



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: April 13, 2005
RE: SDI-Iron Dynamics, Inc. / 033-19160-00076
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require 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
FNPER.dot 1/10/05



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

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Barry Smith
Iron Dynamics, Inc.
4500 County Road 59
Butler, IN 46721

April 13, 2005

Re: **033-19160-00076**
Permit Modification to PSD 033-12992-00076

Dear Mr. Smith:

On May 16, 2002, Iron Dynamics, Inc. (IDI) was issued a Prevention of Significant Deterioration permit (PSD 033-12992-00076) for the construction and operation of two (2) dryers. This PSD permit specified the particulate emission limitations for the baghouses controlling the dryers.

On May 11, 2004, the Office of Air Quality (OAQ) received a permit modification request to revise the PSD particulate limits for these dryers based on the stack tests conducted by IDI on February 19, and 20, 2004.

Based on the information submitted by IDI and pursuant to IC13-15-7-1, PSD permit 033-12992-00076 has been modified as indicated in the technical support document. All other conditions of PSD permit 033-12992-00076, its amendments and modifications shall remain unchanged and in effect. This permit decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

Please attach a copy of this letter and the following revised permit pages to the front of the original permit.



If you have any questions regarding this permit modification please contact Ms. Iryn Calilung of my staff at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015 or by telephone at (317) 233-5692 or toll free at 1-800-451-6027 extension 3-5692 or by e-mail at icalilun@dem.state.in.us.

Sincerely,

Original signed by
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

cc: File – Dekalb County
Dekalb County Health Department
Air Compliance Section Inspector – RTS
Compliance Data Section - KA
Technical Support and Modeling - MB
Part 70 Operating Permit File – 033-12614-00076
Part 70 Operating Permit Reviewer – GM



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**PERMIT MODIFICATION OF
 PART 70 SIGNIFICANT SOURCE MODIFICATION
 AND MAJOR MODIFICATION
 UNDER PREVENTION OF SIGNIFICANT DETERIORATION
 OFFICE OF AIR QUALITY**

**Iron Dynamics, Inc.
 4500 County Road 59,
 Butler, Indiana 46721**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This permit is issued under the provisions of 326 IAC 2-2, with conditions listed on the attached pages.

This approval is also issued in accordance with 40 CFR 70 Appendix A and Contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et.seq. (Clean Air Act as amended by the 1990 Clean Air Act amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Significant Source Modification No.: 033-12992-00076	
Original Issued and Signed by Paul Dubenetzky, Branch Chief, Office of Air Quality	Issuance Date: May 15, 2002

Permit Modification No.: 033-19160-00076	Conditions Affected: Cover Page, B.2, D.1.1, and D.1.11
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: April 13, 2005



SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a Direct Reduced Iron facility.

Responsible Official:	Mark Millett
Source Address:	4500 County Road 59, Butler, Indiana 46721
Mailing Address:	4500 County Road 59, Butler, Indiana 46721
General Source Phone Number:	260-868-8000
SIC Code:	3312
County Location:	DeKalb
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This modification to a stationary source is approved to construct and operate the following emission unit and pollution control device:

- (a) One (1) coal dryer identified as 75 with nominal capacity of 25 MMBtu/hour and 60 tons per hour of coal, exhausting to stack (identified as S-75), equipped with a baghouse (B-75).
- (b) One (1) ore dryer identified as 76 with nominal capacity of 27 MMBtu/hour and 115 tons per hour of ore, exhausting to stack (identified as S-76), equipped with a baghouse (B-76).

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This modification to a stationary source does not involve any insignificant activities, as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit modification approval becomes effective upon its issuance.

B.3 Permit Expiration Date [326 IAC 2-2-8(a)(1)]

Pursuant to 326 IAC 2-2-8(a)(1) (PSD Requirements: Source Obligation) this permit to construct shall expire if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is discontinued for a continuous period of eighteen (18) months or more, or if construction is not completed within reasonable time. IDEM may extend the eighteen (18) month period upon satisfactory showing that an extension is justified.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as indicated in the permit. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emissions units differs from the construction proposed in the application or the permit, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.
- (c) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (d) The changes covered by the Significant Source Modification will be incorporated in the Part 70 Operating Permit for this Source.

B.5 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.7, Part 60.8, the Source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) One (1) coal dryer identified as 75 with nominal capacity of 25 MMBtu/hour and 60 tons per hour of coal, exhausting to stack (identified as S-75), equipped with a baghouse (B-75).
- (b) One (1) ore dryer identified as 76 with nominal capacity of 27 MMBtu/hour and 115 tons per hour of ore, exhausting to stack (identified as S-76), equipped with a baghouse (B-76).

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Particulate Matter (PM/PM-10) - Best Available Control Technology [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3, the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from:

Coal Dryer:

- (a) The Coal Dryer baghouse B -75 shall not exceed a PM/PM₁₀ emission rate of 0.01 grains per dry standard cubic feet through stack 75.
- (b) The PM/PM₁₀ emissions from the Coal Dryer stack 75 shall not exceed 0.5 pounds per hour.

Ore Dryer:

- (c) The Ore Dryer baghouse B -76 shall not exceed a PM/PM₁₀ emission rate of 0.01 grains per dry standard cubic feet through stack 76.
- (d) The PM/PM₁₀ emissions from the Ore Dryer stack 76 shall not exceed 1.1 pounds per hour.

These PSD BACT limits supersede the PSD BACT limits specified in Condition D.1.1 of PSD permit 033-12992-00076, issued on May 16, 2002.

Compliance Determination Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11] [40 CFR 60 Subpart Y]

In order to demonstrate compliance with conditions D.1.1, D.1.3 and D.1.4, the Permittee **has performed** PM and PM₁₀ testing utilizing [40 CFR Part 60, Appendix A, Method 5, Method 201 or 201A, Method 202](#) or methods as approved by the Commissioner. Testing **has been** conducted in accordance with Section C- Performance Testing and as specified in 40 CFR 60.254.

Pursuant to 326 IAC 2-1.1-11, this filterable and condensable PM/PM₁₀ test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C- Performance Testing and as specified in 40 CFR 60.254.

