TECHNICAL REVIEW DOCUMENT
for
OPERATING PERMIT 98OPME196
to be issued to:

Johns Manville
Mesa Insulation
Mesa County
Source ID 0770023

Prepared by Ashley L. Kendall
October 29, 1998

I. Purpose:

This document will establish the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA, the public and other interested parties. The conclusions based on this report are based on information provided in the original application submittal of May 1, 1998 as well as numerous phone contacts with the applicant. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998. All short term emission and production/throughput limits that appeared in the construction permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 month total. Note that, If applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon

issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Source Description:

This source is classified as a manufacturer of calcium silicate insulation pipe (CalSil) and fire-proofing board (Xonotlite) defined under Standard Industrial Classification 3299. CalSil operations consist of transportation of raw materials, cement and lime loading and storage, bulk diatomaceous earth loading and grinding and powdered diatomaceous earth loading. The raw materials are then mixed, heated using steam and transferred to molds. The molds are then cured in steam heated indurators and dried in natural gas-fired ovens. The pipes are then cut, wrapped and packaged for shipping. Xonotlite operations consist of transportation of raw materials, lime, silica, cement and bentonite are loaded and stored. Various raw materials are combined, mixed and held in tanks. A high pressure press mold is used to press the mixture into sheets. The sheets are dried in steam heated ovens, cut and trimmed by saws and sanded. The products are then wrapped and packaged for shipping.

The facility is located in Fruita in an area designated as attainment for all criteria pollutants. This facility is within 100 km of a Federal Class I area, Arches National Park and Utah is an affected state within 50 miles. The applicant certified that they are not a 112(r) source. Based on the information provided, it is not categorized as a major stationary source (no single criteria pollutant emissions with a Potential to Emit of greater than 250 TPY) as of issue date of this permit. The source therefore is not subject to the PSD review requirements of 40 CFR 52.21 (Colorado Regulation No. 3, Part B, Section IV.D.3). This facility is not subject to any Maximum Achievable Control Technology (MACT) standards at time of permit issuance. Facility Wide emissions are as follows:

Pollutant	Potential to Emit (tpy)	Actual (tpy)
PM10	40.09	4.13
PM	42.21	4.13
NOx	102.3	8.5
CO	58.83	2.11

Potential emissions are based on permit limits. Actual emissions are based on the most current APENs submitted to the Division with the construction permit modification application.

III. Emission Sources:

The following sources are specifically regulated under terms and conditions of the Operating Permit for this Site:

<u>Unit EP001</u> - Babcock and Wilcox FM Natural Gas-Fired Boiler, Maximum Rated At 93.5 MMBtu/hr, SN: 10188B.

Discussion:

1. Applicable Requirements- This boiler was installed and began operation in 1977. The boiler was modified with a new burner front to more closely match the rating on the boiler. The Modified Final Approval Construction Permit 11ME358-3 was issued on March 17, 1987. In conjunction with the transfer of ownership from Pabco Insulation to Johns Manville the source requested an increase in fuel consumption and emission limitations. Initial Approval Construction Permit 11ME358-3 (Mod 2) was issued on December 15, 1998 with the following applicable requirements:

<u>Condition 3</u> -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

<u>Condition 6</u> -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

<u>Condition 7</u> -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

<u>Condition 8</u> -This source shall be limited to a maximum consumption rate as listed below:

> Consumption of natural gas for combustion in the steam boiler shall not exceed 819 MMscf per year and 68.25 MMscf per month (Short term limits will be removed per the policy stated above).

<u>Condition 9</u> -Particulate emissions shall not exceed 0.15 lb/MMBtu based on New Source Performance Standards requirements of Regulation No. 6, Part B, Subpart II, Standards of Performance for New Fuel-Burning Equipment. (In addition, Regulation No. 1, Section III.A.1.b also applies.)

This source is subject to the requirements of Regulation No. 6, Part A, Subpart A, General Provisions.

