month, = the sum of all values of An (defined above) recorded each day during the previous month  3.198 = the total emission factor for melting + pouring/cooling, in lb/ton of metal charged  0.256 = 1 - overall control efficiency of the fabric filter on the charging and pouring operations  0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- Individual HAP Emissions</p> <p>The Permittee shall calculate the following individual HAP emissions in tons per month using the following equations:</p> <p>Lead: <math>IHAP(GP025) = A \times 0.135 \times 0.0005</math>  Antimony: <math>IHAP(GP025) = A \times 0.0092 \times 0.0005</math>  Nickel: <math>IHAP(GP025) = A \times 0.0368 \times 0.0005</math></p> <p>A = the total tons of metal charged during the previous month, = the sum of all values of An (defined above) recorded each day during the previous month  0.135 = the total lead emission factor for melting + pouring/cooling, in lb/ton of metal charged  0.0092 = the total antimony emission factor for melting + pouring/cooling, in lb/ton of metal charged  0.0368 = the total nickel emission factor for melting + pouring/cooling, in lb/ton of metal charged  0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Calculation -- Total HAP Emissions:</p> <p>Monthly calculations of the Total HAP (THAP(GP025)) emissions shall be calculated by summing all of the individual HAP (IHAP(GP025)) calculated using the formulas specified in this permit.</p>	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-21**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 026 Direct Heating Equipment (Significant Sources)**

**Associated Items:** EU 096 Foundry Thermal Reclaim (SR002)  
 EU 110 Shot Saw Area Makeup Air Heater  
 EU 111 Shot Saw Area Makeup Air Heater  
 EU 112 Monuwest Makeup Air Heater (HE001)  
 EU 113 Monuwest Makeup Air Heater (HE002)  
 EU 114 Monuwest Makeup Air Heater (HE003)  
 EU 115 Foundry Makeup Air Heater (HE013)  
 EU 116 Foundry Makeup Air Heater (HE017)  
 EU 117 Foundry Makeup Air Heater (HE018)  
 EU 126 HE 025 Hastings space heater - north  
 EU 127 HE 026 Weather Rite space heater - north  
 EU 128 Paint Curing Oven

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each emission unit (EUxxx) listed in GP026.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies individually to each emission unit (EUxxx) listed in GP026.	Minn. R. 7011.0610, subp. 1(A)(2)
Fuel type: Natural gas and propane only, by design.	Minn. R. 7005.0100, subp. 35a
Calculation Of Emissions To Be Used At GP018, GP019, and GP021	hdr
<p>Monthly Recordkeeping: By the 15th day of each month, the Permittee shall calculate and record the total quantities of natural gas (A, in million cubic feet (mmcf)) and propane (B, in 1000 gallons (Mgal)), combusted in the units listed in GP026.</p> <p>For purposes of this requirement, records may be based on monthly utility readings and delivery invoices. It may be assumed that the monthly utility reading minus the previous utility reading equals the natural gas combusted during the month. It may be assumed that the quantity of propane delivered during any month based on delivery invoices reflects the quantity of propane combusted during that month (if no propane deliveries are received during the month, it may be assumed that no propane was combusted during the month).</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM, NOX and VOC emissions for the previous month (PM(GP026), NOX(GP026), and VOC(GP026), using the daily usage records and the calculations below. It can be assumed that PM2.5 = PM10 = PM, and therefore PM(GP026) = PM10(GP026) = PM2.5(GP026).</p> <p>These calculated values will be used in the calculations required by GP018, GP019, and GP021.</p>	Minn. R. 7007.0800, subp. 4 and 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-22**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM Emissions</p> <p>The Permittee shall calculate PM emissions in tons per month using the following equation:</p> $PM(GP026) = PM_{10}(GP026) = PM_{2.5}(GP026)$ $PM(GP026) = [ (A \times 7.6) + (B \times 0.7) ] \times 0.0005$ <p>A = the total quantity of natural gas combusted during the previous month, as described above</p> <p>7.6 = the emission factor for natural gas combustion, in lb/mmcf of gas</p> <p>B = the total quantity of propane combusted during the previous month, as described above</p> <p>0.7 = the emission factor for propane combustion, in lb/Mgal of propane</p> <p>0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- VOC Emissions</p> <p>The Permittee shall calculate VOC emissions in tons per month using the following equation:</p> $VOC(GP026) = [ (A \times 5.5) + (B \times 1.0) ] \times 0.0005$ <p>A = the total quantity of natural gas combusted during the previous month, as described above</p> <p>5.5 = the emission factor for natural gas combustion, in lb/mmcf of gas</p> <p>B = the total quantity of propane combusted during the previous month, as described above</p> <p>1.0 = the emission factor for propane combustion, in lb/Mgal of propane</p> <p>0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- NOX Emissions:</p> <p>The Permittee shall calculate VOC emissions in tons per month using the following equation:</p> $NOX(GP026) = [ (A \times 100) + (B \times 13) ] \times 0.0005$ <p>A = the total quantity of natural gas combusted during the previous month, as described above</p> <p>100 = the emission factor for natural gas combustion, in lb/mmcf of gas</p> <p>B = the total quantity of propane combusted during the previous month, as described above</p> <p>13 = the emission factor for propane combustion, in lb/Mgal of propane</p> <p>0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-23**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 027 Engines**

**Associated Items:** EU 094 Monuwest Diesel Generator  
 EU 122 Support Services Natural Gas Generator  
 EU 123 Monuwest Diesel Generator  
 EU 124 Water Reclaim Diesel Generator  
 EU 129 Foundry Emergency Generator

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Sulfur Dioxide: less than or equal to 0.50 lbs/million Btu heat input This limit applies individually to each emission unit (EUxxx) listed in GP026.	Minn. R. 7011.2300, subp. 2
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained. This limit applies individually to each emission unit (EUxxx) listed in GP027.	Minn. R. 7011.2300, subp. 1
Fuel type (EU094, EU123, and EU124): Diesel fuel only, by design.	Minn. R. 7005.0100, subp. 35a
Fuel type (EU122 and EU129): Natural Gas/Propane only, by design.	Minn. R. 7005.0100, subp. 35a
Calculation Of Emissions To Be Used At GP018, GP019, and GP021	hdr
<p>Weekly Recordkeeping: Once each calendar week, the Permittee shall calculate and record the hours of operation of each engine listed in GP027 during the previous calendar week, as follows:</p> <p>An = weekly hours of operation of EU094            Bn = weekly hours of operation of EU122            Cn = weekly hours of operation of EU123            Dn = weekly hours of operation of EU124            En = weekly hours of operation of EU129</p>	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>Monthly Recordkeeping: By the 15th day of each month, the Permittee shall calculate and record the total hours of operation of each engine during the previous month, where:</p> <p>A = sum of all values of An recorded during the previous month.            B = sum of all values of Bn recorded during the previous month            C = sum of all values of Cn recorded during the previous month            D = sum of all values of Dn recorded during the previous month            E = sum of all values of En recorded during the previous month</p> <p>"Previous Month" shall include each calendar week ending during the calendar month.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM, NOX and VOC emissions for the previous month (PM(GP027), NOX(GP027), and VOC(GP027), using the daily and monthly hours records and the calculations below. It can be assumed that PM2.5 = PM10 = PM, and therefore PM(GP027) = PM10(GP027) = PM2.5(GP027).</p> <p>These calculated values will be used in the calculations required by GP018, GP019, and GP021.</p>	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-24**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM Emissions</p> <p>The Permittee shall calculate PM emissions in tons per month using the following equation:</p> $PM(GP027) = PM_{10}(GP027) = PM_{2.5}(GP027)$ $PM(GP027) = [(A \times 0.482) + (B \times 0.020) + (C \times 0.660) + (D \times 0.440) + (E \times 0.001)] \times 0.0005$ <p>A, B, C, D, and E are as defined above.</p> <p>0.482 = the potential hourly PM emission rate* of EU094  0.020 = the potential hourly PM emission rate* of EU122  0.660 = the potential hourly PM emission rate* of EU123  0.440 = the potential hourly PM emission rate* of EU124  0.001 = the potential hourly PM emission rate* of EU129  0.0005 = 1 ton/2000 lb</p> <p>* based on equipment capacity, allowed fuels, and AP-42 emission factors for the allowed fuels</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- VOC Emissions</p> <p>The Permittee shall calculate VOC emissions in tons per month using the following equation:</p> $VOC(GP027) = [(A \times 0.541) + (B \times 0.242) + (C \times 0.741) + (D \times 0.494) + (E \times 0.008)] \times 0.0005$ <p>A, B, C, D, and E are as defined above.</p> <p>0.541 = the potential hourly VOC emission rate* of EU094  0.242 = the potential hourly VOC emission rate* of EU122  0.741 = the potential hourly VOC emission rate* of EU123  0.494 = the potential hourly VOC emission rate* of EU124  0.008 = the potential hourly VOC emission rate* of EU129  0.0005 = 1 ton/2000 lb</p> <p>* based on equipment capacity, allowed fuels, and AP-42 emission factors for the allowed fuels</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- NOX Emissions:</p> <p>The Permittee shall calculate NOX emissions in tons per month using the following equation:</p> $NOX(GP027) = [(A \times 6.789) + (B \times 8.371) + (C \times 9.30) + (D \times 6.20) + (E \times 0.269)] \times 0.0005$ <p>A, B, C, D, and E are as defined above.</p> <p>6.789 = the potential hourly NOX emission rate* of EU094  8.371 = the potential hourly NOX emission rate* of EU122  9.30 = the potential hourly NOX emission rate* of EU123  6.20 = the potential hourly NOX emission rate* of EU124  0.269 = the potential hourly NOX emission rate* of EU129  0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subp. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-25**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 028 Baghouse Requirements**