The PM₁₀ includes both filterable and condensable components.

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

Technical Support Document (TSD)
Permit Modification to a Prevention of Significant Deterioration (PSD) Permit

Source Background and Description

Source Name:	Iron Dynamics, Inc. (IDI)
Source Location:	4500 County Road 59, Butler, Indiana 46721
Mailing Address:	4500 County Road 59, Butler, Indiana 46721
County:	Dekalb
SIC Code:	3312 (Steel Mill)
NAICS Code:	331211
Source Categories:	1 of 28 Listed Source Categories Major PSD Source
Permit Number:	033-19160-00076
Permit Writer:	Iryn Calilung 317/233-5692 icalilun@dem.state.in.us

Description of the Proposed Modification

On May 16, 2002, Iron Dynamics, Inc. (IDI) was issued a Prevention of Significant Deterioration (PSD) permit (033-12992-00076) for the construction and operation of a coal dryer and an ore dryer, each equipped with a baghouse for particulate control. Condition D.1.1 specified the PM/PM₁₀ PSD Best Available Control Technology (BACT) limits for these dryers. Condition D.1.1, as currently written in the PSD permit is shown below:

- D.1.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]
Pursuant to 326 IAC 2-2-3, the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from the Coal Dryer and Ore Dryer baghouses B-75 and B-76 shall not exceed a PM/PM₁₀ emission rate of 0.0052 grains per dscf through stacks 75 and 76 each.

The PM/PM₁₀ shall not exceed 1.11 lb per hour and 1.56 lb per hour from Coal Dryer and Ore Dryer stacks 75 and 76, respectively.

If the stack test required under Condition D.1.11 shows that these PM/PM₁₀ limits are not achievable in practice for the dryers, the Department may revise the permit to adjust these PM/PM₁₀ limitations. The Department may, at its discretion, use the authority under IC 13-15-7-2 to re-open and revise the limit to more closely reflect the actual stack test results. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.

On May 11, 2004, IDI submitted a permit modification application requesting to revise the PM/PM₁₀ BACT limits for the coal dryer and ore dryer. This request is based on the tests conducted by IDI on February 19 and 20, 2004. Summary reports of these tests are attached to this technical supporting document. IDI requested that the Condition D.1.1 of PSD Permit 033-12992-00076 be modified to reflect the test results. There is no new construction involved in this permit modification application.

Emissions Calculations and PSD Applicability

The table below summarizes the existing limits, proposed limits and stack test results:

Table 1 - - - Ore and Coal Dryers						
	Existing		Proposed		Stack Test Results	
Permit No.	033-12992-00076 May 16, 2002		033-19160-00076 (pending)		February 2004	
Coal Dryer	25	MMBtu/hour	25	MMBtu/hour	9.01	MMBtu/hour
	0.0052	grains/dscf	0.01	grains/dscf	0.0075	grains/dscf
	1.11	lbs/hour	0.5	lbs/hour	0.36	lbs/hour
	4.9	tons/year	2.19	tons/year	Out of compliance with the permitted limits at 36% of maximum permitted capacity.	
	25,000	dscf/min	5,800	dscf/min		
	Stack ID 75		Stack ID 75			
Ore Dryer	27	MMBtu/hour	27	MMBtu/hour	15	MMBtu/hour
	0.0052	grains/dscf	0.01	grains/dscf	0.0099	grains/dscf
	1.56	lbs/hour	1.1	lbs/hour	1.03	lbs/hour
	6.8	tons/year	4.8	tons/year	Out of compliance with the permitted grain loading at 55% of maximum permitted capacity.	
	35,000	dscf/min	12,800	dscf/min		
	Stack ID 76		Stack ID 76			
PM/PM ₁₀ PTE	11.71	tons/year (total)	6.99	tons/year (total)		
Control	Baghouses		Baghouses			

- (1) PTE After Control in lbs/hour

$$PM/PM_{10} = (\text{grains/dscf}) * (\text{flow rate dscfm}) * (1 \text{ lb}/7000 \text{ grains}) * (60 \text{ min}/1 \text{ hour})$$
- (2) PTE After Control in tons/year

$$PM/PM_{10} = (PM/PM_{10} \text{ lbs/hour}) * (8760 \text{ hours/year}) * (1 \text{ ton}/2000 \text{ lbs})$$
- (3) Even though the total PM/PM₁₀ potential to emit after control under the existing conditions were less than the PSD Significant levels, the dryers were reviewed under 326 IAC 2-2 (PSD) because they were considered part of the Rotary Hearth Furnace project, which was permitted under the PSD program (326 IAC 2-2).
- (4) As indicated in Condition D.1.1 of PSD permit 033-12992-00076, IDEM may revise the permit to adjust the PM/PM₁₀ limitations. IDEM uses the authority under IC 13-15-7-2 to re-open and revise the limits to closely reflect the actual stack test results.
- (5) Since the PM/PM₁₀ limits were established under PSD 326 IAC 2-2, the reopening of the permit to revise the limits will also undergo major PSD review under 326 IAC 2-2. However, the PSD major review is limited to the PM/PM₁₀ revision only.

PM/PM₁₀ PSD BACT Determination

As discussed in the initial permitting review of these coal and ore dryers, the majority of the dryers listed in the EPA RACT/BACT/LAER (RBL) Clearinghouse database do not refer to similar operations as Iron Dynamics, Inc. (IDI)

For this re-evaluation of the PM/PM₁₀ BACT, the following sources listed in the RBL were used for comparison because the PM/PM₁₀ PSD BACT limits for these dryers were expressed in the same units for IDI.

Limits are arranged in ascending order.

