INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mitchell E. Daniels, Jr.
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100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: March 17, 2006

RE: Dicaperl Mineral Corporation / 107-21790-00012

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

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 IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

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 of 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
FN-REGIS.dot 1/10/05

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mr. Bill Staten
Dicaperl Mineral Corporation
2510 North Concord Road
Crawfordsville, Indiana 47933

March 17, 2006

Re: Registered Construction and Operation Status,
107-21790-00012

Dear Mr. Staten:

The application from Dicaperl Mineral Corporation received on September 15, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the following perlite expansion plant located at 2510 North Concord Road, Crawfordsville, Indiana 47933 is classified as registered:

(a) Two (2) natural gas-fired perlite expansion furnaces, designated as Furnace #1 and Furnace #2, each with a heat input capacity of 6.0 MMBTU/hr, and a maximum throughput capacity of 1.5 tons of perlite per hour. Particulate emissions are controlled by a baghouse identified as baghouse No.1 and a cyclone identified as cyclone No.1 which exhaust to stack S1. Both furnaces were constructed in 1971.

(b) Two (2) natural gas-fired perlite expansion furnaces, designated as Furnace #3 and Auxiliary Furnace #4, each with a heat input capacity of 4.0 MMBTU/hr, and a maximum throughput capacity of 0.5 tons of perlite per hour. Particulate emissions are controlled by baghouses identified as baghouse No. 2, baghouse No. 3, and the Aux/Agg. baghouse. Furnace #3 exhausts to stack S3, while Auxiliary Furnace #4 exhausts to stack S2. Furnace #3 was constructed in 1997 and Auxiliary Furnace #4 was constructed in 1986.

(c) Miscellaneous Material Handling Activities including:

(1) Six (6) perlite ore storage bins. Storage bins PB #1 and PB #2 each have a storage capacity of four hundred (400) tons. Storage bins PB #3 though PB #6 each have a storage capacity of one hundred (100) tons. Each bin has a maximum throughput of 8.0 tons of perlite ore per hour. Each bin is equipped with a baghouse. Material is conveyed to and from these bins via screw conveyor.

(2) Six (6) storage bins used to store finished product (expanded perlite). Storage bins FB #1 through FB #6 each have a storage capacity of twenty (20) tons. Each bin has a maximum throughput of 8.0 tons of expanded perlite per hour. Each bin is equipped with a baghouse. Material is pneumatically conveyed to and from these bins.

(3) Truck unloading and product bagging, with a maximum throughput of 8.0 tons of expanded perlite per hour and 8.0 tons of perlite ore per hour.

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, the allowable particulate emissions from each of the expansion furnaces shall not exceed the pounds per hour emission rates shown in the following table:

Stack	Process Weight (Pounds/Hour)	PM Emission Rate (lbs/hour)
Furnace #1	3,000	5.38
Furnace #2	3,000	5.38
Furnace #3	1,000	2.58
Auxiliary Furnace #4	1,000	2.58

The pounds per hour limitation was calculated with the following equation:

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

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

The cyclone and baghouse shall be in operation at all times the expansion furnaces are in operation, in order to comply with this limit.

3. Pursuant to 326 IAC 6-3-2, the particulate emissions from the miscellaneous material handling activities (truck unloading, product bagging, and storage bins) shall not exceed 16.5 pounds per hour when operating at a process rate of 16,000 pounds per hour.

   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:

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

This registration is a revised registration issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
Indianapolis, IN 46204-2251

no later than March 1 of each year, with the annual notice being submitted in the format attached.

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 Ms. Heather Jackson, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7802 to speak directly to Ms. Jackson. 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

Kathy Moore, Section Chief
Permits Branch
Office of Air Quality

ERG/HJ

cc: File – Montgomery County
Montgomery County Health Department
Air Compliance – Jim Thorpe
Permit Tracking
Compliance Data Section

Registration
Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	**Dicaperl Minerals Corporation**
Address:	**2510 North Concord Road**
City:	**Crawfordsville, Indiana 47933**
Authorized individual:	**Bill Staten**
Phone #:	**(765) 362-6000**
Registration #:	**107-21790-00012**

I hereby certify that Dicaperl Minerals Corporation is still in operation and is in compliance with the requirements of Registration No. 107-21790-00012.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Dicaperl Minerals Corporation
Location:	2510 North Concord Road, Crawfordsville, Indiana 47933
County:	Montgomery
SIC Code:	3295
Registration No.:	107-21790-00012
Permit Reviewer:	ERG/HJ

The Office of Air Quality (OAQ) has reviewed an application from Dicaperl Minerals Corporation relating to the operation of a perlite expansion plant.

