INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: August 9, 2011

RE: Alpha Baking Co., Inc. / 091-28222-00135

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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.dot12/03/07

IDEM

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New Source Construction and Federally Enforceable State Operating Permit OFFICE OF AIR QUALITY

Alpha Baking Co., Inc.
360 N. Fail Road
LaPorte, Indiana 46350

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

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 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. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-8-11.1, applicable to those conditions

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: F091-28222-00135	
Issued by: Alfred C. Dumaual, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: August 9, 2011 Expiration Date: August 9, 2016

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source 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 permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary wholesale bread baking operation.

Source Address:	360 N. Fail Road, LaPorte, Indiana 46350
General Source Phone Number:	(219) 325-6232
SIC Code:	2051
County Location:	LaPorte
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of 7.21 MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

(2) One (1) bread baking line, identified as Line 2, constructed in 1990, permitted in 2011, with a maximum production capacity of 6,930 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #2 Oven, with a maximum heat input capacity of 5.50 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #2 Proof Box.

(3) One (1) baking line, identified as Line 4, constructed in 2005, permitted in 2011, with a maximum production capacity of 4,331 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #4 Oven, with a maximum heat input capacity of 4.00 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #4 Proof Box.

(b) One (1) baking line, identified as Line 3, constructed in 1996, permitted in 2011, with a maximum production capacity of 3,465 lbs per hour, exhausting to stack ES10, and consisting of:

(1) One (1) natural gas direct-fired oven, identified as #3 Oven, with a maximum heat input capacity of 1.60 MMBtu/hr, exhausting to stack CS11; and

(2) One (1) proof box, identified as #3 Proof Box.

(c) One (1) dry ingredient storage and conveyance system, permitted in 2011, including, but not limited to, pneumatic conveyance process equipment and piping associated with the transfer of dry ingredients to and within the facility, storage silos, use bins, weigh scale hoppers, ingredient mixers, transfer equipment, other process equipment and piping, and associated pollution control equipment, with a maximum capacity of 19,500 pounds of dry ingredients per hour. The pneumatic conveyance system includes the following emission units:

(1) One (1) railcar pneumatic conveyance system, identified as emission unit P1, containing one (1) baghouse for control of particulate matter, and exhausting within the building;

(2) Six (6) dry ingredient storage silos, identified as emission units P2 through P7, installed in 1973, each with a maximum storage capacity of 200,000 lbs, P2 - P6 each containing one (1) filter unit and all passing through one (1) common baghouse for control of particulate matter from patent and rye flours, exhausting to atmosphere. P7 equipped with one (1) baghouse for the control of particulate matter from wheat flour, exhausting within the building;

(3) Three (3) dry ingredient storage silos, identified as emission units P8 through P10 installed in 1996, each with a maximum storage capacity of 90,000 lbs, equipped with one (1) baghouse servicing all 3 silos for control of particulate matter, and exhausting to the atmosphere;

(4) Three (3) dry ingredient use bins, identified as emission units P11 through P13, installed in 1973, each with a maximum storage capacity of 5,000 pounds of dry ingredients, each equipped with one (1) baghouse unit for control of particulate matter, and each exhausting to the atmosphere;

(5) One (1) dry ingredient use bin, identified as emission unit P14, installed in 1973, with a maximum storage capacity of 10,000 pounds of dusting flour, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building;

(6) One (1) dry ingredient use bin, identified as emission unit P15, installed in 1973, with a maximum storage capacity of 1,500 pounds of dusting flour, equipped with one (1) filter unit for control of particulate matter, and exhausting to the atmosphere;

(7) Two (2) bun scale hoppers, identified as emission units P16 and P17, installed in 1973, each with a maximum storage capacity of 2,000 pounds of dry ingredients, each equipped with one (1) filter unit for control of particulate matter emissions, and each exhausting within the building;

(8) Three (3) bread scale hoppers, identified as emission units P18

through P20, installed in 1973, each with a maximum storage capacity of 2,000 pounds of dry ingredients, each equipped with one (1) filter unit for control of particulate matter, and each exhausting within the building;

(9) One (1) bread/roll hopper, identified as emission units P21, installed in 1996, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building; and

(10) One (1) dry ingredient hopper, identified as emission unit P22, installed in 2005, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

(a) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour:

(1) One (1) natural gas-fired boiler, identified as Boiler #1, constructed in 1988, permitted in 2011, with a maximum heat capacity of 5.1 MMBtu per hour, and exhausting to one (1) stack identified as CS 1.

(2) One (1) natural gas-fired boiler, identified as Boiler #2, constructed in 1988, permitted in 2011, with a maximum heat capacity of 5.1 MMBtu per hour, and exhausting to one (1) stack identified as CS 2.

(3) Four (4) natural gas-fired comfort space heaters, identified as Heater #1 through Heater #4, all constructed in 1996, permitted in 2011, with maximum heat input capacities of 0.3 MMBtu per hour, each, and exhausting to stacks CS 17, CS 18, CS 19, and CS 20, respectively.

(b) Any unit, not regulated by a NESHAP, emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP:

(1) Four (4) inkjet printers, printing the date and product code on each product package.

(c) Paved and unpaved roadways and parking lots.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

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 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4][326 IAC 2-8]

This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 and 326 IAC 2-8 when prior to the start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit 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 emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.

(c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

B.4 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, F091-28222-00135, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.5 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.6 Enforceability [326 IAC 2-8-6] [IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.7 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.8 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.10 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

(1) it contains a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.11 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.12 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.14 Emergency Provisions [326 IAC 2-8-12]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, or Northwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Northwest Regional Office phone: (219) 757-0265; fax: (219) 757-0267.