Table 2 - - - PM/PM ₁₀ PSD BACT Limits in the RBL			
Company Name	Emission Unit	PSD BACT Limit (grains/dscf)	Pollution Control
IDI, IN <i>(existing)</i>	Coal dryer	0.0052	Baghouse
IDI, IN <i>(existing)</i>	Ore dryer	0.0052	Baghouse
Cargill, IA	Meal dryer 1	0.006	Cyclones
Encoal Corp, WY	Dryer	0.01	Scrubber
Cargill, IA	Meal dryer 2	0.01	Scrubber
GCC Dacotah, SD	Coal dryer	0.01	Baghouse
IDI, IN <i>(proposed)</i>	Coal dryer	0.01	Baghouse
IDI, IN <i>(proposed)</i>	Ore dryer	0.01	Baghouse
Bungee Corp, IA	Grain dryer	0.013	Settling chamber
Nucor Steel, UT	Fertilizer dryer	0.016	Fabric filter
Tarmac America, FL	Blast furnace slag dryer	0.02	Baghouse
Consolidated Penn, PA	Thermal coal dryer 2	0.02	Scrubber
Consolidated Penn, PA	Thermal coal dryer 1	0.031	Scrubber

Further evaluation of these sources resulted in only two (2) sources with coal dryers.

Table 3 - - - PM/PM ₁₀ PSD BACT Limits for Coal Dryers in the RBL			
Company Name	Emission Unit	PSD BACT Limit (grains/dscf)	Pollution Control
IDI, IN <i>(existing)</i>	Coal dryer	0.0052	Baghouse
GCC Dacotah, SD	Coal dryer	0.01	Baghouse
IDI, IN <i>(proposed)</i>	Coal dryer	0.01	Baghouse
Consolidated Penn, PA	Thermal coal dryer 2	0.02	Scrubber
	Thermal coal dryer 1	0.031	Scrubber

There are no other sources listed in the RBLC Clearinghouse with ore dryers.

Table 4 - - - PM/PM ₁₀ PSD BACT Limits for Ore Dryers in the RBLC			
Company Name	Emission Unit	PSD BACT Limit (grains/dscf)	Pollution Control
IDI, IN (existing)	Ore dryer	0.0052	Baghouse
IDI, IN (proposed)	Ore dryer	0.01	Baghouse

The proposed particulate emission limits for the coal dryer and ore dryer are comparable to the other PSD BACT limits for dryers listed in the RBLC.

Based on the information provided above, the PM₁₀ BACT standards and mass limitations for the dryers are as follows:

(1) Coal Dryer

- (a) The filterable and condensible PM₁₀ BACT for the Coal Dryer is the continued use of a baghouse with a limit of 0.01 grains per dry standard cubic feet.

The filterable and condensible PM₁₀ emissions shall not exceed 0.5 pounds per hour.

These PSD BACT limits supersede the PSD BACT limit specified in Condition D.1.1 of PSD permit 033-12992-00076, issued on May 16, 2002.

This PSD BACT specification of the baghouse is more stringent than the emission limit specified in 40 CFR Part 60, Subpart Y for the Coal Dryer.

- (b) The visible emissions from the Coal Dryer baghouse stack shall not exceed 3%.

This PSD BACT limit is the same PSD BACT limit specified in Condition D.1.3 of PSD permit 033-12992-00076, issued on May 16, 2002.

This PSD BACT opacity limit is more stringent than the opacity limit specified in 40 CFR Part 60, Subpart Y for the Coal Dryer.

Table 5 - - - PSD vs. NSPS		
Pollutant	PSD BACT Limit (326 IAC 2-2)	40 CFR Part 60, Subpart Y
PM	0.01 gr/dscf	0.031 gr/dscf
Opacity	3%	20%

(2) Ore Dryer

- (a) The filterable and condensible PM₁₀ BACT for the Ore Dryer is the continued use of a baghouse with a limit of 0.01 grains per dry standard cubic feet .

The filterable and condensible PM₁₀ emissions shall not exceed 1.1 pounds per hour.

These PSD BACT limits supersede the PSD BACT limits specified in Condition D.1.1 of PSD permit 033-12992-00076, issued on May 16, 2002.

- (b) The visible emissions from the Ore Dryer baghouse stack shall not exceed 3%.

This PSD BACT opacity limit is the same PSD BACT limit specified in Condition D.1.3 of PSD permit 033-12992-00076, issued on May 16, 2002.

Additional PSD Evaluation

(1) County Status

Iron Dynamics, Inc. (IDI) is located in Dekalb County.

Table 6 - - - Dekalb County	
Pollutant	Status
PM ₁₀	Attainment
SO ₂	Attainment
NO ₂	Attainment
1-hour Ozone	Attainment
1-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

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

(b) Criteria Pollutants
 Dekalb County has been classified as attainment or unclassifiable for all the other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(2) Site Specific Characteristics

See Appendix A of this TSD for the detailed air quality analysis.

(a) Land Use Classification
 IDI is located in Butler, IN, which is classified as rural. This classification was based on US EPA Auer (1978) land-use typing methodology. Rural dispersion coefficients were used in the modeling analyses.

(b) Topography
 The topography of the mill site is essentially flat lands.

(c) Wind Flow Pattern
 The prevailing wind directions are from west to southwest. Measurements of surface wind flow are from the National Weather Service (NWS) station in Fort Wayne, IN.

(d) Air Quality Status
 IDI is located in Dekalb County, which is considered attainment for all criteria pollutants.

- (e) **Air Quality Impact on Vegetation**
There will be no significant adverse impact on the vegetation around the area because the predicted concentrations of the emissions are below the national air quality standards.
- (f) **Air Quality Impact on Soil**
No significant adverse impact on the soil around the area is anticipated, because the concentrations are below the national air quality standards.
- (g) **Air Quality Impact on Visibility**
 - (i) The State of Indiana has no Class I and III areas.
 - (ii) The closest Class I area is the Mammoth Cave National Park, Edmonson County, KY.

IDI will not adversely impact the visibility at a Class I area because IDI is not located within 200 kilometers radius of the closest Class 1 area.
 - (iii) IDI is not subject to additional requirements impacting Class I area because it does not impact a Class I area. Additional modeling required for sources affecting Class I area is not is not required.
- (h) **Construction Impact**
Since the proposed modification does not involve any new emission unit, this permit is not expected to cause significant impact.