<u>Condition 10</u> -Emission of air pollutants shall not exceed the following limitations:

Particulate Matter	5.73 tons per year

Particulate Matter < 10 μm	5.73 tons per year
Oxides of Nitrogen	57.33 tons per year
Carbon Monoxide	14.33 tons per year

The Carbon Monoxide emission limit has been changed to 34.4 tons per year to account for updated emission factor.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 11ME358-3 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Emissions from this boiler are produced during the combustion process, and are dependent upon operating conditions and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NO_X), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), and Particulate Matter (PM and PM_{10}). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. The Compliance Emission Factors used to determine emission limits in the Permit for the boiler are compared below to EPA Compilation of Air Pollution Emission Factors (AP-42) Section 1.4, Tables 1.4-(1-3), Emission Factors for Small Industrial Natural Gas Boilers (3/98).

Pollutant	Source Emission Factor	AP-42 (lb/MMscf)
PM	14.0	7.6
PM10	14.0	7.6
NOx	140.0	100.0
CO	84.0	84.0

3. Monitoring Plan- Johns Manville indicated in their application they would demonstrate compliance with the emission limits by monitoring fuel allocation and multiplying fuel usage with emission factors on a semi-annual basis. Specific monitoring guidance for Boilers located in attainment areas has been developed by the Division as shown on the attached grid titled, “Compliance/Scenario Summary - Gas Fired Boilers.” The source will be required to monitor fuel on a twelve month rolling total. Compliance with the fuel consumption limits shall ensure compliance with the emission limitations. Actual emissions shall be calculated annually. Compliance with the Opacity standard of 20% will be ensured by a certification that the boiler has used natural gas exclusively during the reporting period.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Units EP002-EP005</u> - Four (4) Midland Ross Natural Gas-Fired Ovens, Maximum Rated at 15.5 MMBtu/hr Each, SN's: Unknown.

Discussion:

1. Applicable Requirements- These ovens were installed and began operation in 1977. The original permits were issued on September 19, 1977 and were not modified until 1998. Based on these permits, the source was above PSD levels. In order to avoid PSD the source modified these old permits with more reasonable emission factors. Initial Construction Permits 11ME358-(4-7) were issued on December 15, 1998 with the following applicable requirements:

<u>Condition 3</u> -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

<u>Condition 6</u> -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

<u>Condition 7</u> -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

<u>Condition 8</u> -This source shall be limited to a maximum raw material process rate or fuel use rate for each oven as listed below:

> Processing (drying) of steam/hydraulic cured calcium silicate insulation panels shall not exceed 30,000 tons per year and 2,500 tons per month (short term limits will be removed per the policy stated above)
>
> Consumption of natural gas for combustion in the each drying oven shall not exceed 135.8 MMscf per year and 11.32 MMscf per month (short term limits will be removed per the policy stated above)

<u>Condition 9</u> -Emission of air pollutants for each oven shall not exceed the following limitations:

Particulate Matter	4.70 tons per year
Particulate Matter < 10 μm	4.70 tons per year
Oxides of Nitrogen	9.51 tons per year
Carbon Monoxide	2.38 tons per year

The Carbon Monoxide emission limit has been changed to 5.7 tons per year to account for updated emission factor.

In addition, all fuel burning equipment is subject to the requirements of Regulation No. 1.III.A.. - Standards of Performance for Fuel Burning Equipment.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permits were issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 11ME358-(4-7) and the appropriate provisions of the construction permits have been directly incorporated into this operating permit.

2. Emission Factors- Emissions from the ovens are produced during the combustion process, and are dependent upon operating conditions and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NO_X), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), and Particulate Matter (PM and PM_{10}). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. The Compliance Emission Factors used to determine emission limits in the Permit for the ovens are compared below to the EPA Compilation of Air Pollution Emission Factors (AP-42) Section 1.4, Tables 1.4-(1-3), Emission Factors for Small Industrial Natural Gas Boilers (3/98).

Pollutant	Source Emission Factor	AP-42 (lb/MMscf)
PM	14.0	7.6
PM10	14.0	7.6
NOx	140.0	100.0
CO	84.0	84.0

Agitation of the product can also produce additional PM and PM_{10} emissions. The emission factors below were approved by the Division and shall be used to calculate emissions.

