



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
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TO: Interested Parties / Applicant
DATE: November 21, 2005
RE: Castle Products, Inc. / 039-21785-00637
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-AM.dot 1/10/05



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
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November 21, 2005

Mr. Joel Korenstra
Castle Products, Inc.
401 East Lincoln Avenue
Nappanee, Indiana 46550

Dear Mr. Korenstra:

Re: Exempt Operation Status,
039-21785-00637

The application from Castle Products, Inc., received on September 22, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following polymer resin plastic products manufacturing operation, located at 401 East Lincoln Avenue, Nappanee, Indiana, is classified as exempt from air pollution permit requirements:

- (a) A polymer resin plastic products manufacturing operation, consisting of closed molding casting operations, identified as EU-01, and compression molding casting operations, identified as EU-02, installed in 2003, with a total maximum capacity of 297 pounds of plastic parts per hour and 1.34 pounds of VOC emissions per hour, using hand application methods, and exhausting inside the building.
- (b) Cutting, grinding and sanding operations with a maximum throughput of 297 pounds per hour, controlled by a portable dust collector, and exhausting inside the building.
- (c) Three (3) 0.1 MMBtu per hour infrared heaters.
- (d) Application of sealant and adhesive to finished products, with a maximum capacity of 0.01 pounds of VOC per hour, with emissions exhausting inside the building.
- (e) Cleaning operations using acetone-based solvents, with emissions exhausting inside the building.
- (f) Mold release agents using low volatile products (vapor pressure less than or equal to two (2) kilo Pascals measured at thirty-eight (38) degrees Centigrade) with a maximum capacity of 0.37 pounds of VOC emissions per hour.
- (g) A laboratory as defined in 326 IAC 2-1.1-3(e)(3)

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the cutting, grinding and sanding facilities, operating at a maximum throughput rate of 297 pounds per hour, shall be limited to less than 1.14 pounds per hour. The particulate emission rate was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Mr. Stephen Treimel, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7902 to speak directly to Mr. Treimel. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204-2251 or call (800) 451-6027, ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,
Original signed by

Nysa L. James, Section Chief
Permits Branch
Office of Air Quality

ERG/ST

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance – Paul Karciewicz
Northern Regional Office
Permit Tracking
Compliance Data Section
Program Planning and Policy – Scott Delaney

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	Castle Products, Inc
Source Location:	401 East Lincoln Avenue, Nappanee, Indiana 46550
County:	Elkhart
SIC Code:	3089
Operation Permit No.:	039-21785-00637
Permit Reviewer:	ERG/ST

The Office of Air Quality (OAQ) has reviewed an application from Castle Products, Inc. relating to the operation of a polymer resin plastic products manufacturing operation.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units and pollution control devices:

- (a) A polymer resin plastic products manufacturing operation, consisting of closed molding casting operations, identified as EU-01, and compression molding casting operations, identified as EU-02, installed in 2003, with a combined total maximum capacity of 297 pounds of plastic parts per hour, using hand application methods, and exhausting inside the building.
- (b) Cutting, grinding and sanding operations each with a maximum throughput of 297 pounds of plastic parts per hour, controlled by a portable dust collector, and exhausting inside the building.
- (c) Three (3) 0.1 MMBtu per hour infrared heaters.
- (d) Application of sealant and adhesive to finished products, with a maximum capacity of 66 parts per hour, with emissions exhausting inside the building.
- (e) Cleaning operations using acetone-based solvents, with emissions exhausting inside the building.
- (f) Mold release agents using low volatile products (vapor pressure less than or equal to two (2) kilo Pascals measured at thirty-eight (38) degrees Centigrade) with a maximum capacity for treating molds for 66 parts per hour.
- (g) A laboratory as defined in 326 IAC 2-1.1-3(e)(3)

Existing Approvals

This is the first operating approval to be issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on September 22, 2005.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 3).