**Associated Items:** CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 022 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 025 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 031 Fabric Filter - Low Temperature, i.e., T<180 Degrees F  
 CE 035 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
EMISSION AND OPERATIONAL LIMITS	hdr
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column (CE011, CE012, CE025), unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 6.0 inches of water column (CE014, CE024, CE031), unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column (CE035), unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3 based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. The new range shall be implemented upon receipt of the Notice of Compliance letter granting preliminary approval. The range is final upon issuance of a permit amendment incorporating the change.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
MONITORING AND RECORDKEEPING	hdr
Visible Emissions: The Permittee shall check each fabric filter stack (SV028 for CE011, SV032 for CE012, SV034 for CE014, SV011 for CE022, SV028 for CE024, SV029 for CE025, SV035 for CE031, and SV045 for CE035) for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across each fabric filter, once each day of operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
The control equipment is considered listed control equipment under Minn. R. 7011.0060 to 7011.0080. The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-26**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation.	Minn. R. 7007.0800, subp. 4
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5 and 14
Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0072, subp. 2(B), and the Permittee shall maintain a copy of the evaluation and certification on site. (This applies to any fabric filter where the collection point for any emission unit does not qualify as a total enclosure.)	Minn. R. 7007.0800, subps. 4, 5 and 14
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. (This applies to any fabric filter where the collection point for any emission unit does not qualify as a total enclosure.)	Minn. R. 7007.0800, subps. 4, 5 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-27**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: GP 029 Panel Filter Requirements****Associated Items:** CE 015 Mat or Panel Filter

CE 023 Mat or Panel Filter

CE 032 Mat or Panel Filter

CE 033 Mat or Panel Filter

CE 034 Mat or Panel Filter

What to do	Why to do it
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of each panel filter with respect to alignment, saturation, tears, holes and any other condition that may affect the filter's performance. The Permittee shall maintain a daily written record of filter inspections.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14
Corrective Actions: If the filters or any of their components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5, and 14
Initial Hood Certification and Evaluation: The control device hood must conform to the requirements listed in Minn. R. 7011.0072, subp. 2(B), and the Permittee shall maintain a copy of the evaluation and certification on site. (This applies to CE023, CE033, and CE034.)	Minn. R. 7007.0800, subps. 4, 5 and 14
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method. The Permittee shall maintain a copy of the annual evaluation on site. (This applies to CE023, CE033, and CE034.)	Minn. R. 7007.0800, subps. 4, 5 and 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-28**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item:** EU 029 Tumbler (DC006)**Associated Items:** CE 022 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 018 PM Limits

SV 011 GS Tumbler

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (See Also GP028)	hdr
The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 93 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
Calculation Of Emissions To Be Used At GP018	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate and record the total quantity of granite processed through EU029 (An), in tons.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM and PM10 emissions for the previous month (PM(EU029) and PM10(EU029)), using the daily usage records and the calculations below. It can be assumed that PM2.5 = PM10, and therefore PM10(EU029) = PM2.5(EU029).  These calculated values will be used in the calculations required by GP018.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Calculation -- PM Emissions Before Stack Testing is Completed  The Permittee shall calculate PM emissions in tons per month using the following equation:  $PM(EU029) = (A \times EF) \times 0.01 \times 0.0005$  Where:  A = the sum of all individual An values recorded during the previous month, in tons  An is as defined above  EF = 66 lb/ton of granite processed  0.01 = 1 - overall control efficiency of the fabric filter  0.0005 = 1 ton/2000 lb	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-29**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM Emissions After Stack Testing is Completed</p> <p>The Permittee shall calculate PM emissions in tons per month using the following equation:</p> $PM(EU029) = (A \times EF) \times 0.0005$ <p>Where:</p> <p>A = the sum of all individual An values recorded during the previous month, in tons</p> <p>An is as defined above</p> <p>EF = The controlled controlled emission rate demonstrated during the most recent performance test, in lb/ton of granite processed.</p> <p>0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subps. 4 and 5
<p>Monthly Calculation -- PM10 and PM2.5 Emissions</p> <p>The Permittee shall calculate PM10 emissions in tons per month using the following equation:</p> $PM10(EU029) = (A \times EF) \times 0.07 \times 0.0005 = PM2.5(EU029)$ <p>Where:</p> <p>A = the sum of all individual An values recorded during the previous month, in tons</p> <p>An is as defined above</p> <p>EF = 3.5 lb/ton of granite processed</p> <p>0.07 = 1 - overall control efficiency of the fabric filter</p> <p>0.0005 = 1 ton/2000 lb</p>	Minn. R. 7007.0800, subps. 4 and 5
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Initial Startup following relocation, to measure emissions of Total Particulate Matter.	Minn. R. 7017.2020, subp. 1
<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.</p> <p>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</p> <p>The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-30**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: EU 094 Monuwest Diesel Generator****Associated Items:** GP 018 PM Limits