Pollutant	Emission Factor (lb/ton)
PM	0.25

PM_{10}	0.25

3. Monitoring Plan- The source indicated in their application that they would monitor allocated fuel usage and calculate emissions on a semi-annual basis. As indicated for the boiler, specific monitoring guidance has been developed by the division. Since the ovens combust gas similar to boilers, the grid for "Compliance/Scenario Summary - Gas Fired Boilers" will be used for the ovens. The source will be required to monitor fuel on a twelve month rolling total. Compliance with the fuel consumption limits shall ensure compliance with the emission limitations. Actual emissions shall be calculated annually.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

Unit EP006- CalSil Trimmers and Slitters, 500-7 Mod III Baghouse Controlled.

Discussion:

1. Applicable Requirements- This equipment was installed and began operation in 1977. The original permit was issued on September 19, 1977 and was not modified until 1998. In order to avoid PSD the source modified this old permit with more reasonable emission factors. Initial Construction Permit 11ME358-1 was issued on December 15, 1998 with the following applicable requirements:

Condition 3 -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 6 -Emission control devices shall be operated, monitored, and maintained as per the recommendations of the manufacturer, and to ensure on-going satisfactory performance.

Condition 7 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 8 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

Condition 9 -This source shall be limited to a maximum process rate as listed

below:

> Processing (slitting and trimming) of calcium silicate insulation panels shall not exceed 20,950 tons per year and 2,500 tons per month (monthly limits for the first year only) The tons per year was incorrect in the permit and should be 30,000.

Condition 10 -Emission of air pollutants shall not exceed the following limitations:

Particulate Matter	0.45 tons per year
Particulate Matter < 10 μm	0.45 tons per year

In addition, all manufacturing processes are subject to the requirements of Regulation No. 1.III.C.1. - Standards of Performance for Manufacturing Processes.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 11ME358-1 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns(PM and PM_{10}). Emission factors for this equipment are based on similar operations at other facilities that have been stack tested. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.03
PM_{10}	0.03

3. Monitoring Plan- The source indicated in their application that they would record and log the pressure drop across the baghouse daily and daily record visual observations of dust loading which can trigger Method 9 readings. Periodic baghouse inspections as well as maintenance shall also be required.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit EP008</u>- Diatomaceous Earth Crushing Area, Wet Collection System Controlled.

Discussion:

1. Applicable Requirements- This equipment was installed and in operation prior to 1981. On September 14, 1981 a request for a construction permit was submitted due to the addition of a control device (wet scrubber). Final Approval Construction Permit 13ME486 was issued on August 12, 1982. A request for modification to increase throughput and emission limitations was received in 1998. Modified Construction Permit 13ME486 was issued on December 15, 1998 with the following applicable requirements:

<u>Condition 3</u> -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

<u>Condition 6</u> -Emission control devices shall be operated, monitored, and maintained as per the recommendations of manufactures, and to ensure on-going satisfactory performance.

<u>Condition 7</u> -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

<u>Condition 8</u> -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

<u>Condition 9</u> -This source shall be limited to a maximum process rate as listed below:

> Processing (pulverizing) of diatomaceous earth shall not exceed 35,000 tons per year and 3,000 tons per month (short term limits will be removed per the policy stated above)

<u>Condition 10</u> -Emission of air pollutants shall not exceed the following limitations:

Particulate Matter	2.52 tons per year
Particulate Matter < 10 μm	1.63 tons per year

In addition, all manufacturing processes are subject to the requirements of Regulation No. 1.III.C.1. - Standards of Performance for Manufacturing

Processes and Regulation No. 6., Part B, Section III.C. - Standards of Performance for New Manufacturing Processes. This unit is not a source of SO2 emissions therefore, the Regulation No. 6, Part B, Section III.D - standard for sulfur dioxide will not be incorporated into the operating permit.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 13ME486 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns(PM and PM_{10}). Emission factors were estimated and are based on similar operations at other facilities. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.144
PM_{10}	0.093

3. Monitoring Plan- The source indicated in their application that pressure drop on the wet scrubber and liquid flow rate would be recorded and logged daily. Daily visible observations which can trigger Method 9 readings shall also be required.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit EP009</u>- Xenotlite Trimmers, Sanders and Mix Tank Area, MKRO-Pulsaire Model 221510-20 Baghouse Controlled.