Potential to Emit of the Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential to Emit (tons/yr)
PM	0.5
PM-10	0.5
PM _{2.5}	0.5
SO ₂	Negligible
VOC	7.5
CO	0.1
NO _x	0.1

HAPs	Potential to Emit (tons/yr)
Styrene	2.18
Dimethyl Phthalate	1.37
Xylene	0.11
All Others	0.07
Total	3.73

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1) of PM₁₀, SO₂, NO_x, VOC, CO, and Lead are less than the levels listed in 326 IAC 2-1.1-3(d)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1) of any single HAP is less than ten (10) tons per year and/or the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Since these levels are less than the thresholds specified in 326 IAC 2-1.1-3(d)(4) and the source is not otherwise required to apply for a registration or permit, the source is subject to the provisions of 326 IAC 2-1.1-3. An exemption will be issued.

- (c) **Fugitive Emissions**
 Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	Attainment
PM 2.5	Unclassifiable or Attainment
SO ₂	Attainment
NO ₂	Attainment
1-hour Ozone	Maintenance Attainment
8-hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

- (a) Elkhart County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability-Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for 326 IAC 2-3 (Emission Offset). See the State Rule Applicability – Entire Source section.
- (c) Elkhart County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability-Entire Source section.

Source Status

Existing Source PSD and Emission Offset Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	Negligible
PM-10	Negligible
SO ₂	Negligible
VOC	7.5
CO	0.1
NO _x	0.1
Single HAP	2.18
Combination HAPs	3.73

- (a) This existing source is not a major stationary source because no regulated pollutant is emitted at a rate of 250 tons per year or greater and no nonattainment regulated pollutant

is emitted at a rate of 100 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2 and 326 IAC 2-3, the PSD and Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this exemption for this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Parts 61, 63) included in this exemption for this source.
- (c) The requirements of the National Emissions Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production (40 CFR 63, Subpart WWWW) is not included in this permit. This source is a minor source of HAP.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-3 (Emission Offset)

This source is not in 1 of the 28 source categories. Therefore, fugitive emissions are not counted towards applicability of PSD and Emission Offset.

This source was constructed in 2003. At the time of construction, the potential to emit of PM, PM10, PM2.5, NOx, SO₂, CO and VOC was less than 250 tons per year. This source was a minor source under PSD at the time of construction.

This source is located in Elkhart County. Elkhart County was designated as a non-attainment area for the 8-hour ozone standard on June 15, 2004. The potential to emit of VOC and NOx for this source is less than 100 tons per year. Therefore, this source is a minor source under Emission Offset. Any future modifications that increase VOC or NOx emissions must be reviewed in accordance with 326 IAC 2-3.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The source was constructed after July 27, 1997. The operation of the polymer resin plastic products casting/molding facilities emits less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Elkhart County and is not required to operate under the Part 70 permit program. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

This source is located in Elkhart County. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability – Individual Facilities

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

The polymer resin plastic products casting/molding facilities at this source apply filled resins using hand application processes, producing no particulate emissions. Therefore, the requirements of 326 IAC 6-3-2 do not apply to these facilities

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the cutting, grinding and sanding facilities, each operating at a maximum throughput rate of 297 pounds per hour, shall be limited to less than 1.14 pounds per hour each. The particulate emission rate was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Calculations show that the potential to emit before controls of the cutting, grinding and sanding facilities is less than the allowable emission rate under 326 IAC 6-3-2. (See Appendix A, page 2)

326 IAC 8-1-6 (Volatile Organic Compounds: New Facilities)

Although constructed after January 1, 1980, the potential to emit of volatile organic compounds for the entire source is less than 25 tons per year. Therefore, the requirements of 326 IAC 8-1-6 do not apply.

326 IAC 8-2 (Surface Coating Emission Limitations)

The facilities at this source do not apply surface coatings. Therefore, the requirements of 326 IAC 8-2 do not apply.