GP 019 VOC Limit

GP 020 NOX Limit

GP 027 Engines

SV 041 Monuwest Emergency Generator Stack

What to do	Why to do it
SUBPART ZZZZ REQUIREMENTS (See also GP027)	hdr
Comply with the applicable emission limitations and operating requirements of Subpart ZZZZ no later than May 3, 2013.	40 CFR Section 63.6595(a)(1); Minn. R. 7011.8150
The Permittee must change the oil and filter every 1,000 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.	40 CFR Section 63.6603(a); 40 CFR Section 63.6625(h); Minn. R. 7011.8150
The Permittee must be in compliance with the applicable emission limitations and applicable operating limitations of 40 CFR Part 63, Subpart ZZZZ, at all times.	40 CFR Section 63.6605(a); Minn. R. 7011.8150
The Permittee must at all times operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not required the Permittee to make any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	40 CFR Section 63.6605(b); Minn. R. 7011.8150
The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions.	40 CFR Section 63.6625(e); 40 CFR Section 63.6655(d); Minn. R. 7011.8150
The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in 40 CFR Section 63.6595(a). The oil analysis must be performed at the same frequency specified for changing the oil in 40 CFR Section 63.6595(a). The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.  continued below:	40 CFR Section 63.6625(i); Minn. R. 7011.8150
continued from above:  If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.	40 CFR Section 63.6625(i); Minn. R. 7011.8150
The Permittee must:  - Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or  - Develop and follow a permittee-developed maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.	40 CFR Section 63.6640(a); Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-31**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>The Permittee must keep the following records:</p> <p>(1) A copy of each notification and report submitted to comply with Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR Section 63.10(b)(2)(xiv).</p> <p>(2) Records of the occurrence and duration of each malfunction of operation ( i.e., process equipment) or the air pollution control and monitoring equipment.</p> <p>(3) (does not apply)</p> <p>(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.</p> <p>(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR Section 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.</p>	40 CFR Section 63.6655(a); Minn. R. 7011.8150
<p>The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the stationary RICE and after-treatment control device (if any) are operated and maintained according to the maintenance plan.</p>	40 CFR Section 63.6655(e); Minn. R. 7011.8150
<p>a. Records must be in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>b. As specified in 40 CFR Section 63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>c. Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1).</p>	40 CFR Section 63.6660; Minn. R. 7011.8150
<p>The following parts of the general provisions apply:</p> <p>40 CFR Sections 63.1-63.5; 63.6(a); 63.3(b)(1)-(5); 63.6(b)(7); 63.6(c)(1)-(2); 63.6(c)(5); 63.6(f)(2)-(3); 63.6(g)(1)-(3); 63.6(i)-(j); 63.8(a)(1)-(2); 63.8(b)(1)-(3); 63.8(c)(1)(i)-(iii); 63.8(f)(1)-(6); 63.8(g); 63.9(a); 63.9(b)(1)-(5); 63.9(c)-(d); 63.9(h)(1)-(6); 63.9(i)-(j); 63.10(a); 63.10(b)(1); 63.10(b)(2)(vi)-(xiv); 63.10(b)(3); 63.10(c); 63.10(d)(1)-(2); 63.10(d)(4); 63.10(e)(1); 63.10(e)(2)(i); 63.10(e)(3); 63.10(f); and 63.12-63.15.</p>	40 CFR Section 63.6665; Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-32**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: EU 096 Foundry Thermal Reclaim (SR002)****Associated Items:** CE 031 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 018 PM Limits

GP 020 NOX Limit

GP 026 Direct Heating Equipment (Significant Sources)

SV 035 Foundry Sand Thermal Reclaim Unit (DC045)

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (See Also GP028)	hdr
The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 99 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 93 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
Calculation Of Emissions To Be Used At GP018	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate and record the total hours of operation (An).	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM and PM10 emissions for the previous month (PM(EU096) and PM10(EU096)), using the daily usage records and the calculations below. It can be assumed that PM2.5 = PM10, and therefore PM10(EU096) = PM2.5(EU096).  These calculated values will be used in the calculations required by GP018.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Calculation -- PM Emissions  The Permittee shall calculate PM emissions in tons per month using the following equation:  $PM(EU096) = (A \times 3 \times EF) \times 0.01 \times 0.0005$  Where:  A = the sum of all individual An values recorded during the previous month, in hours  An is as defined above  EF = 3.6 lb/ton of sand processed  3 = the equipment capacity of 3 tons per hour  0.01 = 1 - overall control efficiency of the fabric filter  0.0005 = 1 ton/2000 lb	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-33**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM10 and PM2.5 Emissions</p> <p>The Permittee shall calculate PM10 emissions in tons per month using the following equation:</p> $\text{PM10(EU096)} = (A \times 3 \times \text{EF}) \times 0.07 \times 0.0005 = \text{PM2.5(EU096)}$ <p>Where:</p> <p>A = the sum of all individual An values recorded during the previous month, in hours</p> <p>An is as defined above</p> <p>EF = 0.54 lb/ton of granite processed</p> <p>3 = the equipment capacity of 3 tons per hour</p> <p>0.07 = 1 - overall control efficiency of the fabric filter</p> <p>0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
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**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-34**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item:** EU 120 Foundry Finishing**Associated Items:** CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 018 PM Limits

SV 028 Foundry Finishing/Shotblast (DC026)

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (See Also GP028)	hdr
The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 79.2 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 74.4 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
Calculation Of Emissions To Be Used At GP018 and GP021	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate and record the total quantity of metal processed through EU120 (An), in tons.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; To avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200
Monthly Recordkeeping - By the 15th day of each month, the Permittee shall calculate and record the PM, PM10, individual HAP, and total HAP emissions for the previous month (PM(EU120), PM10(EU120), IHAP(EU120) and THAP(EU120)), using the daily usage records and the calculations below. It can be assumed that PM2.5 = PM10, and therefore PM10(EU120) = PM2.5(EU120).  These calculated values will be used in the calculations required by GP018 and GP021.	Minn. R. 7007.0800, subp. 4 and 5
Monthly Calculation -- PM Emissions  The Permittee shall calculate PM emissions in tons per month using the following equation:  $PM(EU120) = (A \times EF) \times (1 - 0.792) \times 0.0005$ Where:  A = the sum of all individual An values recorded during the previous month, in tons  An is as defined above  EF = 17 lb/ton of metal processed  0.792 = overall control efficiency of the fabric filter  0.0005 = 1 ton/2000 lb	Minn. R. 7007.0800, subps. 4 and 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-35**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>Monthly Calculation -- PM10 and PM2.5 Emissions</p> <p>The Permittee shall calculate PM10 emissions in tons per month using the following equation:</p> $\text{PM10(EU120)} = (\text{A} \times \text{EF}) \times (1 - 0.744) \times 0.0005 = \text{PM2.5(EU120)}$ <p>Where:</p> <p>A = the sum of all individual An values recorded during the previous month, in tons</p> <p>An is as defined above</p> <p>EF = 1.7 lb/ton of metal processed</p> <p>0.744 = overall control efficiency of the fabric filter</p> <p>0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Monthly Calculation -- Individual HAP Emissions</p> <p>The Permittee shall calculate the following individual HAP emissions in tons per month using the following equations:</p> <p>Lead: <math>\text{IHAP(EU120)} = \text{A} \times 0.425 \times 0.0005</math></p> <p>A = the sum of all individual An values recorded during the previous month, in tons</p> <p>0.425 = the total lead emission, in lb/ton of metal charged</p> <p>0.0005 = 1 ton/2000 lb</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>Monthly Calculation -- Total HAP Emissions:</p> <p>Monthly calculations of the Total HAP (THAP(EU120)) emissions shall be calculated by summing all of the individual HAP (IHAP(EU120)) calculated using the formulas specified in this permit.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-36**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item:** EU 121 Diamond Dept/Support Services**Associated Items:** CE 035 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 045 Support Services Dust Collector

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
CONTROL REQUIREMENTS (See Also GP028)	hdr
The Permittee shall operate and maintain the fabric filter at all times that any process equipment controlled by the fabric filter is operating.	Minn. R. 7011.0065, subp. 2(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for Total Particulate Matter: greater than or equal to 79.2 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency (capture efficiency x collection efficiency) for PM < 10 micron: greater than or equal to 74.4 percent control efficiency	Minn. R. 7011.0065, subp. 1(A)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-37** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item:** EU 122 Support Services Natural Gas Generator**Associated Items:** GP 018 PM Limits

GP 019 VOC Limit

GP 020 NOX Limit

GP 027 Engines

SV 046 Support Services Emergency Generator

What to do	Why to do it
SUBPART ZZZZ REQUIREMENTS (See also GP027)	hdr
Comply with the applicable emission limitations and operating requirements of Subpart ZZZZ no later than May 3, 2013.	40 CFR Section 63.6595(a)(1); Minn. R. 7011.8150
The Permittee must change the oil and filter every 1,440 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect the spark plugs every 1,440 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must be in compliance with the applicable emission limitations and applicable operating limitations of 40 CFR Part 63, Subpart ZZZZ, at all times.	40 CFR Section 63.6605(a); Minn. R. 7011.8150
The Permittee must at all times operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	40 CFR Section 63.6605(b); Minn. R. 7011.8150
The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions.	40 CFR Section 63.6625(e); 40 CFR Section 63.6655(d); Minn. R. 7011.8150
Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.	40 CFR Section 63.6625(h); Minn. R. 7011.8150
The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in 40 CFR Section 63.6595(a). The oil analysis must be performed at the same frequency specified for changing the oil in 40 CFR Section 63.6595(a). The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.	40 CFR Section 63.6625(i); Minn. R. 7011.8150
continued below:	
continued from above:  If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.	40 CFR Section 63.6625(i); Minn. R. 7011.8150
The Permittee must:  - Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or  - Develop and follow a permittee-developed maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.	40 CFR Section 63.6640(a); Minn. R. 7011.8150