(3) **Endangered Species**

The Clean Air Act (CAA) does not contain or express requirement for the applicant or the permitting agency to analyze or consider the impact of hazardous air pollutants on endangered species when applying for or making a decision on a PSD permit. The CAA only requires impacts to endangered species be considered when the US EPA modifies the HAPs list or promulgates a NESHAP. (42 USC 7412). In addition, Indiana's state rules do not require the performance of studies or analyses to determine the effect of toxic emissions from a source on federal or state-listed endangered species in the PSD permitting process. Endangered species are protected under state and federal laws, which prohibit the unlawful taking of an endangered species. IC 14-22-34 and 16 USC 701 et. seq.

The OAQ is not aware of any federally-listed endangered species within the vicinity of this source.

Based on the location of the mill and air quality analysis conducted, the impact of the modification would not affect habitats of endangered species. Therefore, emissions from this source will not adversely affect any federally-listed endangered species or any state-listed endangered species.

Below is a listing of endangered, threatened, or rare species in Indiana used in this review.

Table 7 - - - Endangered, Threatened or Rare Species in Indiana			
Common Name	Type	County	Town Name in Indiana
White Cat's Paw Pearlymussel	Mollusk	Allen	Fort Wayne, Cedarville, Woodburn, Grabill
		Kosciusko	Burket, Leesburg
Eastern Fanshell Pearlymussel	Mollusk	Wabash	Lagro, Wabash
Clubshell	Mollusk	Allen	Fort Wayne, Woodburn, Grabill, Cedarville
		Kosciusko	South Whitley, Mentone, Burket , Leesburg
		Huntington	Mount Etna
		Wabash	North Manchester
Northern Riffleshell	Mollusk	Allen	Fort Wayne, Grabill, Cedarville
		Kosciusko	Mentone, Burket , Leesburg, North Webster
Peregrine Falcon	Bird	Allen	Fort Wayne
		Kosciusko	North Webster
Indiana Bat Or Social Myotis	Mammal	Kosciusko	Warsaw
		Huntington	Mount Etna
		Wabash	Roann
Prairie White-Fringed Orchid	Plant	Noble	Merriam, Kendallville

Proposed Permit Changes

- (1) The existing PSD permit 033-12992-00076 for Iron Dynamics Inc. (IDI) is revised pursuant to IC13-15-7-1 and 326 IAC 2-2.

New requirements are in **bold** fonts and deleted items are in ~~strikeout~~ fonts.

- (2) Condition D.1.1 is revised as follows:

D.1.1 Particulate Matter (PM/PM₁₀) - Best Available Control Technology [326 IAC 2-2-3]
 Pursuant to 326 IAC 2-2-3, the PM/PM₁₀ (where PM₁₀ includes both filterable and condensable components) emissions from:

Coal Dryer:

- (a) The Coal Dryer ~~and Ore Dryer~~ baghouses B-75 ~~and B-76~~ shall not exceed a PM/PM₁₀ emission rate of ~~0.0052~~ **0.01** grains per ~~cusec~~ **dry standard cubic feet** through stacks 75 ~~and 76~~ each.

- (b) **The PM/PM₁₀ emissions from the Coal Dryer stack 75 shall not exceed 0.5 pounds per hour.**

Ore Dryer:

- (c) ~~Coal Dryer and~~ The Ore Dryer baghouses B-75 ~~and B-76~~ shall not exceed a PM/PM₁₀ emission rate of ~~0.0052~~ **0.01** grains per ~~cusec~~ **dry standard cubic feet** through stacks 75 ~~and 76~~ each.

(d) The PM/PM₁₀ emissions from the Ore Dryer stack 76 shall not 1.1 pounds per hour.

~~The PM/PM₁₀ shall not exceed 1.11 lb per hour and 1.56 lb per hour from Coal Dryer and Ore Dryer stacks 75 and 76, respectively.~~

These PSD BACT limits supersede the PSD BACT limits specified in Condition D.1.1 of PSD permit 033-12992-00076, issued on May 16, 2002.

~~If the stack test required under Condition D.1.11 shows that these PM/PM₁₀ limits are not achievable in practice for the dryers, the Department may revise the permit to adjust these PM/PM₁₀ limitations. The Department may, at its discretion, use the authority under IC 13-15-7-2 to re-open and revise the limit to more closely reflect the actual stack test results. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.~~

- (3) Since the performance tests for PM and PM₁₀ have already been conducted, Condition D.1.11 has been revised as follows:

D.1.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11] [40 CFR 60 Subpart Y] ~~Within 60 days of achieving maximum production rate, but no later than 18 months after issuance of this permit, for the dryers,~~ In order to demonstrate compliance with conditions D.1.1, D.1.3 and D.1.4, the Permittee ~~shall~~ **has performed** PM and PM-10 testing utilizing methods as approved by the Commissioner. **Testing has been conducted in accordance with Section C- Performance Testing and as specified in 40 CFR 60.254.**

Pursuant to 326 IAC 2-1.1-11, this filterable and condensible PM/PM₁₀ test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C- Performance Testing and as specified in 40 CFR 60.254.

The PM-10 includes both filterable and condensable components.

- (4) The effective date of the permit, specified in Condition B.2, has been revised because:

(a) US EPA has granted conditional approval to the PSD State Implementation Plan (SIP) of Indiana under provisions of 40 CFR 51.166 and 40 CFR 52.770 and superceding the delegated PSD SIP authority under 40 CFR 52.793. The effective date for these provisions is April 2, 2003. Therefore, the PSD permits will be issued under the authority of 326 IAC 2-2 and will no longer be issued under the provision of 40 CFR 52.21 and 40 CFR 124.

(b) Under PSD SIP approved program:

- The permit becomes effective upon its issuance. [IC 13-15-5-3]
- Petitions of appeals are directed to the Office of Environmental Adjudication (OEA).
- There is no automatic stay if the permit is appealed.

B.2 Effective Date of the Permit [IC 13-15-5-3]

~~Pursuant to 40 CFR Parts 124.15, 124.19 and 124.20, if public comments are received on the draft permit during the public comment period, the effective date of this permit will be thirty-three (33) days from its issuance. If no public comments are received, the effective date of this permit will be the date of issuance of the permit.~~

Pursuant to IC 13-15-5-3, this permit modification approval becomes effective upon its issuance.