History

The source was constructed in 1971. The source was issued a permit in 1985 for three perlite expansion furnaces. The source received a permit in 1989 for the fourth furnace. Both of these permits have expired. The source has been operating without a permit since 1993. This registration will bring the source back into compliance.

Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units:

(a) Two (2) natural gas-fired perlite expansion furnaces, designated as Furnace #1 and Furnace #2, each with a heat input capacity of 6.0 MMBTU/hr, and a maximum throughput capacity of 1.5 tons of perlite per hour. Particulate emissions are controlled by a baghouse identified as baghouse No.1 and a cyclone identified as cyclone No.1 which exhaust to stack S1. Both furnaces were constructed in 1971.

(b) Two (2) natural gas-fired perlite expansion furnaces, designated as Furnace #3 and Auxiliary Furnace #4, each with a heat input capacity of 4.0 MMBTU/hr, and a maximum throughput capacity of 0.5 tons of perlite per hour. Particulate emissions are controlled by baghouses identified as baghouse No. 2, baghouse No. 3, and the Aux/Agg. baghouse. Furnace #3 exhausts to stack S3, while Auxiliary Furnace #4 exhausts to stack S2. Furnace #3 was constructed in 1997 and Auxiliary Furnace #4 was constructed in 1986.

(c) Miscellaneous Material Handling Activities including:

(1) Six (6) perlite ore storage bins. Storage bins PB #1 and PB #2 each have a storage capacity of four hundred (400) tons. Storage bins PB #3 though PB #6 each have a storage capacity of one hundred (100) tons. Each bin has a maximum throughput of 8.0 tons of perlite ore per hour. Each bin is equipped with a baghouse. Material is conveyed to and from these bins via screw conveyor.

(2) Six (6) storage bins used to store finished product (expanded perlite). Storage bins FB #1 through FB #6 each have a storage capacity of twenty (20) tons. Each bin has a maximum throughput of 8.0 tons of expanded perlite per hour. Each bin is equipped with a baghouse. Material is pneumatically conveyed to and from these bins.

(3) Truck unloading and product bagging, with a maximum throughput of 8.0 tons of expanded perlite per hour and 8.0 tons of perlite ore per hour.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) Operating Permit No. 54-02-89-0123, issued on April 9, 1985;

(b) Operating Permit No.: 54-02-93-0143, issued on October 11, 1989.

All conditions from previous approvals were incorporated into this permit.

Air Pollution Control Justification as an Integral Part of the Process

The company has submitted the following justification such that the cyclone identified as cyclone No. 1 and the baghouses identified as No. 1, No. 2, No. 3, and the Aux/Agg baghouse be considered as an integral part of the perlite expansion process:

(a) The control equipment serves a primary purpose other than pollution control (e.g., the material collected is the primary product).

In this process, a suction fan draws the expanded perlite particles out of the perlite expansion furnaces and transports them pneumatically to a cyclone classifier system to be collected. The cyclone classifier serves as a product separator. The cyclone classifier collects the larger pieces of expanded perlite and discharges the smaller pieces of expanded perlite to the baghouses for collection. The baghouses serve as product collection devices and the material collected in the baghouses is sold. The cyclone and baghouses serve primarily as material recovery systems and only incidentally have air pollution control benefits. Both the smaller and larger pieces of perlite are valuable products with varied industrial applications. The storage bins for the finished product, expanded perlite, are also controlled by a baghouse.

IDEM, OAQ has evaluated the justifications and agreed that the cyclone and baghouses will be considered as an integral part of the perlite expansion process because the cyclone serves as a product separator and the baghouses serve as product collectors. Also, the cyclone and baghouses will be considered as an integral part of the perlite expansion process because the cyclone serves as a pneumatic conveyance device. Therefore, the permitting level will be determined using the potential to emit after the cyclone and baghouses. Operating conditions in the proposed registration will specify that this cyclone and baghouses shall operate at all times when the perlite expansion process is in operation.