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-38**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>The Permittee must keep the following records:</p> <p>(1) A copy of each notification and report submitted to comply with Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR Section 63.10(b)(2)(xiv).</p> <p>(2) Records of the occurrence and duration of each malfunction of operation ( i.e., process equipment) or the air pollution control and monitoring equipment.</p> <p>(3) (does not apply)</p> <p>(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.</p> <p>(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR Section 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.</p>	40 CFR Section 63.6655(a); Minn. R. 7011.8150
<p>The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the stationary RICE and after-treatment control device (if any) are operated and maintained according to the maintenance plan.</p>	40 CFR Section 63.6655(e); Minn. R. 7011.8150
<p>a. Records must be in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>b. As specified in 40 CFR Section 63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>c. Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1).</p>	40 CFR Section 63.6660; Minn. R. 7011.8150
<p>The following parts of the general provisions apply:</p> <p>40 CFR Sections 63.1-63.5; 63.6(a); 63.3(b)(1)-(5); 63.6(b)(7); 63.6(c)(1)-(2); 63.6(c)(5); 63.6(f)(2)-(3); 63.6(g)(1)-(3); 63.6(i)-(j); 63.8(a)(1)-(2); 63.8(b)(1)-(3); 63.8(c)(1)(i)-(iii); 63.8(f)(1)-(6); 63.8(g); 63.9(a); 63.9(b)(1)-(5); 63.9(c)-(d); 63.9(h)(1)-(6); 63.9(i)-(j); 63.10(a); 63.10(b)(1); 63.10(b)(2)(vi)-(xiv); 63.10(b)(3); 63.10(c); 63.10(d)(1)-(2); 63.10(d)(4); 63.10(e)(1); 63.10(e)(2)(i); 63.10(e)(3); 63.10(f); and 63.12-63.15.</p>	40 CFR Section 63.6665; Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-39**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item:** EU 123 Monuwest Diesel Generator**Associated Items:** GP 018 PM Limits

GP 019 VOC Limit

GP 020 NOX Limit

GP 027 Engines

SV 047 Monuwest Emergency Generator

What to do	Why to do it
subject to NSPS Subpart IIII & NESHAP Subpart ZZZZ	placeholder
Carbon Monoxide: less than or equal to 3.5 grams/kilowatt-hour as specified in 40 CFR Section 89.112(a)	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Total Particulate Matter: less than or equal to 0.20 grams/kilowatt-hour as specified in 40 CFR Section 89.112(a)	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
NMHC+NOx: less than or equal to 4.0 grams/kilowatt-hour as specified in 40 CFR Section 89.112(a)	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Opacity: less than or equal to 20 percent opacity during acceleration mode, as specified in 40 CFR Section 89.113(a)(1).	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Opacity: less than or equal to 15 percent opacity during lugging mode, as specified in 40 CFR Section 89.113(a)(2).	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Opacity: less than or equal to 50 percent opacity during peaks in the acceleration or lugging modes, as specified in 40 CFR Section 89.113(a)(3).	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Do not discharge crankcase emissions into the ambient atmosphere, unless such crankcase emissions are permanently routed into the exhaust and included in all exhaust emission measurements. This provision applies to all Tier 2 engines and later models. This provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction. (40 CFR Section 89.112(e)).	40 CFR Section 60.4204(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR Section 60.4204 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.	40 CFR Section 60.4206; 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Beginning June 1, 2010, diesel fuel must meet the requirements of 40 CFR Section 80.510(b). All NR and LM diesel fuel is subject to the following per-gallon standards: (1) Sulfur content: (i) 15 ppm maximum for NR diesel fuel and/or (ii) 500 ppm maximum for LM diesel fuel; and (2) Cetane index or aromatic content: (i) a minimum cetane index of 40, or (ii) a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(b); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. Also meet the applicable requirements of 40 CFR parts 89 and 1068.	40 CFR Section 60.4209; 40 CFR Section 60.4211(a); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520
you must comply by purchasing an engine certified to the emission standards in 40 CFR Section 60.4204(b), or 40 CFR Section 60.4205(b) or (c), as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.	40 CFR Section 60.4209; 40 CFR Section 60.4211(c); 40 CFR Section 63.6590(c)(1); Minn. R. 7011.8150; Minn. R. 7011.3520

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-40**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: EU 124 Water Reclaim Diesel Generator****Associated Items:** GP 018 PM Limits

GP 019 VOC Limit

GP 020 NOX Limit

GP 027 Engines

SV 048 Water Reclaim Emergency Generator

What to do	Why to do it
SUBPART ZZZZ REQUIREMENTS (See also GP027)	hdr
Comply with the applicable emission limitations and operating requirements of Subpart ZZZZ no later than May 3, 2013.	40 CFR Section 63.6595(a)(1); Minn. R. 7011.8150
The Permittee must change the oil and filter every 1,000 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.	40 CFR Section 63.6603(a); 40 CFR Section 63.6625(h); Minn. R. 7011.8150
The Permittee must be in compliance with the applicable emission limitations and applicable operating limitations of 40 CFR Part 63, Subpart ZZZZ, at all times.	40 CFR Section 63.6605(a); Minn. R. 7011.8150
The Permittee must at all times operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not required the Permittee to make any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	40 CFR Section 63.6605(b); Minn. R. 7011.8150
The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions.	40 CFR Section 63.6625(e); 40 CFR Section 63.6655(d); Minn. R. 7011.8150
The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in 40 CFR Section 63.6595(a). The oil analysis must be performed at the same frequency specified for changing the oil in 40 CFR Section 63.6595(a). The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.  continued below:	40 CFR Section 63.6625(i); Minn. R. 7011.8150
continued from above:  If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.	40 CFR Section 63.6625(i); Minn. R. 7011.8150
The Permittee must:  - Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or  - Develop and follow a permittee-developed maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.	40 CFR Section 63.6640(a); Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-41**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>The Permittee must keep the following records:</p> <p>(1) A copy of each notification and report submitted to comply with Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR Section 63.10(b)(2)(xiv).</p> <p>(2) Records of the occurrence and duration of each malfunction of operation ( i.e., process equipment) or the air pollution control and monitoring equipment.</p> <p>(3) (does not apply)</p> <p>(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.</p> <p>(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR Section 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.</p>	40 CFR Section 63.6655(a); Minn. R. 7011.8150
<p>The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the stationary RICE and after-treatment control device (if any) are operated and maintained according to the maintenance plan.</p>	40 CFR Section 63.6655(e); Minn. R. 7011.8150
<p>a. Records must be in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>b. As specified in 40 CFR Section 63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>c. Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1).</p>	40 CFR Section 63.6660; Minn. R. 7011.8150
<p>The following parts of the general provisions apply:</p> <p>40 CFR Sections 63.1-63.5; 63.6(a); 63.3(b)(1)-(5); 63.6(b)(7); 63.6(c)(1)-(2); 63.6(c)(5); 63.6(f)(2)-(3); 63.6(g)(1)-(3); 63.6(i)-(j); 63.8(a)(1)-(2); 63.8(b)(1)-(3); 63.8(c)(1)(i)-(iii); 63.8(f)(1)-(6); 63.8(g); 63.9(a); 63.9(b)(1)-(5); 63.9(c)-(d); 63.9(h)(1)-(6); 63.9(i)-(j); 63.10(a); 63.10(b)(1); 63.10(b)(2)(vi)-(xiv); 63.10(b)(3); 63.10(c); 63.10(d)(1)-(2); 63.10(d)(4); 63.10(e)(1); 63.10(e)(2)(i); 63.10(e)(3); 63.10(f); and 63.12-63.15.</p>	40 CFR Section 63.6665; Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-42**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