- (5) The following federal citations referenced in the permit have also been removed from the permit:
- 40 CFR Part 52.21 (Prevention of Significant Deterioration) and
 - 40 CFR 124 (Procedure for Decision Making)

Recommendation and Conclusion

- (1) Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.
- An application for the purposes of this review was received on May 11, 2004. Additional information was received on August 19, 2004 and October 25, 2004.
- (2) Based on the facts, conditions and evaluations made, the OAQ staff recommends to the IDEM Commissioner that the PSD Permit Modification [033-19160-00076](#) be approved.
- (3) A copy of the preliminary findings is also available on the Internet at: www.IN.gov/idem/air/permits/Air-Permits-Online.
- (4) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.IN.gov/idem/guides.

IDEM Contact

Questions regarding this proposed approval can be directed to Iryn Calilung at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015 or by telephone at (317) 233-5692 or toll free at 1-800-451-6027 extension 3-5692 or by e-mail at icalilun@dem.state.in.us.

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

Addendum to the Technical Support Document (TSD)
Permit Modification to a
Prevention of Significant Deterioration (PSD) Permit

Source Background and Description
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Source Name:	Iron Dynamics, Inc. (IDI)
Source Location:	4500 County Road 59, Butler, Indiana 46721
Mailing Address:	4500 County Road 59, Butler, Indiana 46721
County:	Dekalb
SIC Code:	3312 (Steel Mill)
NAICS Code:	331211
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Minor Source, Section 112 of the Clean Air Act
Permit Number:	033-19160-00076
Permit Writer:	Iryn Calilung 317/233-5692

Public Notification and Participation
--

On February 23, 2005, the Office of Air Quality (OAQ) had a notice published in the Auburn Evening Star, stating that Iron Dynamics, Inc. (IDI) had applied for an air approval to revise the PM/PM₁₀ BACT limits for their coal dyer and ore dryer.

The public comment period ended on March 25, 2005.

The Indiana Department of Environmental Management (IDEM) does not amend the Technical Support Document (TSD) and Appendices of the draft permit. They are maintained to document the original review. This addendum to the TSD indicates the comments, responses, and revisions made from the time the permit was drafted until a final decision is made.

On February 28, 2005, Iron Dynamics, Inc. (IDI) submitted comments. The comments are re-stated in the following pages with the IDEM responses. In addition to these comments, the Environmental Protection Agency (EPA) Region 5 also submitted comments. These comments are also re-stated in the following pages with the IDEM responses.

Changes made to the draft permit are shown in ~~strikeout~~ or **bold** fonts to show the differences.

IDI's Comments and IDEM's Responses
--

IDI's Comment No. 1: Section A.1 - - General Information
The reference to "Major Source, Section 112 of the Clean Air Act" should be removed since IDI is not a major source for HAPs. The TSD correctly identifies IDI as a minor source, but the permit and modeling section lists IDI as major for HAPs.

IDEM's Response: IDEM agrees with the change.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]
The Permittee owns and operates a Direct Reduced Iron facility.
Responsible Official: Mark Millett
Source Address: 4500 County Road 59, Butler, Indiana 46721
Mailing Address: 4500 County Road 59, Butler, Indiana 46721
General Source Phone Number: 260-868-8000
SIC Code: 3312
County Location: DeKalb
Source Location Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source, under PSD Rules;
~~Major~~ **Minor** Source, Section 112 of the Clean Air Act

IDI's Comment No. 2: Section A.2 and D.1 Description Box
To help clarify that "nominal" applies to both the MMBtu/hour and tons/hour throughput, the word "processes" in (a) and (b) should be deleted.

IDEM's Response: IDEM agrees with the changes.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]
This modification to a stationary source is approved to construct and operate the following emission unit and pollution control device:

- (a) One (1) coal dryer identified as 75 with nominal capacity of 25 MMBtu/hour and ~~processes~~ 60 tons per hour of coal, exhausting to stack (identified as S-75), equipped with a baghouse (B-75).
- (b) One (1) ore dryer identified as 76 with nominal capacity of 27 MMBtu/hour and ~~processes~~ 115 tons per hour of ore, exhausting to stack (identified as S-76), equipped with a baghouse (B-76).

IDI's Comment No. 3: Section B - - Condition B.2
IDI asks that clarification be inserted to make it unambiguous that only the permit effectiveness language in Condition B.2 is updated and that none of the other Section B conditions on that page (e.g. NSPS reporting, affidavit of construction) are re-triggered.

IDEM's Response: IDEM agrees that this permit (033-19160-00076) does not re-trigger the requirement to submit an affidavit of construction or submit NSPS reporting. The technical support document for this review has already indicated which specific conditions of the existing permit (033-12992-00076) have been revised by this permit modification.

It is correct that Condition B.2 is the only condition written on page 5 of 21 of PSD Permit 033-12992-00076 that has been revised. It is not necessary to add any clarification in the permit modification 033-19160-00076 because these 2 approvals are not independent from each other.

IDI's Comment No. 4: Section D.1.1(d) - - PM/PM₁₀ Limits
Add the word "exceed" before "1.1 pounds per hour".

IDEM's Response: IDEM agrees with the change.

D.1.1(d) The PM/PM₁₀ emissions from the Ore Dryer stack 76 shall not **exceed** 1.1 pounds per hour.

IDI's Comment No. 5: Page 5 of 9 of the TSD
Under the County Status portion of the technical support document, 1(a) and 1(b) are incorrect in that they claim VOCs, NO_x and other criteria pollutants were reviewed pursuant to PSD in this permit action. Only PM₁₀ was reviewed under PSD in this permit.

IDEM's Response: The intent of the County Status portion of the technical support document is to include an explanation of the attainment status of the County (DeKalb County) where IDI is located and that regulated pollutants are reviewed under different major review programs, depending on the attainment or non attainment status of the area.

IDI's Comment No. 6: Pages 2 and 6 of Appendix A
Keramida Environmental should be listed as the consultant that prepared the application, not URS.