326 IAC 20-25 (Reinforced Plastics Composites Fabricating Emission Units)

This source does not have the potential to emit ten (10) tons per year of a single hazardous air pollutant or twenty-five (25) tons per year of a combination of hazardous air pollutants and are not operating an open molding process. Therefore, the requirements of 326 IAC 20-25 do not apply.

326 IAC 20-56 (Reinforced Plastics Composites Production)

This source does not have the potential to emit ten (10) tons per year of a single hazardous air pollutant or twenty-five (25) tons per year of a combination of hazardous air pollutants. Therefore, the requirements of 326 IAC 20-56 do not apply.

Conclusion

The operation of this polymer resin plastic products manufacturing operation shall be subject to the conditions of the attached Exemption No.: 039-21785-00637.

Appendix A: Emissions Calculations
HAP and VOC Emissions from Resin Casting/Molding Operations

Company Name: Castle Products, Inc.
 Address: 401 East Lincoln Avenue, Nappanee, Indiana 46550
 Exemption: 039-21785-00637
 Reviewer: ERG/ST
 Date: November 1, 2005

Material	Density (lbs/gal)	Usage (gals/part)	Maximum Production Rate (parts/hour)	Maximum Annual Usage (tons/year)	VOC (weight %)	HAP (weight %)	VOC Emission Factor (lbs/ton material)	PTE of VOC (tons/year)	Styrene Emission Factor (lbs/ton material)	PTE of Styrene (tons/year)	PTE of Dimethyl Phthalate (tons/year)	PTE of MEK (tons/year)	PTE of Xylene (tons/year)	PTE of Ethyl Benzene (tons/year)
Line 1 Resin	9.17	0.074	60	178	35.0%	35.0%	21.0	1.87	21.0	1.87	0.00	0.00	0.00	0.00
Line 1 Catalyst	8.94	0.0015	60	3.48	100.0%	37.0%	2000	3.48	740	0.00	1.25	0.03	0.00	0.00
Line 2 Resin	9.34	0.072	6	17.7	33.0%	33.0%	19.8	0.17	19.8	0.17	0.00	0.00	0.00	0.00
Line 2 Catalyst	8.94	0.0014	6	0.34	100.0%	37.0%	2000	0.34	740	0.00	0.12	0.00	0.00	0.00
Release Agent 1	6.26	0.050	1	1.37	93.0%	10.0%	1860	1.27	200	0.1	0.00	0.00	0.11	0.03
Release Agent 2	6.00	0.013	1	0.34	100.0%	0.0%	2000	0.34	0	0.00	0.00	0.00	0.00	0.00
Adhesive	8.76	0.006	1	0.23	20.0%	0.0%	400	0.05	0	0.00	0.00	0.00	0.00	0.00
Totals								7.53		2.18	1.37	0.04	0.11	0.03

Acetone is used for cleanup.

Emission factors (in lbs/ton) for styrene and MEK for resin casting are from the "Technical Discussion of the Unified Emission Factors for Open Molding of Composites" (April, 1999) Styrene emissions are a maximum of 3% of styrene content for casting operations. Assume catalyst emissions are 100% of catalyst VOC and HAP content.

Resin is mixed with catalyst and filler and applied by hand with 100% transfer efficiency.

The Release Agent 2 and Adhesive contain no HAP.

Methodology:

Maximum Annual Usage (tons/year) = Density (lbs/gal) x Usage (gal/part) x Maximum Production Rate (parts/hour) x 8760 (hours/year) x 1 ton/2000 lbs

VOC/HAP Emission Factor (lbs/ton material) = Weight % VOC x % VOC emitted x 1 ton/2,000 lbs

PTE of VOC and HAPs (tons/year) = Max. Annual Usage (tons/year) x Emission Factor (lbs/ton material) x 1 ton/2000 lbs

Appendix A: Emission Calculations
Particulate Emissions From Cutting, Grinding and Sanding Operations