Discussion:

1. Applicable Requirements- This equipment was installed and began operation in March of 1985. The Xenotlite equipment consists of one (1) storage tank of speciality products, four (4) trimmers, four (4) sanders and a baghouse dust collector. Final Approval Construction Permit was issued on March 17, 1987. The permit was modified in 1998 due to increase in throughput and more recent emission factors. Modified Construction Permit 85ME018 was issued on December 15, 1998 with the following applicable

requirements:

Condition 3 -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 4 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 7 -This source shall be limited to a maximum process rate as listed below:

> Processing of insulation materials shall not exceed 17,500 tons per year and 1,500 tons per month (short term limits will be removed per the policy stated above)

Condition 8 - This source shall be equipped with a baghouse dust collector capable of reducing uncontrolled emissions of TSP by at least 99% and that of PM-10 by at least 95%. Operating parameters of the control equipment shall be identified prior to final approval of this permit. The identified operating parameters will replace the control efficiency requirement on the final permit. (The operating permit will incorporate operating parameters to ensure compliance with the emission limits, no efficiencies will be included in the permit)

Condition 9 -Emission of air pollutants shall not exceed the following limitations:

Particulate Matter	0.17 tons per year
Particulate Matter < 10 μm	0.17 tons per year

Condition 10 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

In addition, all manufacturing processes are subject to the requirements of Regulation No. 1.III.C.1. - Standards of Performance for Manufacturing Processes and Regulation No. 6., Part B, Section III.C. - Standards of Performance for New Manufacturing Processes. This unit is not a source of SO2 emissions therefore, the Regulation No. 6, Part B, Section III.D - standard for sulfur dioxide will not be incorporated into the operating permit.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval

construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 85ME018 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns(PM and PM_{10}). Emission factors for this equipment are based on similar operations at other facilities that have been stack tested. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.019
PM_{10}	0.019

3. Monitoring Plan- The source indicated in their application that they would record and log the pressure drop across the baghouse daily and daily record visual observations of dust loading which can trigger Method 9 readings. Periodic baghouse inspections as well as maintenance shall also be required.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit EP010</u>- Custom Made Natural Gas-Fired High Temperature Test Furnace, Maximum Rated at 6.0 MMBtu/hr, SN: Unknown.

Discussion:

1. Applicable Requirements- This furnace was installed and began operation in February 1986. The Final Approval Construction Permit was issued on August 7, 1986. The permit was modified due to increase in throughput as well as changed emission factors. Modified Construction Permit 85ME369 was issued on December 15, 1998 with the following applicable requirements:

<u>Condition 3</u> -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 6 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 7 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

Condition 8 -This source shall be limited to a maximum process/consumption rate as listed below:

Processing (testing) of calcium silicate insulation panels shall not exceed 210 tons per year and 18 tons per month (short term limits will be removed per the policy above)

Consumption of natural gas for combustion in the furnace shall not exceed 52.56 MMscf per year and 4.38 MMscf per month (short term limits will be removed per the policy stated above)

Condition 9 -Emission of air pollutants shall not exceed the following limitations:

Particulate Matter	2.41 tons per year
Particulate Matter < 10 μm	1.89 tons per year
Oxides of Nitrogen	2.63 tons per year

In addition, fuel burning equipment is subject to the requirements of Regulation No. 1.III.A. - Standards of Performance for Fuel Burning Equipment and Regulation No. 6., Part B, Section II.C. - Standards of Performance for New Fuel Burning Equipment.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permit 85ME369 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Emissions from this furnace are produced during the combustion process, and are dependent upon operating conditions and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NO_X), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), and Particulate Matter (PM and PM_{10}). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. The Compliance Emission Factors used to determine emission limits in the permit for the furnace are

compared to EPA Compilation of Air Pollution Emission Factors (AP-42) Section 1.4, Tables 1.4-(1-3), Emission Factors for Small Industrial Natural Gas Boilers (3/98).