**Subject Item: EU 129 Foundry Emergency Generator****Associated Items:** GP 018 PM Limits

GP 019 VOC Limit

GP 020 NOX Limit

GP 027 Engines

SV 049 Foundry Gas-fired Generator

What to do	Why to do it
SUBPART ZZZZ REQUIREMENTS (See also GP027)	hdr
Comply with the applicable emission limitations and operating requirements of Subpart ZZZZ no later than May 3, 2013.	40 CFR Section 63.6595(a)(1); Minn. R. 7011.8150
The Permittee must change the oil and filter every 1,440 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect the spark plugs every 1,440 hours of operation or annually, whichever comes first.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	40 CFR Section 63.6603(a); Minn. R. 7011.8150
The Permittee must be in compliance with the applicable emission limitations and applicable operating limitations of 40 CFR Part 63, Subpart ZZZZ, at all times.	40 CFR Section 63.6605(a); Minn. R. 7011.8150
The Permittee must at all times operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.	40 CFR Section 63.6605(b); Minn. R. 7011.8150
The Permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions.	40 CFR Section 63.6625(e); 40 CFR Section 63.6655(d); Minn. R. 7011.8150
Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.	40 CFR Section 63.6625(h); Minn. R. 7011.8150
The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in 40 CFR Section 63.6595(a). The oil analysis must be performed at the same frequency specified for changing the oil in 40 CFR Section 63.6595(a). The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5.  continued below:	40 CFR Section 63.6625(i); Minn. R. 7011.8150
continued from above:  If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.	40 CFR Section 63.6625(i); Minn. R. 7011.8150
The Permittee must:  - Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or  - Develop and follow a permittee-developed maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.	40 CFR Section 63.6640(a); Minn. R. 7011.8150

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-43**

06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

<p>The Permittee must keep the following records:</p> <p>(1) A copy of each notification and report submitted to comply with Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirement in 40 CFR Section 63.10(b)(2)(xiv).</p> <p>(2) Records of the occurrence and duration of each malfunction of operation ( i.e., process equipment) or the air pollution control and monitoring equipment.</p> <p>(3) (does not apply)</p> <p>(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.</p> <p>(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR Section 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.</p>	40 CFR Section 63.6655(a); Minn. R. 7011.8150
<p>The Permittee must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the stationary RICE and after-treatment control device (if any) are operated and maintained according to the maintenance plan.</p>	40 CFR Section 63.6655(e); Minn. R. 7011.8150
<p>a. Records must be in a form suitable and readily available for expeditious review according to 40 CFR Section 63.10(b)(1).</p> <p>b. As specified in 40 CFR Section 63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.</p> <p>c. Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR Section 63.10(b)(1).</p>	40 CFR Section 63.6660; Minn. R. 7011.8150
<p>The following parts of the general provisions apply:</p> <p>40 CFR Sections 63.1-63.5; 63.6(a); 63.3(b)(1)-(5); 63.6(b)(7); 63.6(c)(1)-(2); 63.6(c)(5); 63.6(f)(2)-(3); 63.6(g)(1)-(3); 63.6(i)-(j); 63.8(a)(1)-(2); 63.8(b)(1)-(3); 63.8(c)(1)(i)-(iii); 63.8(f)(1)-(6); 63.8(g); 63.9(a); 63.9(b)(1)-(5); 63.9(c)-(d); 63.9(h)(1)-(6); 63.9(i)-(j); 63.10(a); 63.10(b)(1); 63.10(b)(2)(vi)-(xiv); 63.10(b)(3); 63.10(c); 63.10(d)(1)-(2); 63.10(d)(4); 63.10(e)(1); 63.10(e)(2)(i); 63.10(e)(3); 63.10(f); and 63.12-63.15.</p>	40 CFR Section 63.6665; Minn. R. 7011.8150

## TABLE B: SUBMITTALS

B-1 06/13/12

Facility Name: Cold Spring Granite Co  
Permit Number: 14500067 - 007

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

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

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

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:

Fiscal Services  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

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.

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

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

AQ Compliance Tracking Coordinator  
Industrial Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS****B-2** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

What to send	When to send	Portion of Facility Affected
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup following relocation of the equipment.	EU029
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 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA.	EU029



**TABLE B: RECURRENT SUBMITTALS****B-3** 06/13/12

Facility Name: Cold Spring Granite Co

Permit Number: 14500067 - 007

What to send	When to send	Portion of Facility Affected
Semiannual 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 is 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. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

**APPENDIX B: VOC and HAP Emission Factors for Pouring/Cooling/Shakeout****Facility Name:** Cold Spring Granite Company**Permit Number:** 14500067-007

Tables B.1 through B.11 were taken from "Calculating Emission Factors for Pouring, Cooling and Shakeout." This article was published in the October 1994 edition of Modern Casting which is a monthly publication of the American Foundrymen's Society.

The information in Tables B.12 and B.13 originated in the Permittee's application for a minor amendment, received on February 8, 2001.

**Table B.1. Phenolic Nobake Binder**

Binder System	Pounds of Chemical
Phenolic Nobake	Released to Air per
Index: Resin	Pound of Index
Ammonia	0.000039
Hydrogen Sulfide	0.001462
Nitrogen Oxides	0.000029
Sulfur Dioxide	0.015107
Total Hydrocarbons	0.012159
Acrolein	0.000005
Benzene	0.011209
Formaldehyde	0.000010
Hydrogen Cyanide	0.000029
M-Xylene	0.000097
Naphthalene	0.000049
O-Xylene	0.000049
Phenol	0.000975
Toluene	0.000634
Total Aromatic Amines	0.000049
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.003070
Total HAPs <sup>[5]</sup>	0.016174

**Table B.2. Phenolic Urethane Binder**

Binder System	Pounds of Chemical
Phenolic Urethane	Released to Air per
Index: Resin	Pound of Index
Ammonia	0.000083
Hydrogen Sulfide	0.000057
Nitrogen Oxides	0.000044
Sulfur Dioxide	0.000061
Total Hydrocarbons	0.023377
Acrolein	0.000031
Benzene	0.005351
Formaldehyde	0.000022
Hydrogen Cyanide	0.001053
M-Xylene	0.000439
Naphthalene	0.000022
O-Xylene	0.000132
Phenol	0.003904
Toluene	0.000833
Total Aromatic Amines	0.000351
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000219
Total HAPs	0.012355

**Table B.3. Phenolic Hotbox Binder**

Binder System Phenolic Hotbox Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.010931
Hydrogen Sulfide	0.000009
Nitrogen Oxides	0.000638
Sulfur Dioxide	0.000036
Total Hydrocarbons	0.005165
Acrolein	0.000009
Benzene	0.001002
Formaldehyde	0.000006
Hydrogen Cyanide	0.001184
M-Xylene	0.000121
Naphthalene	0.000030
O-Xylene	0.000030
Phenol	0.000203
Toluene	0.000182
Total Aromatic Amines	0.001275
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000273
Total HAPs	0.004318

**Table B.4. Green Sand Binder**

Binder System Green Sand Index: Seacoal	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.000065
Hydrogen Sulfide	0.000832
Nitrogen Oxides	0.000562
Sulfur Dioxide	0.000253
Total Hydrocarbons	0.011941
Acrolein	0.000002
Benzene	0.000611
Formaldehyde	0.000004
Hydrogen Cyanide	0.000118
M-Xylene	0.000021
Naphthalene	0.000021
O-Xylene	0.000021
Phenol	0.000131
Toluene	0.000063
Total Aromatic Amine	0.000021
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000063
Total HAPs	0.001076

**Table B.5. Core Oil Binder**

Binder System Core Oil Index: Core Oil	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.000038
Hydrogen Sulfide	0.000057
Nitrogen Oxides	0.000081
Sulfur Dioxide	0.000115
Total Hydrocarbons	0.028737
Acrolein	0.000077
Benzene	0.002344
Formaldehyde	0.000096
Hydrogen Cyanide	0.000086
M-Xylene	0.000239
Naphthalene	0.000048
O-Xylene	0.000287
Phenol	0.000057
Toluene	0.000478
Total Aromatic Amines	0.000096
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000766
Total HAPs	0.004574

**Table B.6. Shell Binder**

Binder System Shell Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.003860
Hydrogen Sulfide	0.000094
Nitrogen Oxides	0.000994
Sulfur Dioxide	0.003509
Total Hydrocarbons	0.022421
Acrolein	0.000047
Benzene	0.006667
Formaldehyde	0.000035
Hydrogen Cyanide	0.010526
M-Xylene	0.000585
Naphthalene	0.000058
O-Xylene	0.000117
Phenol	0.002456
Toluene	0.002807
Total Aromatic Amines	0.002339
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000585
Total HAPs	0.026222