Enforcement Issue

(a) IDEM is aware that equipment has been operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled “Unpermitted Emission Units and Pollution Control Equipment”.

(b) IDEM is reviewing this matter and will take appropriate action. This proposed registration is intended to satisfy the requirements of the construction permit rules.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (^{o}F)
S1	Furance #1 and #2	45	2' x 3.5'	35,000	<200
S2	Furnace #4	20	1.33'	5,000	<200
S3	Furnace #3	10	1' x 1.166'	6,500	<200

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 15, 2005.

Emission Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct. These calculations are provided in Appendix A of this document (Appendix A, pages 1 through 4).

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/year)
PM	13.8
PM10	13.8
SO_2	0.05
VOC	0.48
CO	7.36
NO_x	8.76
Total HAP	0.17

(a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all pollutants are less than 25 tons per year and the potential to emit PM and PM10 is greater than 5 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.

(b) Fugitive Emissions
Since this type of operation is not in 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 applicablility.

County Attainment Status

The source is located in Montgomery County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO_2	Attainment
NO_2	Attainment
8-Hour Ozone	Attainment
1-Hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Montgomery 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 PM 2.5 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.

(b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) emissions 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Montgomery County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD) (326 IAC 2-2).

(c) Montgomery 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, Part 70, or FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	13.8
PM10	13.8
SO_2	0.05
VOC	0.48
CO	7.36
NO_x	8.76
Single HAPs	0.16
Combination HAPs	0.17

(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 it is not in one of the 28 listed source categories.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this registration No. 107-21790-00012, is still 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 status is based on all the air approvals issued to the source and the emission calculations provided in Appendix A of this document.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) included in this registration for this source.

(b) This source is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.670, Subpart OOO), because the definition of a Nonmetallic Mineral Processing Facility states that the processing of nonmetallic minerals must include crushing or grinding. Plants that do not employ crushing or grinding, by definition, are not considered nonmetallic mineral processing plants and thus are not subject to Subpart OOO. Therefore, since this source only expands perlite ore, NSPS Subpart OOO is not applicable.

(c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this registration for this source.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The source was constructed in 1971. The source has been a PSD minor source from the promulgation of the PSD rules. The expansion furnaces have always been operated with a cyclone and baghouse as these are integral to the process; therefore, particulate emissions have always been below 250 tons per year.

326 IAC 2-6 (Emission Reporting)

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

326 IAC 5-1 (Opacity Limitations)

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

Perlite Expansion Furnaces

326 IAC 6-3-2 (Particulate)

Pursuant to 326 IAC 6-3-2, the allowable particulate emissions from each of the expansion furnaces shall not exceed the pounds per hour emission rates shown in the following table:

Stack	Process Weight (Pounds/Hour)	PM Emission Rate (lbs/hour)
Furnace #1	3,000	5.38
Furnace #2	3,000	5.38
Furnace #3	1,000	2.58
Auxiliary Furnace #4	1,000	2.58

The pounds per hour limitation was calculated with the following equation:

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

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

Miscellaneous Material Handling Activities

326 IAC 6-3-2 (Particulate)

Pursuant to 326 IAC 6-3-2, the particulate emissions from the miscellaneous material handling activities (truck unloading, product bagging, and storage bins) shall not exceed 16.5 pounds per hour when operating at a process rate of 16,000 pounds per hour.

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:

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

Conclusion

The operation of this perlite expansion plant shall be subject to the conditions of the Registration No.: 0107-21790-00012.