Pollutant	Source Emission Factor	AP-42 (lb/MMscf)
PM	11.9	7.6
PM10	11.9	7.6
NOx	100.0	100.0
CO	21.0	84.0

Agitation of the product can also produce additional PM and PM_{10} emissions. The emission factors determined were approved by the Division and shall be used to calculate emissions.

Pollutant	Emission Factor (lb/ton)
PM	20.0
PM_{10}	15.0

3. Monitoring Plan- The source indicated in their application that they would monitor allocated fuel usage and calculate emissions on a semi-annual basis. As indicated for the boiler, specific monitoring guidance has been developed by the division. Since the furnace combusts gas similar to a boiler, the grid for "Compliance/Scenario Summary - Gas Fired Boilers" will be used for the furnace. The source will be required to monitor fuel on a twelve month rolling total. Compliance with the fuel consumption limits shall ensure compliance with the emission limitations. Actual emissions shall be calculated annually.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

Unit EP011- CalSil Batch Mixer # 1, Baghouse Controlled.

Discussion:

1. Applicable Requirements- This mixer was installed and began operation in 1982. The source requested a permit in 1998. Initial Approval Construction Permit 98ME0190 was issued on December 15, 1998 with the following applicable requirements:

Condition 3 -Visible emissions shall not exceed twenty percent (20%) opacity

during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 5 -Emission control devices shall be operated, monitored, and maintained as per the recommendations of the manufacturer, and to ensure on-going satisfactory performance.

Condition 6 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 7 -This source shall be limited to a maximum raw material process rate as listed below:

> Processing (mixing) of ingredients for calcium silicate insulation shall not exceed 30,000 tons per year and 2,500 tons per month (monthly limits for the first year only)

Condition 8 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

Condition 9 -Emission of air pollutants for shall not exceed the following limitations:

Particulate Matter	0.15 tons per year
Particulate Matter < 10 μm	0.15 tons per year

In addition, all manufacturing processes are subject to the requirements of Regulation No. 1.III.C.1. - Standards of Performance for Manufacturing Processes and Regulation No. 6., Part B, Section III.C. - Standards of Performance for New Manufacturing Processes. This unit is not a source of SO2 emissions therefore, the Regulation No. 6, Part B, Section III.D - standard for sulfur dioxide will not be incorporated into the operating permit.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 98ME0191 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns(PM and

PM_{10}). Emission factors for this equipment are based on similar operations at other facilities that have been stack tested. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.01
PM_{10}	0.01

3. Monitoring Plan- The source indicated in their application that they would record and log the pressure drop across the baghouse daily and daily recorded visual observations of dust loading which can trigger Method 9 readings. Periodic baghouse inspections as well as maintenance shall also be required.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

Unit EP012- Custom Made Fuel Oil # 1-Fired High Temperature Test Furnace, Maximum Rated at 22.0 MMBtu/hr, SN: Unknown.

Discussion:

1. Applicable Requirements- This furnace was installed and began operation before 1996. The source requested a permit in 1998. Initial Construction Permit 98ME0191 was issued on December 15, 1998 with the following applicable requirements:

Condition 3 -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 5 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 6 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

Condition 7 -This source shall be limited to a maximum consumption/production/process rates as listed below:

Processing (testing) of calcium silicate insulation panels shall not exceed 210 tons per year and 18 tons per month (short term limits will be removed per the policy stated above)

Consumption of Fuel Oil # 1 for combustion in the furnace shall not exceed 31,200 gallons per year and 2,600 gallons per month (short term limits will be removed per the policy stated above)

Condition 8 -Emission of air pollutants for each oven shall not exceed the following limitations:

Particulate Matter	2.13 tons per year
Particulate Matter < 10 μm	1.61 tons per year
Oxides of Nitrogen	0.31 tons per year
Carbon Monoxide	0.08 tons per year
Sulfur Dioxide	0.44 tons per year

In addition, fuel burning equipment is subject to the requirements of Regulation No. 1.III.A. - Standards of Performance for Fuel Burning Equipment and Regulation No. 6., Part B, Section II.C. and II.D - Standards of Performance for New Fuel Burning Equipment.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 98ME0191 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Emissions from this furnace are produced during the combustion process, and are dependent upon operating conditions and specific properties of the fuel being burned. The pollutants of concern are Nitrogen Oxides (NO_X), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Sulfur Oxides (SO_X) and Particulate Matter (PM and PM_{10}). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. The Compliance Emission Factors used to determine emission limits in the permit for the furnace are compared to EPA Compilation of Air Pollution Emission Factors (AP-42) Section 1.3, Table 1.3-1, Emission Factors for Fuel Oil Combustion (9/98).

Pollutant	Source Emission Factor	AP-42 (lb/Mgal)
PM	2.0	2.0
PM10	2.0	2.0

NOx	20.0	20.0
CO	5.0	5.0
SO2	28.4*	28.4*

* based on 0.2% sulfur

Agitation of the product can also produce additional PM and PM_{10} emissions. The emission factors determined were approved by the Division and shall be used to calculate emissions.

Pollutant	Emission Factor (lb/ton)
PM	20.0
PM_{10}	15.0

3. Monitoring Plan- The source indicated in their application that they would monitor allocated fuel usage and calculate emissions on a semi-annual basis. As indicated for the boiler, specific monitoring guidance has been developed by the division. Since the furnace combusts oil similar to a boiler the grid for "Compliance/Scenario Summary - Gas Fired Boilers" will be used for the furnace. The source will be required to monitor fuel on a twelve month rolling total. Compliance with the fuel consumption limits shall ensure compliance with the emission limitations. Actual emissions shall be calculated annually. Quarterly Method 9 readings shall be performed to demonstrate compliance with the opacity standard.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

Unit EP013- Natural Gas-Fired Drying Oven, Maximum Rated at 6.5 MMBtu/hr, SN: Unknown.

Discussion:

1. Applicable Requirements- This oven had not yet been installed as of issued date of this permit. Operation is projected to start in 1999. Initial Approval Construction Permit 98ME0192 was issued on December 15, 1998 with the following applicable requirements:

Condition 1 - Construction of this source must commence within 18 months of initial approval permit issuance date or within 18 months of the start-up date stated in the application.

Condition 3 -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process

modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 6 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 7 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

Condition 8 -This source shall be limited to a maximum process/consumption rate as listed below:

> Processing (drying) of calcium silicate insulation panels shall not exceed 25,000 tons per year and 2,100 tons per month (monthly limits for the first year only)
>
> Consumption of natural gas for combustion shall not exceed 56.94 MMscf per year and 4.745 MMscf per month (monthly limits for the first year only)

Condition 9 -Emission of air pollutants for shall not exceed the following limitations:

Particulate Matter	3.53 tons per year
Particulate Matter < 10 μm	3.53 tons per year
Oxides of Nitrogen	3.99 tons per year

In addition, fuel burning equipment is subject to the requirements of Regulation No. 1.III.A. - Standards of Performance for Fuel Burning Equipment and Regulation No. 6., Part B, Section II.C. - Standards of Performance for New Fuel Burning Equipment.

The source indicated that this unit is subject to NSPS Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries requirements (as adopted by reference in Regulation No. 6, Part A, Subpart UUU). However, after further investigation it was determined that this oven is not subject to Subpart UUU because the material that will be dried by this unit is not greater than 50% of any of the listed minerals.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction

permit 98ME0192 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Emissions from this oven are produced during the combustion process, and are dependent upon operating conditions and specific properties of the natural gas being burned. The pollutants of concern are Nitrogen Oxides (NO_X), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), and Particulate Matter (PM and PM_{10}). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. The Compliance Emission Factors used to determine emission limits in the permit for the oven are compared to EPA Compilation of Air Pollution Emission Factors (AP-42) Section 1.4, Tables 1.4-(1-3), Emission Factors for Small Industrial Natural Gas Boilers (3/98).