IDEM's Response: IDEM acknowledges the incorrect information indicated in Appendix A. Keramida Environmental is the consultant who prepared the application.

IDI's Comment No. 7: Page 5 of Appendix A
The word "not" should be inserted before "consume" in the last line on that page. This clarifies that the modification will not consume more than the allowable 80% increment as required by IDEM modeling standards.

IDEM's Response: IDEM agrees with the change.

Table 6 contains the results of the days when the total increment consumption was greater than 80% and shows that the modification will **not** consume more than 80% of the remaining increment.

EPA Region 5 Comments and IDEM's Responses

EPA's Comment No. 1: Condition D.1.11
The testing requirements to demonstrate compliance with a NSPS or BACT limit should be specified in the permit so that citizens may have a chance to review and comment.

IDEM's Response: Condition D.1.11 specifies that testing has to be conducted as specified in the federal regulations New Source Performance Standards (NSPS) 40 CFR 60.254. However, to clarify further, Condition D.1.11 has been revised to specifically indicate the test methods, instead of referencing the rule citation.

**D.1.11 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]
[40 CFR 60 Subpart Y]**
In order to demonstrate compliance with conditions D.1.1, D.1.3 and D.1.4, the Permittee has performed PM and PM₁₀ testing utilizing **40 CFR Part 60, Appendix A, Method 5, Method 201 or 201A, Method 202 or** methods as approved by the Commissioner. Testing has been conducted in accordance with Section C- Performance Testing and as specified in 40 CFR 60.254.

Pursuant to 326 IAC 2-1.1-11, this filterable and condensable PM/PM₁₀ test shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration, utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C- Performance Testing and as specified in 40 CFR 60.254.

The PM₁₀ includes both filterable and condensable components.

EPA's Comment No. 2: Page 2 of 9 of the TSD:
Please explain why the flow rates in Table 1 were decreased from 25,000 to 5,800 dscf/min and 35,000 to 12,800 dscf/min. Were these flow rates decreased so that compliance with the pounds per hour limitations could be met?

IDEM's Response: The new flow rates of the core and ore dryers baghouses were based on the actual operating parameters during the performance tests conducted by IDI. IDI admits that the original flow rate designs as permitted were overestimated, thus there are differences in the flow rate specifications.

There are no changes in the draft permit due to this comment.

Recommendation and Conclusion

- (1) Based on the facts, conditions and evaluations made, the OAQ staff recommends to the IDEM Commissioner that the PSD Permit Modification **033-19160-00076** be approved.
- (2) A copy of the preliminary findings is also available on the Internet at: www.IN.gov/idem/air/permits/Air-Permits-Online.
- (3) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.IN.gov/idem/guides.

IDEM Contact

Questions regarding this proposed approval can be directed to Iryn Calilung at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204 or by telephone at (317) 233-5692 or toll free at 1-800-451-6027 extension 3-5692.

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

Appendix A (Air Quality Analysis) of the Technical Support Document (TSD)
Permit Modification to a Prevention of Significant Deterioration (PSD) Permit

Source Background and Description

Source Name:	Iron Dynamics, Inc. (IDI)
Source Location:	4500 County Road 59, Butler, Indiana 46721
Mailing Address:	4500 County Road 59, Butler, Indiana 46721
County:	Dekalb
SIC Code:	3312 (Steel Mill)
NAICS Code:	331211
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Major source under Section 112 of the CAA
Permit Number:	033-19160-00076
Air Quality Modeler:	Jeffrey Stokes 317/233-2725 jstokes@dem.state.in.us

Introduction

Iron Dynamics, Inc. (IDI) has applied for a Prevention of Significant Deterioration (PSD) permit to modify a direct reduced iron facility near Butler in Dekalb County, Indiana. The site is located at Universal Transverse Mercator (UTM) coordinates 673929.0 East and 4581869.0 North. The modification is to change the PM₁₀ emission limits of the coal dryer and ore dryer of the direct reduced iron plant. Iron Dynamics have a separate stack for each of the coal dryer and ore dryer.

Dekalb County is designated as attainment for the National Ambient Air Quality Standards. These standards for Nitrogen Dioxide (NO₂), Sulfur Dioxide (SO₂), Carbon Monoxide (CO) and Particulate Matter less than 10 microns (PM₁₀) are set by the United States Environmental Protection Agency (U.S. EPA) to protect the public health and welfare.

URS prepared the PSD permit application for IDI. The permit application was received by the Office of Air Quality (OAQ) on May 11, 2004. This document provides the review of the PSD permit application including an air quality analysis performed by the OAQ.

Air Quality Analysis Objectives

The OAQ review of the air quality impact analysis portion of the permit application will accomplish the following objectives:

1. Establish which pollutants require an air quality analysis based on source emissions.
2. Determine the ambient air concentrations of the source's emissions and provide analysis of actual stack height with respect to Good Engineering Practice (GEP).
3. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or Prevention of Significant Deterioration (PSD) increment.
4. Perform a brief qualitative analysis of the source's impact on general growth, soils, vegetation, endangered species and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park which is 475 kilometers from the IDI site in Dekalb County, Indiana.

Summary

Iron Dynamics Inc. (IDI) has applied for a PSD construction permit to modify a direct reduced iron facility near Butler in Dekalb County, Indiana. The PSD application was prepared by URS of Rolling Meadows, IL. Dekalb County is currently designated as attainment for all criteria pollutants. Emission rates of one pollutant (Particulate Matter less than 10 microns (PM₁₀)) associated with the facility do not exceed significant emission rates established in state and federal law. Previous analysis had shown PM₁₀ impacts to be near the PSD increment and NAAQS and modeling was conducted to insure compliance. Refined modeling for PM₁₀ showed no violations of the NAAQS. Analysis for PSD increment consumption was necessary for PM₁₀. The 24-hour PM 10 increment was consumed. Further modeling determined the modification will not exceed more than 80% of the remaining increment.

There was no impact review conducted for the nearest Class I area, which is Mammoth Cave National Park in Kentucky. No Class I analysis is required if a source is located more than 100 kilometers (61 miles) from the nearest Class I area.