Appendix A: Emission Calculations
PM/PM Emissions
from the Perlite Expansion Furnaces

Company Name: **Dicaperl Minerals Corporation**
Address: **2510 North Concord Rd., Crawfordsville, IN. 47933**
Registration: **107-21790-00012**
Reviewer: **ERG/HJ**
Date: **October 6, 2005**

Emission Unit	Maximum Capacity (tons/hr)	Emission Factor (lbs/ton perlite expanded)*	PTE of PM/PM10 (tons/yr)
Furnace ID F1	1.5	0.29	1.91
Furnace ID F2	1.5	0.29	1.91
Furnace ID F3	0.5	0.29	0.64
Auxillary Furnace ID F4	0.5	0.29	0.64
Total PM/PM10			**5.08**

Methodology

PTE (tons/yr) = Maximum Capacity (tons/hr) x emission factor (lbs/ton perlite expanded) x 1 ton/2000 lb x 8760 hrs/yr

Notes

* Emission factor is from AP-42, Chapter 11.30, Table 11.30-1: Perlite Processing (1/95)

Appendix A: Emission Calculations
PM/PM Emissions
from Misc. Material Handling Activities

Company Name: **Dicaperl Minerals Corporation**
Address: **2510 North Concord Rd., Crawfordsville, IN. 47933**
Registration: **107-21790-00012**
Reviewer: **ERG/HJ**
Date: **October 6, 2005**

Emission Unit	Maximum Capacity (tons/hr)	Emission Factor (lbs/ton perlite expanded)*	PTE of PM/PM10 (tons/yr)
Misc. Material Handling (storage bins, truck loading, and bagging and shipping)	4.0	0.46	8.06

Methodology

PTE (tons/yr) = perlite expansion rate (tons/hr) x emission factor (lb/ton perlite expanded) x (1 ton/2000 lb) x 8760 hrs/yr

Notes

* Emission factors are from AP-42, Chapter 11.30, Background Document, Table 4.1: Summary of Test Data for Perlite Processing.

** The PM/PM10 emission factor is for misc. plant operations. These are the most specific published emission factor for misc. material handling at a perlite processing plant.

*** The PTE based on the baghouse design cannot be quantified exclusively for the misc.material handling processes because the perlite expansion furnaces vent to the same baghouse (baghouse No. 1) as the controlled misc. material handling units.

Appendix A: Emission Calculations
Emissions
From Natural Gas Combustion Units

Company Name: **Dicaperl Minerals Corporation**
Address: **2510 North Concord Rd., Crawfordsville, IN. 47933**
Registration: **107-21790-00012**
Reviewer: **ERG/HJ**
Date: **October 6, 2005**

There are four furnaces in total. Two of the furnaces are rated at 6.0 MMBtu/hr. Two of the furnaces are rated at 4.0 MMBtu/hr.

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
20.00	175.20

	Pollutant					
	PM*	PM10*	SO_2	NOx	VOC	CO
Emission Factor in lbs/MMCF	1.90	7.60	0.60	100 **see below	5.50	84.0
Potential Emission in tons/yr	0.17	0.67	0.05	8.76	0.48	7.36

*PM emission factor is filterable particulate only. PM10 emission factor is filterable and condensable particulate combined.
**Emission Factor for NOx: Uncontrolled = 100 lb/MMCF

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lbs/MMcf	0.00210	0.00120	0.07500	1.80000	0.00340
Potential Emission in tons/yr	**1.84E-04**	**1.05E-04**	**6.57E-03**	**0.16**	**2.98E-04**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	
Emission Factor in lbs/MMcf	0.0005	0.0011	0.0014	0.0004	0.0021	**Total**
Potential Emission in tons/yr	**4.38E-05**	**9.64E-05**	**1.23E-04**	**3.33E-05**	**1.84E-04**	**0.17**

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (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

Methodology
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
PTE (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emission Calculations
PTE Summary

Company Name: Dicaperl Minerals Corporation
Address: 2510 North Concord Rd., Crawfordsville, IN. 47933
Registration: 107-21790-00012
Reviewer: ERG/HJ
Date: October 6, 2005

Pollutant	Expansion Furnaces	Natural Gas Combustion	Material Handling	Total (tpy)
CO	0.00	7.36	0.00	**7.36**
NO_x	0.00	8.76	0.00	**8.76**
PM	5.08	0.17	8.06	**13.3**
PM_{10}	5.08	0.67	8.06	**13.8**
SO_2	0.00	0.05	0.00	**0.05**
VOC	0.00	0.48	0.00	**0.48**
Pb	0.00	4.38E-05	0.00	**4.38E-05**
Total HAP	0.00	0.17	0.00	**0.17**