Pollutant	Source Emission Factor	AP-42 (lb/MMscf)
PM	14.0	7.6
PM10	14.0	7.6
NOx	140.0	100.0
CO	35.0	84.0

Agitation of the product can also produce additional PM and PM_{10} emissions. The emission factors determined were approved by the Division and shall be used to calculate emissions.

Pollutant	Emission Factor (lb/ton)
PM	0.25
PM_{10}	0.25

3. Monitoring Plan- The source indicated in their application that they would monitor allocated fuel usage and calculate emissions on a semi-annual basis. As indicated for the boiler, specific monitoring guidance has been developed by the division. Since the ovens combusts gas similar to boilers the grid for “Compliance/Scenario Summary - Gas Fired Boilers” will be used for the oven. The source will be required to monitor fuel on a twelve month rolling total. Compliance with the fuel consumption limits shall ensure compliance with the emission limitations. Actual emissions shall be calculated annually.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit EP014</u>- CalSil Batch Mixer # 2, Baghouse Controlled.

Discussion:

1. Applicable Requirements- This mixed had not yet been installed as of the issue date of this permit. Operation is projected to start in 1999. Initial Approval Construction Permit 98ME0193 was issued on December 15, 1998 with the following applicable requirements:

<u>Condition 1 -</u> Construction of this source must commence within 18 months of initial approval permit issuance date or within 18 months of the start-up date stated in the application.

<u>Condition 3</u> -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

<u>Condition 6</u> - Emission control devices shall be operated, monitored, and maintained as per the recommendations of the manufacturer, and to ensure on-going satisfactory performance.

<u>Condition 7</u> -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

<u>Condition 8</u> -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

<u>Condition 9</u> -This source shall be limited to a maximum production/process rates as listed below:

> Processing (mixing) of ingredients for calcium silicate insulation shall not exceed 25,000 tons per year and 2,100 tons per month (monthly limits for the first year only)

<u>Condition 10</u> -Emission of air pollutants for shall not exceed the following limitations:

Particulate Matter	0.75 tons per year
Particulate Matter < 10 μm	0.56 tons per year

In addition, all manufacturing processes are subject to the requirements of Regulation No. 1.III.C.1. - Standards of Performance for Manufacturing Processes and Regulation No. 6., Part B, Section III.C. - Standards of

Performance for New Manufacturing Processes. This unit is not a source of SO2 emissions therefore, the Regulation No. 6, Part B, Section III.D - standard for sulfur dioxide will not be incorporated into the operating permit.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 98ME0193 and the appropriate provisions of the construction permit have been directly incorporated into this operating permit.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns(PM and PM_{10}). Emission factors for this equipment are based on similar operations at other facilities that have been stack tested. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.06
PM_{10}	0.045

3. Monitoring Plan- The source indicated in their application that they would record and log the pressure drop across the baghouse daily and daily record visual observations of dust loading which can trigger Method 9 readings. Periodic baghouse inspections as well as maintenance shall also be required.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

Unit EP015- End Product Area, Baghouse Controlled.

Discussion:

1. Applicable Requirements- This area had not yet been constructed as of the issue date of this permit. Operation is projected to start in 1999 and shall include one (1) cutting saw, one (1) packing machine, and one (1) baghouse. Initial Approval Construction Permit 98ME0194 was issued on December 15, 1998 with the following applicable requirements:

Condition 1 - Construction of this source must commence within 18 months

of initial approval permit issuance date or within 18 months of the start-up date stated in the application.

Condition 3 -Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes.

Condition 6 - Emission control devices shall be operated, monitored, and maintained as per the recommendations of the manufacturers, and to ensure on-going satisfactory performance.

Condition 7 -This source is subject to the odor requirements of Regulation No. 2. This condition will not be specifically listed in the permit for this unit because these units are not typically an odor source.