An additional impact analysis on the surrounding area was conducted and no significant impact on economic growth, soils, vegetation, federal and state endangered species or visibility from the Iron Dynamics was expected.

Pollutants Analyzed for Air Quality Impact

Indiana Administrative Code (326 IAC 2-2) PSD requirements apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a new major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1. PM₁₀ will be emitted from Iron Dynamics. An air quality analysis is required for PM₁₀, to insure the impacts from the proposed modification do not threaten the PSD increment and the NAAQS. Significant emission rates are listed in Table 1. It should be noted that all emissions are based on the Best Available Control Technology (BACT) determination and other limitations resulting from the OAQ review of the application.

Pollutant	Maximum Allowable Emissions	Significant Emission Rate
PM ₁₀	7.0	15.0

Significant emission rates are established to determine whether a source is required to conduct an air quality analysis. If a source exceeds the significant emission rate for a pollutant, air dispersion modeling is required for that specific pollutant. A modeling analysis for each pollutant is conducted to determine whether the source's modeled concentrations will exceed significant impact levels.

Modeled concentrations below significant impact levels do not require further air quality modeling. Modeled concentrations exceeding the significant impact level require that more refined modeling which includes source inventories and background data. These procedures are defined in "Guidelines for Air Quality Maintenance Planning and Analysis, Volume 10, Procedures for Evaluating Air Quality Impacts of New Stationary Sources" October 1977, U.S. EPA Office of Air Quality Planning and Standards (OAQPS).

Significant Impact Analysis

An air quality analysis, including air dispersion modeling, was performed to determine the maximum concentrations of the source emissions on receptors outside of the facility property lines.

A worst-case approach for emission estimates has been taken due to the nature of the operational capability of the facility.

(1) Model Description

The Office of Air Quality (OAQ) review used the Industrial Source Complex Short Term (ISCST3) model, Version 3, dated April 10, 2000 to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the United States Environmental Protection Agency (U.S. EPA) approved model, as listed in the 40 Code of Federal Register Part 51, Appendix W "Guideline on Air Quality Models". The Auer Land Use Classification scheme was referenced to determine the land use in a 3 kilometer (1.9 miles) radius from the source.

The area is considered primarily agricultural, therefore a rural classification was used.

The model also utilized the Schulman-Scire algorithm to account for building downwash effects. Stacks associated with the modification are below the Good Engineering Practice (GEP) formula for stack heights. This indicates wind flow over and around surrounding buildings can influence the dispersion of concentrations coming from the stacks.

326 IAC 1-7-3 requires a study to demonstrate that excessive modeled concentrations will not result from stacks with heights less than the GEP stack height formula. These aerodynamic downwash parameters were calculated using U.S. EPA's Building Profile Input Program (BPIP).

(2) Meteorological Data

The meteorological data used in the ISCST3 model consisted of the latest five years of available surface data from the Fort Wayne, IN National Weather Service station merged with the mixing heights from Dayton, OH Airport National Weather Service station. The 1990-1994 meteorological data was purchased through the National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC) and preprocessed into ISCST3-ready format with a version of U.S. EPA's PCRAMMET.

(3) Receptor Grid

Ground-level points (receptors) surrounding the source are input into the model to determine the maximum modeled concentrations that would occur at each point.

OAQ modeling utilized receptor grids out to 20 kilometers (12.4 miles) for all pollutants.

Dense receptor grids surround the property with receptors spaced every 100 meters (328 feet) out to 2 kilometers (1.25 miles) from IDI's property lines, receptors spaced every 200 meters (656 feet) from 2 kilometers to 4 kilometers (2.5 miles), receptors spaced every 500 meters (1640 feet) from 4 kilometers to 10 kilometers (6.2 miles) and 1000 meters (3280 feet) from 10 kilometers to 20 kilometers.

Discrete receptors were placed 100 meters or 328 feet apart on Iron Dynamics property lines.

(4) Modeled Emissions Data

The modeling used the emission rates listed in the application and was reviewed by OAQ. The modeling results reflect these emissions and are considered the controlling results for this air quality analysis.

(5) Modeled Results

Maximum modeled concentrations for each pollutant over its significant emission rate are listed below in Table 2 and are compared to each pollutant's significant impact level for Class II areas, as specified by U.S. EPA in the Federal Register, Volume 43, No. 118, pg 26398 (Monday, June 19, 1978).

Pollutant	Year	Time-Averaging Period	IDI Maximum Modeled Impacts	Significant Impact Levels	Significant Monitoring Levels
PM ₁₀	1992	24-hour	9.38	5.0	10.0
PM ₁₀	1992	Annual - 8760 hrs/yr	0.37	1.0	a

^a No limit exists for this time-averaged period

(6) Background Concentrations

Modeling results indicate that of the pollutants which were modeled, PM₁₀ impacts were not above pre-construction monitoring de minimus levels specified in 326 IAC 2-2. Table 3 above shows the results of the pre-construction monitoring analysis.

Background concentrations for use in the NAAQS analysis were added for PM₁₀. The background concentrations are listed below in Table 3.

Pollutant	Monitor Location	Time-Averaging Period	Monitored Concentrations
PM ₁₀	2022 North Beacon, Ft. Wayne	2nd highest 24-hour	39

Part C - Analysis of Source Impact on NAAQS

Emission inventories of PM₁₀ sources in Indiana within a 50 kilometer radius of Iron Dynamics, taken from the OAQ emission statement database as required by 326 IAC 2-6, were supplied to the consultants. EPA and OAQ have approved a screening method, using the ISCST3 model, to eliminate PM₁₀ NAAQS sources and PM₁₀ PSD sources from the inventory that have no significant impact in the source significant impact area for each pollutant. This method modeled all PM₁₀ NAAQS and PSD sources in the 50 kilometer radius from the site. Any source that has modeled concentrations less than the significant impact increment in the significant impact area of Iron Dynamics was removed from the NAAQS and PSD inventories. Sources which did not screen out of the NAAQS and PSD inventories were included in PM₁₀ refined air quality modeling. A summary of the screening results are listed in the permit application.