Company Name: Castle Products, Inc.
 Address: 401 East Lincoln Avenue, Nappanee, Indiana 46550
 Exemption: 039-21785-00637
 Reviewer: ERG/ST
 Date: November 1, 2005

Emission Unit	Process Weight Rate (lbs/hr)	Throughput (parts/hour)	Material Removed * (lbs/part)	Control Efficiency (%)	Uncontrolled PTE of PM/PM10 (tons/year)	Uncontrolled PTE of PM/PM10 (lbs/hour)	Controlled PTE of PM/PM10 (tons/year)	Controlled PTE of PM/PM10 (lbs/hour)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hour)
Cutting	297	66	0.0006	99.0%	0.171	0.04	0.0017	0.0004	1.14
Grinding		66	0.0006	99.0%	0.171	0.04	0.0017	0.0004	1.14
Sanding/Polish		66	0.0006	99.0%	0.171	0.04	0.0017	0.0004	1.14
Totals					0.513	0.117	0.005	0.001	3.43

Assume all PM is equal to PM10.

* Based on reported amount of material removed during cutting operations.

Particulate emissions are controlled by a portable bag filter that exhausts inside the building.

Methodology

Material Removed (lbs/part) = 0.03125 (lbs/cubic inch) x 0.0189 (cubic inches/part)

PTE of PM/PM10 Uncontrolled (tons/year) = Material Removed (lbs/part) x Throughput (parts/hour) x 8760 (hours/year) x 1 ton/2000 lbs

PTE of PM/PM10 Uncontrolled (lbs/hour) = Material Removed (lbs/part) x Throughput (parts/hr)

PTE of PM/PM10 Controlled (tons/year) = Material Removed (lbs/part) x Throughput (parts/hour) x 8760 (hours/year) x 1 ton/2000 lbs x (1 - Control Efficiency (%))

PTE of PM/PM10 Controlled (lbs/hour) = Material Removed (lbs/part) x Throughput (parts/hr) x (1 - Control Efficiency (%))

Allowable PM Emission Rate (lbs/hour) = 4.10 x (Maximum Throughput Rate (297 lbs/hour)/ 2000 lbs) ^ 0.67

Appendix A: Emission Calculations
Combustion Emissions from the Natural Gas-fired Heaters

Company Name: Castle Products, Inc.
 Address: 401 East Lincoln Avenue, Nappanee, Indiana 46550
 Exemption: 039-21785-00637
 Reviewer: ERG/ST
 Date: November 1, 2005

Equipment Description	Total Heat Input Capacity (MMBtu/hour)	Total Max. Potential Throughput (MMCF/year)
Three (3) 0.1 MMBtu/hr Infrared Heaters	0.30	2.63

Pollutant Emission Factors (lbs/MMCF)						
PM*	PM10*	SO ₂	NO _x **	CO	VOC	HAPs
7.6	7.6	0.6	100	84.0	5.5	1.89

Emission Unit ID	Potential To Emit (tons/year)						
	PM	PM10	SO ₂	NO _x	CO	VOC	HAPs
Three (3) 0.1 MMBtu/hr Infrared Heaters	0.01	0.01	0.00	0.1	0.1	0.01	0.002

*PM and PM10 emission factor are for condensable and filterable PM and PM10 combined.

**Emission factor for NO_x: Uncontrolled = 100 lbs/MMCF

Emission factors are from AP-42, Chapter 1.4 - Natural Gas Combustion, Tables 1.4-1, 1.4-2, 1.4-3 and 1.4-4. SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03. (AP-42 Supplement D 7/98)

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF - 1,000,000 Cubic Feet of Gas

1000 Btu per cubic foot of natural gas

Methodology

Total Max. Potential Throughput (MMCF/year) = Heat Input Capacity (MMBtu/hour) x 8,760 (hours/year) x 1 MMCF/1,000 MMBtu

PTE (tons/year) = Total Max. Potential Throughput (MMCF/year) x Emission Factor (lbs/MMCF) x 1 ton/2000 lbs