**Table B.7. Low Nitrogen Furan Binder**

Binder System Low Nitrogen Furan Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.000040
Hydrogen Sulfide	0.000405
Nitrogen Oxides	0.000012
Sulfur Dioxide	0.000607
Total Hydrocarbons	0.007814
Acrolein	0.000028
Benzene	0.000648
Formaldehyde	0.000267
Hydrogen Cyanide	0.000368
M-Xylene	0.002227
Naphthalene	0.000040
O-Xylene	0.000729
Phenol	0.000024
Toluene	0.000121
Total Aromatic Amines	0.000081
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000243
Total HAPs	0.004777

**Table B.8. Medium Nitrogen Furan TSA Catalyst Binder**

Binder System Medium Nitrogen Furan TSA Catalyst Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.000202
Hydrogen Sulfide	0.000486
Nitrogen Oxides	0.000312
Sulfur Dioxide	0.004858
Total Hydrocarbons	0.017178
Acrolein	0.000016
Benzene	0.004534
Formaldehyde	0.000065
Hydrogen Cyanide	0.000607
M-Xylene	0.000243
Naphthalene	0.000040
O-Xylene	0.000040
Phenol	0.000101
Toluene	0.008826
Total Aromatic Amines	0.000364
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.017004
Total HAPs	0.031842

**Table B.9. Furan Hotbox Binder**

Binder System Furan Hotbox Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.019579
Hydrogen Sulfide	0.000060
Nitrogen Oxides	0.000411
Sulfur Dioxide	0.000088
Total Hydrocarbons	0.006259
Acrolein	0.000013
Benzene	0.000537
Formaldehyde	0.000009
Hydrogen Cyanide	0.003474
M-Xylene	0.000032
Naphthalene	0.000032
O-Xylene	0.000032
Phenol	0.000016
Toluene	0.000032
Total Aromatic Amines	0.003032
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.000158
Total HAPs	0.007364

**Table B.10. Alkyd Isocyanate Binder**

Binder System Alkyd Isocyanate Index: Resin + Isocyanate	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.000037
Hydrogen Sulfide	0.000007
Nitrogen Oxides	0.000355
Sulfur Dioxide	0.000040
Total Hydrocarbons	0.035567
Acrolein	0.000088
Benzene	0.005336
Formaldehyde	0.000106
Hydrogen Cyanide	0.000175
M-Xylene	0.002522
Naphthalene	0.000037
O-Xylene	0.003838
Phenol	0.000110
Toluene	0.001535
Total Aromatic Amines	0.000037
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.002156
Total HAPs	0.015939

**Table B.11. Sodium Silicate-Ester Binder**

Binder System Sodium Silicate - Ester Index: Sugar + Ester	Pounds of Chemical Released to Air per Pound of Index
Ammonia	0.000038
Hydrogen Sulfide	0.000197
Nitrogen Oxides	0.000028
Sulfur Dioxide	0.000244
Total Hydrocarbons	0.022782
Acrolein	0.000028
Benzene	0.001410
Formaldehyde	0.000169
Hydrogen Cyanide	0.000179
M-Xylene	0.000094
Naphthalene	0.000005
O-Xylene	0.000094
Phenol	0.000273
Toluene	0.000282
Total Aromatic Amines	0.000094
Total C <sub>2</sub> to C <sub>5</sub> Aldehydes	0.001316
Total HAPs	0.003943

**Table B.12. Ashland Binder**

Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Acetaldehyde	0.000197
Acrolein	0.000002
Benzene	0.003716
Formaldehyde	0.000098
Hydrogen Cyanide	0.000421
Xylenes	0.000092
Naphthalene	0.000007
Phenol	0.001496
Toluene	0.002776
Total HAPs <sup>[5]</sup>	0.0084

**Table B.13. Borden Binder**

Index: Resin	Pounds of Chemical Released to Air per Pound of Index
Acetaldehyde	0
Acrolein	0.000028
Benzene	0.000648
Formaldehyde	0.000267
Hydrogen Cyanide	0.000368
Xylenes	0.002955
Naphthalene	0.000040
Phenol <sup>[2]</sup>	0.000024
Toluene	0.000121
Total HAPs <sup>[5]</sup>	0.004777

The following tables were taken from: "Form R Reporting of Binder Chemicals Used in Foundries", Second Edition (1998), published by the American Foundrymen's Society, Inc. and the Casting Industry Suppliers Association.

The information found for different types of binder systems can be used to calculate the amount of individual HAP's and total VOC's that are emitted when sand is mixed with binder, but before the mold or core is exposed to molten metal. In order to do this, the HAP content and VOC contents of each part of the binder system must be known, either from the material safety data sheet (MSDS), or the manufacturer.

**Table C.1 Alkyd Oil Binder**

	% Reacted	% Evaporated	% Remaining Mold/Core
<b>Resin</b>			
Lead (7439-92-1)	0	0	100
Cobalt (7440-48-4)	0	0	100
<b>Coreactant</b>			
Methylene Phenylene Isocyanate (101-68-8) <sup>(1)</sup>	99.99	<0.01	0.01
<b>Polymeric diphenylmethane Diisocyanate (9016-87-9)</b>	99.99	<0.01	0.01

<sup>(1)</sup> Listed as CAS #101-68-8, MBI, Methylenebis (phenyl, isocyanate) on 313 chemical list

**Table C.2 Acrylic/Epoxy/SO<sub>2</sub> Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Cumene Hydroperoxide (80-15-9)	97	0	3
Cumene (98-82-8)	0	1.5	98.5

**Table C.3 Furan Hotbox Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Formaldehyde (50-00-0)	95	5	0

**Table C.4 Furan Nobake Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Phenol (108-95-2)	98+	0	2
Formaldehyde (50-00-0)	98	2	0
Methyl Alcohol (67-56-1)	0	50	50
<b>Catalyst</b>			
Methyl Alcohol (67-56-1)	0	50	50
Sulfuric Acid (8774-93-9)	100	0	0

**Table C.5 Furan/SO<sub>2</sub> Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Formaldehyde (50-00-0)	98	2	0
Methyl Alcohol (65-56-1)	0	50	50
<b>Oxidizer</b>			
Dimethyl Phthalate (131-11-3)	0	50	50
Methyl Ethyl Ketone (78-93-3)	0	50	50

**Table C.6 Furan Warmbox Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Formaldehyde(50-00-0)	95	5	0
<b>Catalyst</b>			
Methyl Alcohol(67-56-1)	0	100	0

**Table C.7 Phenolic Baking Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Phenol (108-95-2)	95	0	5
Formaldehyde(50-00-0)	95	5	0

**Table C.8 Phenolic Ester Nobake Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Formaldehyde (50-00-0)	98	2	0
Phenol (108-95-2)	98	0	2

**Table C.9 Phenolic Ester Coldbox Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Formaldehyde (50-00-0)	98	2	0
Phenol (108-95-2)	98	0	2
Glycol Ethers <sup>(1)</sup>	0	50	50
<b>Catalyst</b>			
Methanol (67-56-1)	0	50	50

<sup>(1)</sup> Listed as Certain Glycol Ethers under (c) Chemical categories on the SARA 313 chemical list.

**Table C.10 Phenolic Hotbox Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Formaldehyde (50-00-0)	95	5	0
Phenol (108-95-2)	95	0	5

**Table C.11 Phenolic Nobake - Acid Catalyzed Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Resin</b>			
Phenol (108-95-2)	98	0	2
Formaldehyde (50-00-0)	98	2	0
Methyl Alcohol (67-56-1)	0	50	50
<b>Acid</b>			
Methyl Alcohol (67-56-1)	0	50	50
Sulfuric Acid (7664-93-9)	100	0	0



**Table C.12 Phenolic Novolac Flake Binder - Coating Operations**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Phenol (108-95-2)	95	0	5
<b>Part II</b>			
Ammonia <sup>(1)</sup> (7664-41-7)	0	100	0

<sup>(1)</sup> Ammonia is generated as a breakdown product from the hexamethylenetetramine (hexa). As the hexa breaks down 40% is converted to ammonia. The percentages listed here are for the ammonia generated from the hexa.