NAAQS modeling was conducted to compare to each pollutant's respective NAAQS limits. OAQ modeling results are shown in Table 4. All maximum concentrations of PM₁₀ for every time-averaged period were below their respective NAAQS limit and further modeling was not required.

Pollutant	Year	Time-Averaging Period	Modeled Source Impacts	Background	Total	NAAQS Limits
PM ₁₀	1994	Highest 2 nd high 24-hour	26.4	39	65.4	150.0

Part D - Analysis and Results of Source Impact on PSD Increment

Maximum allowable increases (PSD increments) are established by 326 IAC 2-2 for PM₁₀. This rule limits a source to no more than 80 percent of the available PSD increment to allow for future growth. Since the impacts for PM₁₀ from Iron Dynamics were modeled near or above significant impact increments, a PSD increment analysis for the existing major sources in Dekalb County and its surrounding counties was conducted. The PSD minor source baseline date in Dekalb County for PM₁₀, was established on February 8, 1988. All PSD sources in Dekalb County and surrounding counties from Iron Dynamics were screened.

Pollutant	Year	Time-Averaging Period	Modeled Concentrations	PSD Increment	Impact on PSD Increments
PM ₁₀	1994	Highest 2 nd high 24-hour	26.4	30.0	88%

326 IAC 2-2-6 describes the availability of PSD increment and maximum allowable increases as "increased emissions caused by the proposed major PSD source ... will not exceed 80% of the available maximum allowable increases over the baseline concentrations for sulfur dioxide, particulate matter and nitrogen dioxide...". The baseline concentrations are determined from modeling the existing PSD sources that impact Iron Dynamics significant impact area.

Table 5 shows the results of the PSD increment analysis for PM₁₀. The 24-hour PM₁₀ concentration exceeds the 80% PSD increment, further modeling to determine that the modification did not exceed 80% of the remaining increment on 1 day.

Table 6 contains the results of the days when the total increment consumption was greater than 80% and shows that the modification will consume more than 80% of the remaining increment.

TABLE 6- Remaining Increment Consumption

Day	Concentration	Increase due to modification	Previous High before modification	Available Increment	Percentage of Available increment consumed
7/19/1994	26.44	3.28	23.16	5.472	59.94

Additional Impact Analysis

PSD regulations require that additional impact analysis be conducted to show that impacts associated with the facility would not adversely affect the surrounding area. Iron Dynamic's PSD permit application provided an additional impact analysis performed by URS.

(1) Economic Growth and Impact of Construction Analysis

A minimal construction workforce is expected and Iron Dynamics will employ few new people selected from the local and regional area once the facility is operational. Secondary emissions are not expected to significantly impact the area as all roadways will be paved. Industrial and residential growth is predicted to have negligible impact in the area since it will be dispersed over a large area and new home construction is not expected to significantly increase. Any commercial growth, as a result of the proposed facility, will occur at a gradual rate and will be accounted for in the background concentration measurements from air quality monitors. A minimal number of support facilities will be needed. There will be no adverse impact in the area due to industrial, residential or commercial growth.

(2) Soils Analysis

Secondary NAAQS limits were established to protect general welfare, which includes soils, vegetation, animals and crops. Soil types in Dekalb County are of the Blount, Morley, Nappanee, Pewamo Association of which is predominately Miami silt loam with Clyde silty clay loam (Soil Survey of DeKalb County, U.S. Department of Agriculture). The general landscape consists of Tipton Till Plain or flat to gently rolling terrain (1816-1966 Natural Features of Indiana - Indiana Academy of Science). According to the insignificant modeled concentrations and PM₁₀ analysis, the soils will not be adversely affected by the facility.

(3) Vegetation Analysis

Due to the agricultural nature of the land, crops in the Dekalb County area consist mainly of corn, wheat, oats, soybeans and hay (1992 Agricultural Census for Dekalb County). The maximum modeled concentrations of Iron Dynamics for PM₁₀ is well below the threshold limits necessary to have adverse impacts on surrounding vegetation such as autumn bent, nimblewill, barnyard grass, bishopscap and horsetail milkweed (Flora of Indiana - Charles Deam). Livestock in the county consist mainly of hogs, beef and milk cows, sheep and chickens (1992 Agricultural Census for Dekalb County) and will not be adversely impacted from the modification. Trees in the area are mainly Beech, Maple, Oak and Hickory. These are hardy trees and due to the insignificant modeled concentrations, no significant adverse impacts are expected.

(4) Federal and State Endangered Species Analysis

Federally endangered or threatened species as listed in the U.S. Fish and Wildlife Service , Division of Endangered Species for Indiana include 12 species of mussels, 4 species of birds, 2 species of bat and butterflies and 1 species of snake. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The agricultural nature of the land overall has disturbed the habitats of the butterflies and snake and the proposed facility is not expected to impact the area.

Federally endangered or threatened plants as listed in the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana list two threatened and one endangered species of plants. The endangered plant is found along the sand dunes in northern Indiana while the two threatened species do not thrive on cultivated or grazing land. The proposed facility is not expected to impact the area.

The state of Indiana's list of endangered, special concern and extirpated nongame species, as listed in the Department of Natural Resources, Division of Fish and Wildlife, contains species of birds, amphibians, fish, mammals, mollusks and reptiles which may be found in the area of Iron Dynamics. However, the impacts are not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the agricultural activity in the area.

(5) Additional Analysis Conclusions

The nearest Class I area to the proposed merchant power facility is the Mammoth Cave National Park located approximately 475 km southwest in Kentucky. Operation of the proposed facility will not adversely affect the visibility at this Class I area. Iron Dynamics is located well beyond 100 kilometers (61 miles) from Mammoth Cave National Park and will not have significant impact on the Class I area. The results of the additional impact analysis conclude the Iron Dynamic's proposed facility will have no adverse impact on economic growth, soils, vegetation, endangered or threatened species or visibility on any Class I area.

IDEM Contact

Questions regarding this air quality analysis can be directed to Jeffrey Stokes at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015 or by telephone at 317/233-2725 or toll free at 1-800-451-6027 extension 3-2725 or by e-mail at jstokes@dem.state.in.us.