Condition 8 -A revised Air Pollutant Emission Notice (APEN) shall be filed in accordance with Regulation No. 3, Part A, II.C.

Condition 9 -This source shall be limited to a maximum process rate as listed below:

> Processing (sawing and packaging) of insulation products (boards) shall not exceed 25,000 tons per year and 2,100 tons per month (monthly limits for the first year only)

Condition 10 -Emission of air pollutants for shall not exceed the following limitations:

Particulate Matter	0.32 tons per year
Particulate Matter < 10 μm	0.32 tons per year

In addition, all manufacturing processes are subject to the requirements of Regulation No. 1.III.C.1. - Standards of Performance for Manufacturing Processes and Regulation No. 6., Part B, Section III.C. - Standards of Performance for New Manufacturing Processes. This unit is not a source of SO2 emissions therefore, the Regulation No. 6, Part B, Section III.D - standard for sulfur dioxide will not be incorporated into the operating permit.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit was issued and/or the equipment commenced operation. Therefore, the Division considers that the Responsible Official certification submitted with that report will serve as the self-certification for construction permits 98ME0194 and the appropriate provisions of the construction permit

have been directly incorporated into this operating permit.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns(PM and PM_{10}). Emission factors for this equipment are based on similar operations at other facilities that have been stack tested. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.025
PM_{10}	0.025

3. Monitoring Plan- The source indicated in their application that they would record and log the pressure drop across the baghouse daily and daily record visual observations of dust loading which can trigger Method 9 readings. Periodic baghouse inspections as well as maintenance shall also be required.

4. Compliance Status- A current APEN reporting criteria emissions is on file with the Division. Transfer of ownership and modification of existing permits has been completed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

<u>Unit EP017</u>- Five (5) Silos; One (1) Cement, One (1) Lime, One (1) Silica, One (1) Bentonite and One (1) Gypsum, Baghouse Controlled, SN's: Unknown.

Discussion:

1. Applicable Requirements- All five of these silos were installed and began operation prior to 1977. For the existing silos the uncontrolled actual emissions are above APEN deminimis therefore permits are needed for these silos. The following applicable requirements have been directly incorporated into the operating permit: emission limitations, throughput limitations, 20% opacity requirement, operation and maintenance practices and APEN reporting in accordance with Regulation No. 3, Part A, II.C.

2. Emission Factors- Pollutants of concern for this equipment are Particulate Matter and Particulate Matter less than 10 microns (PM and PM_{10}). Emission factors for these silos are vender specific based emission factors. The emission factors below are from AP-42 Section 11.17 (2/98) for Lime product loading uncontrolled multiplied by an efficiency of 99% for the baghouses. The following emission factors were approved by the Division to calculate emissions from this equipment:

Pollutant	Emission Factor (lb/ton)w/controls
PM	0.022
PM_{10}	0.022

3. Monitoring Plan- The source shall record monthly loading into the silos. Compliance with the particulate limits shall rely on the proper maintenance and operation of the baghouses and daily visual observations shall be performed to monitor compliance with the opacity requirements.

4. Compliance Status- An APEN reporting criteria pollutants is on file with the Division for the 5 (five) existing silo's. The source plans on submitting APENs for the new silo's when they are constructed. Therefore, this source is currently considered to be in compliance with all applicable requirements.

IV. Insignificant Activities

Analytical Laboratory Equipment
Four (4) natural gas heaters, each < 5MMBtu/hr
Aerosol Can Storage
Chemical Storage Area
Propane Tank, < 60,000 gallons
Fuel Oil # 1 storage tank, < 400,000 gallons
Box gluing operations
Steam vents

V. Alternative Operating Scenarios

No alternative operating scenarios were requested.

VI. Permit Shield

No regulations were specifically requested for shielding from this operating permit. However, several standards that are identical in Reg. 1 and Reg. 6 were streamlined to include Reg.1 only. Reg. 1 is applicable at all times where as Reg. 6 is exempt during startup, shutdown and malfunction.