**Table C.13 Phenolic Novolac Liquid Binder - Coating Operations**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Phenol (108-95-2)	95	0	5
Formaldehyde (50-00-0)	95	5	0
Methanol (67-56-1)	0	100	0

**Table C.14 Phenolic Urethane Nobake Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Phenol (108-95-2)	98	0	2
Formaldehyde (50-00-0)	98	2	0
Naphthalene (91-20-3)	0	5.85	94.15
1,2,4 Trimethyl Benzene (95-63-6)	0	5.85	94.15
Cumene (98-82-8)	0	5.85	94.15
Xylene (1330-20-7)	0	5.85	94.15
<b>Part II</b>			
Methylene Phenylene Isocyanate <sup>(1)</sup> (101-68-8)	99.99	0	0.01
Polymeric diphenylmethane Diisocyanate (9016-87-9)	99.99	0	0.01
Naphthalene (91-20-3)	0	5.85	94.15
1,2,4 Trimethylbenzene (95-63-6)	0	5.85	94.15
Cumene (98-82-8)	0	5.85	94.15
Xylene (1330-20-7)	0	5.85	94.15

<sup>(1)</sup> Listed as CAS #101-68-8, Methylenebis (phenylisocyanate)(MDI) under (c) Chemical categories on the SARA 313 chemical list.

**Table C.15 Phenolic Urethane Coldbox Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Formaldehyde (50-00-0)	98	2	0
Phenol (108-95-2)	98	0	2
Xylene (1330-20-7)	0	3.25	96.75
Cumene (98-82-8)	0	3.25	96.75
Naphthalene (91-20-3)	0	3.25	96.75
1,2,4 Trimethylbenzene (95-63-6)	0	3.25	96.75
<b>Part II</b>			
Methylene Phenylene Isocyanate (101-68-8) <sup>(1)</sup>	99.99	0	0.01
Polymeric diphenylmethane Diisocyanate (9016-87-9)	99.99	0	0.01
Naphthalene (91-20-3)	0	3.25	96.75
Xylene (1330-20-7)	0	3.25	96.75
Biphenyl (95-52-4)	0	3.25	96.75

<sup>(1)</sup> Listed as CAS #101-68-8, Methylenebis (phenylisocyanate)(MDI) under (c) Chemical categories on the SARA 313 chemical list.

**Table C.16 Urea Formaldehyde Binder**

	% Reacted	% Evaporated	% Remaining in Mold/Core
<b>Part I</b>			
Formaldehyde (50-00-0)	98	2	0

## Permit Number: 14500067-007

### Table D.1: Insignificant Activities and Applicable Requirements

[illegible]

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
	<ul style="list-style-type: none"> <li>Plant roads and parking lots</li> </ul>	
3(K)	<p>Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment.</p> <ul style="list-style-type: none"> <li>These types of operations take place at the facility</li> </ul>	Minn. R. 7011.0710/0715

**Table D.2 Conditionally Insignificant Activities**

	Rule Description of the Activity	Applicable Requirement
Minn. R. 7008.4110	<p>Emissions from equipment venting particulate matter (PM) or particulate matter less than 10 microns (PM<sub>10</sub>) inside a building, provided that emissions from the equipment are:</p> <p>a). filtered through an air cleaning system; and</p> <p>b). vented inside of the building 100% of the time.</p> <ul style="list-style-type: none"> <li>See Table D.5</li> </ul>	Minn. R. 7011.0710/0715

**Table D.3 Insignificant Combustion Units**

ID No.	Location	Description of Activity	No. of Units	Max Heat Input (MMBTU/Hr)
IA 1	GW	48 Co Ray Vac (Tube Reflect) (0.1 ea)	48	4.8
IA 2	GW	1 Reverber Ray Space Heater (0.1)	1	0.1
IA 3	GW	4 Reznor Space Heaters (0.15 ea)	4	0.6
IA 33	GW	OV 005 Vantage Line Oven (1.19)	1	1.19
IA 34	GW	2 Vantage Line Slab Heaters (0.421533 ea)	2	0.843066
IA 35	GW	BR 004 Stone Burner (0.32)	1	0.32
IA 36	GW	BR 026 Stone Burner (0.32)	1	0.32
IA 39	GW	VP 002 Vaporizer Propane (0.56)	1	0.56
	GW	West Plant Office Furnace	1	0.1
	GW	West Plant Washroom Heater (former lunchroom heater)	1	0.1
	GW	West Plant Washroom Heater	1	0.1
	GW	2-1.1 MMBTU/hr Heaters 12/4/07	2	2.2
IA 10	SS	2 Dayton Space Heaters (0.15 ea)	2	0.3
IA 11	SS	9 Co Ray Vac (Tube Reflect) (0.1 ea)	9	0.9
IA 12	SS	1 Bryant Space Heater (0.1)	1	0.1
	SS	BR 005 Burner Booth (0.32) Relocated from Granite South)	1	0.32
IA 13	MW	18 Radiant Heater Sections (0.15 ea)	18	2.7
IA 14	MW	9 Space Heaters (~0.15 ea)	9	1.35
IA 42	MW	HE 004 HVAC Room Forced Air (0.14)	1	0.14
IA 43	MW	HE 005 HVAC Room Forced Air (0.08)	1	0.08

ID No.	Location	Description of Activity	No. of Units	Max Heat Input (MMBTU/Hr)
IA 44	MW	HE 006 HVAC Room Forced Air (0.08)	1	0.08
IA 45	MW	HE 007 HVAC Room Forced Air (0.08)	1	0.08
IA 46	MW	HE 008 Heater South West Corner (0.08)	1	0.08
IA 47	MW	HE 009 Heater South West Corner (0.028)	1	0.028
	MW	HV 0047 Hot Water Boiler (0.4)	1	0.4
	MW	HV 0048 Hot Water Boiler (0.4)	1	0.4
IA 48	MW	HE 012 HVAC Room Forced Air (0.028)	1	0.028
IA 52	FNDRY	HE 021 HVAC Mechanical Room (0.120)	1	0.12
IA 53	FNDRY	HE 021 HVAC Mechanical Room (0.180)	1	0.18
IA 54	FNDRY	HE 023 HVAC Mechanical Room (0.120)	1	0.12
IA 55	FNDRY	HE 024 HVAC Mechanical Room (0.120)	1	0.12
IA 56	FNDRY	WH 003 Hot Water Heater (0.5)	1	0.5
IA 57	FNDRY	WH 004 Hot Water Heater (0.5)	1	0.5
IA 59	FNDRY	DF 001 Hobart Washer East Mezzanine (0.094)	1	0.094
IA 60	FNDRY	DF 002 Hobart Washer East Mezzanine (0.094)	1	0.094
IA 76	FNDRY	FR 012 Letter Lead Melting Pot	1	0.05
IA 77	FNDRY	FR 013 Letter Lead Melting Pot	1	0.05
IA 15	Plate Storage	HE 027 Dayton Space Heater Warehouse West Side (~0.1)	1	0.1
IA 16	Plate Storage	HE 028 Dayton Space Heater Warehouse West Side (~0.1)	1	0.1
IA 20	STC	2 Sterling space heaters above door DR 025 (0.2 ea)	2	0.4
IA 22	STC	10 Solaronics space heaters (0.1 ea)	1	1
IA 23	STC	9 Dayton Space Heaters (0.1 ea)	9	0.9
IA 24	STC	5 Re-Verber-Ray space heaters (0.1 ea)	5	0.5
IA 25	STC	3 Co-Ray-Vac radiant heater sections (~0.1 ea)	3	0.3
IA 111	STC	BR 003 Burner Booth (0.32)	1	0.32
IA 118	STC	VP 001 Vaporizer Propane (0.8)	1	0.8
IA 26	Water Reclaim	4 Co Ray Vac (tube reflect) (0.1 ea)	4	0.4
IA 27	Water Reclaim	1 Dayton Space Heater (0.1)	1	0.1
	Support Servs	2 Vaporizers (0.15)	2	0.3
	Support Servs	2 MUA (0.8 ea)	2	1.6
	Support Servs	Acid Tank Sealant Preheating Oven (0.25)	1	0.25
		<b>Total IA Heat Input Capacity</b>	<b>157</b>	<b>27.12</b>

GW = Granite West Bldg.

SS = Shot Saw Bldg.

MW = Monuwest Bldg.

FNDRY = Foundry Bldg.

Plate Storage = Plate Storage Bldg.

STC = Slab Tech Center

Water Reclaim = Water Treatment / Reclaim Bldg.

Support Servs = Maintenance / Welding / Diamond Dept. / Carpenter Shop / Engineering Bldg.

**Table D.4 Miscellaneous Insignificant PM sources**

<b>ID#</b>	<b>Location</b>	<b>Description of Activity</b>	<b>Bldg. No.</b>
IA 30	GW	Vantage Line - Tenax	G1
IA 40	SS	Lime Silo AG 001	G2
IA 51	MW	2 Rock Conveyors	G3
IA 61	FNDRY	DP 009 Pattern Shop Drill Press	G4
IA 62	FNDRY	DP 010 Pattern Shop Drill Press	G4
IA 63	FNDRY	GA 027 Pattern Shop Grinding Station	G4
IA 64	FNDRY	GA 028 Pattern Shop Grinding Station	G4
IA 65	FNDRY	BS 012 Pattern Shop Belt Sander Grizzly Model	G4
IA 66	FNDRY	BS 014 Pattern Shop Belt Sander	G4
IA 67	FNDRY	BS 027 Pattern Shop Belt Sander	G4
IA 68	FNDRY	BW 002 Pattern Shop Weld Table	G4
IA 69	FNDRY	MM 005 Pattern Shop Milling Machine (Gerber)	G4
IA 70	FNDRY	WE 007 Pattern Shop Table Saw	G4
IA 71	FNDRY	BW 004 Pattern Shop Band Saw	G4
IA 72	FNDRY	Pattern Shop Performex Planer/Barrel Sander	G4
IA 73	FNDRY	Pattern Shop Work Table Hood	G4
IA 75	FNDRY	LP 003 Pattern Shop Wash Cabinet	G4
IA 74	FNDRY	PS 003 Pattern Shop Paint Hood	G4
IA 78	FNDRY	HP 001 Bulk Bag Unloading Station	G4
IA 79	FNDRY	SB 036 Manual Sandblast Cabinet	G4
IA 80	FNDRY	BS 013 Trimming Belt Sander	G4
IA 81	FNDRY	BS 023 Trimming Band Saw	G4
IA 82	FNDRY	BS 024 Trimming Disk Sander	G4
IA 83	FNDRY	MM 001 CNC Woodworking Milling Machine	G4
	FNDRY	Sand Silo	G4
	FNDRY	HD Engraver	G4
IA 112	STC	WS 079 Wire Saw Wall Exhaust	G6
IA 113	STC	WS 080 Wire Saw Wall Exhaust	G6
IA 114	STC	WS 081 Wire Saw Wall Exhaust	G6
IA 115	STC	WS 082 Wire Saw Wall Exhaust	G6
IA 116	STC	WS 083 Wire Saw Wall Exhaust	G6
IA 117	STC	WS 084 Wire Saw Wall Exhaust	G6
IA 167	Support Servs	PA 0009 - Diamond Dept Core Drill Bit Painting	G8
	Support Servs	WE 0015 Miter Saw (not vented)	G8
	Support Servs	PW 0018 & PW 0019 - Nickel Stripper Tanks	G8

GW = Granite West Bldg.

SS = Shot Saw Bldg.

MW = Monuwest Bldg.

FNDRY = Foundry Bldg.

Plate Storage = Plate Storage Bldg.

STC = Slab Tech Center

Water Treatment = Water Treatment / Reclaim Bldg.

Support Servs = Maintenance / Welding / Diamond Dept./ Carpenter Shop / Engineering Bldg.

Table D.5 Conditionally Insignificant Activities

ID No.	Location	Description of Activity	Bldg. No.
IA 28	GW	WA 001 DC 058 Dust Collector for Wheelabrator vented inside 100% of the time	G1
IA 29	GW	WA 004 Tosca Shotblast & DC 069 Dust Collector vented inside 100% of the time	G1
IA 169	GW	DC 027 portable dust collector vented inside - pneumatic rock drill	G1
IA 172	GW	DC 040 portable dust collector vented inside - hand cutter	G1
IA 174	GW	DC 031 portable dust collector vented inside	G1
IA 177	GW	DC 063 portable dust collector vented inside - hand cutter	G1
	GW	Portable dust collector vented inside	G1
	GW	Portable dust collector vented inside	G1
IA 222	GW	DC 050 Sample Shop	G1
	GW	Portable dust collector vented inside	G1
	GW	Portable dust collector vented inside	G1
IA 181	GW	WE 002 Miter Saw controlled by dust collector vented indoors	G1
IA 182	GW	WE 020 Miter Saw controlled by dust collector DC 033 vented indoors	G1
IA 183	GW	WE 006 Miter Saw controlled by dust collector DC 031 vented indoors	G1
IA 184	GW	WE 003 Miter Saw controlled by dust collector DC 035 vented indoors	G1
IA 185	GW	Miter Saw controlled by dust collector vented indoors	G1
	GW	Sandblast booth controlled by dust collector vented inside 100% of the time	G1
IA 178	MW	Sandblast SB 010 controlled by DC 067 dust collector vented inside	G3
IA 178A	MW	Sandblast SB 011 controlled by DC 068 dust collector vented inside	G3
IA 187	MW	WE 001 Miter Saw controlled by dust collector DC 012 vented indoors	G3
IA 188	MW	WE 002 Miter Saw controlled by dust collector DC 014 vented indoors	G3
IA 189	MW	WE 003 Miter Saw controlled by dust collector DC 013 vented indoors	G3
IA 190	MW	WE 004 Miter Saw controlled by dust collector vented indoors	G3
IA 191	MW	WE 016 Miter Saw controlled by dust collector DC 010 vented indoors	G3
IA 192	MW	WE 018 Miter Saw controlled by dust collector vented indoors	G3
IA 193	MW	WE 019 Miter Saw controlled by dust collector DC 015 vented indoors	G3
IA 194	MW	WE 026 Miter Saw controlled by dust collector DC 011 vented indoors	G3
IA 195	MW	DC 056 Dust Collector Schubert	G3
IA 196	MW	DC 057 Dust Collector Schubert	G3
IA 197	MW	DC 071 Dust Collector Schubert	G3
IA 198	MW	DC 052 Dust Collector Hand Carving Area	G3
IA 199	MW	DC 053 Dust Collector Hand Carving Area	G3
IA 200	MW	DC 252 Dust Collector Hand Carving Area	G3
IA 202	MW	DC 051 Dust Collector Hand Carving Area	G3
IA 203	MW	DC 042 (old DC 061) Dust Collector Hand Carving Area	G3
IA 204	MW	DC 0043 - 4 Hand Chipping Stations controlled by Torit Environmental Booths DC 043 vented inside	G3

ID No.	Location	Description of Activity	Bldg. No.
		100%	
IA 178B	FNDRY	Sandblast SB 024 controlled by DC 022 dust collector vented inside 100% of the time	G4
	Support Servs	DC 0078 - BS 0036 Planer vented inside 100% of time	G8
	Support Servs	DC 0078 - WE 0014 Miter Saw vented inside 100% of time	G8
	Support Servs	DC 0078 - WE 0102 Radial Arm Saw vented inside 100% of time	G8
	Support Servs	DC 0078 - WE 0013 Table Saw vented inside 100% of time	G8
	Support Servs	DC 0078 - BS 0030 Belt Sander vented inside 100% of time	G8

GW = Granite West Bldg.

SS = Shot Saw Bldg.

MW = Monuwest Bldg.

FNDRY = Foundry Bldg.

Plate Storage = Plate Storage Bldg.

STC = Slab Tech Center

Water Treatment = Water Treatment / Reclaim Bldg.

Support Servs = Maintenance / Welding / Diamond Dept./ Carpenter Shop / Engineering Bldg.



**APPENDIX E: Maximum Contents of Material for Coating Operations****Facility Name:** Cold Spring Granite Company**Permit Number:** 14500067-007

All contents are "as applied".

Emissions Unit	VOC Content (lb/gal)	Solids Content (lb/gal)
003	3.7	10.36
057	6.04	2.83
103	9.17	6.74
118	6.98	1.84
119	6.98	1.84
125	5.27	3.00