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

B.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F091-28222-00135 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.16 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.17 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.18 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a

certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.19 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.20 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(2), (c)(1), and (d).

(b) Emission Trades [326 IAC 2-8-15(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.21 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.22 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee’s right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as

such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(4) The potential to emit greenhouse gasses (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO_2 equivalent (CO_2e) per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this 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.

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management

Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

C.8 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.10 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than 180 days from the date on which this source commences operation.

The ERP does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.16 Emission Statement [326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit an emission statement by July 1 following a calendar year when the source emits oxides of nitrogen or volatile organic compounds into the ambient air equal to or greater than twenty-five (25) tons. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

C.17 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are

available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.18 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of 7.21 MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

(2) One (1) bread baking line, identified as Line 2, constructed in 1990, permitted in 2011, with a maximum production capacity of 6,930 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #2 Oven, with a maximum heat input capacity of 5.50 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #2 Proof Box.

(3) One (1) baking line, identified as Line 4, constructed in 2005, permitted in 2011, with a maximum production capacity of 4,331 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #4 Oven, with a maximum heat input capacity of 4.00 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #4 Proof Box.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Best Available Control Technology (BACT) - VOC [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the Permittee shall control VOC emissions from the bread baking operations using the Best Available Control Technology (BACT), which has been determined to be the following:

(a) The VOC emissions from the #1 Oven, #2 Oven, and #4 Oven shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The source shall operate #1 Proof Box, #2 Proof Box, and #4 Proof Box in accordance the manufacturer's design and operating specifications.

(d) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #1 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Remove all bun pans;
(C) Scrape dough from conveyor, grids, and supports;
(D) Scrape all dough from floor;
(E) Sweep proof box floor;
(F) Wet entire floor with cleaning solvent mixture and then rinse;
(G) Scrape dough from bun pans;
(H) Put bun pans on proper pan car;

(2) Four (4) Week Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Remove all bun pans;
(C) Scrape dough from conveyor, grids, and supports;
(D) Scrape all dough from floor;
(E) Sweep proof box floor;
(F) Wet entire floor with cleaning solvent mixture and then rinse;
(G) Scrape dough from bun pans;
(H) Rinse exterior of box with water;
(I) Foam with cleaning solvent, let stand fifteen (15) minutes and rinse with water;
(J) Wet mop floor;
(K) Return ingredients to proper location;

(3) Thirteen (13) Week Cleaning Procedure:

(A) Vacuum sides and top of proof box.

(e) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #2 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;

(2) Four (4) Week Cleaning Procedure

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;
(E) Rinse exterior of box with water;
(F) Foam cleaning solvent, let stand fifteen (15) minutes and rinse with

water;
(G) Wet mop floor;
(H) Return ingredients to proper location;

(3) Thirteen (13) Week Cleaning Procedure:

(A) Vacuum sides and top of proof box.

(f) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #4 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Scrape and sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;

(2) Four (4) Week Cleaning Procedure

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Scrape and sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;
(E) Rinse exterior of box with water;
(F) Foam with cleaning solvent, let stand fifteen (15) minutes and rinse with water;
(G) Wet mop floor;
(H) Return ingredients to proper location;

(3) Twenty-six (26) Week Cleaning Procedure

(A) Vacuum sides and top of proof box.

D.1.2 FESOP VOC and HAP Limits [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable:

(a) The combined VOC emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common Catalytic Oxidizer stack (CAT-OX) shall not exceed 6.81 pounds per hour.

(b) The combined Acetaldehyde emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common Catalytic Oxidizer stack (CAT-OX) shall not exceed 1.52 pounds per hour.

(c) The overall Acetaldehyde control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 63%.

Compliance with these limits, combined with the potential to emit VOC and HAP from all other emission units, shall limit the VOC emissions from the entire source to less than one hundred (100) tons per year, shall limit the HAP emissions from the entire source to less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for any combination of

HAPs, and shall render the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.3 Compliance Schedule [326 IAC 2-8-5(a)(3)]

The Permittee shall comply with the following Compliance Schedule to come into compliance with 326 IAC 2-8-4, 326 IAC 8-1-6, and Conditions D.1.1(a), D.1.1(b), and D.1.2:

(a) Within thirty (30) days of the effective date of this permit F091-28222-00135, the Permittee shall issue a purchase order for VOC emission controls required by the permit in order to comply with 326 IAC 8-1-6 BACT for the bun baking line, identified as Line 1, the bread baking line, identified as Line 2, and the baking line, identified as Line 4.

(b) The VOC emission control for the baking lines (Line 1, Line 2, and Line 4) shall be installed and operated as soon as possible, but in no event, more than nine (9) months after the effective date of this permit.

(c) The Permittee shall provide a status report to IDEM, OAQ on the 15th of each month to include an update of the project required in (a) and (b) including and until the date the project is complete. The status report shall be addressed to Lynne Sullivan, Compliance and Enforcement Manager, and submitted to the address in Section C - General Reporting Requirements.

D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for CAT-OX and the ovens it controls. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.5 VOC and HAP Control

In order to comply with Conditions D.1.1(b) and D.1.2, the catalytic oxidizer (CAT-OX) shall be in operation and control emissions from the #1 Oven, #2 Oven, and #4 Oven at all times that these units are in operation.

D.1.6 Testing Requirements [326 IAC 2-8-5(a)(1),(4)][326 IAC 2-1.1-11][326 IAC 8-1-6][326 IAC 2-8-4]

(a) In order to demonstrate compliance with Conditions D.1.1(b) and D.1.2(a), the Permittee shall perform VOC testing (including emission rate and overall destruction efficiency) for the catalytic oxidizer, identified as CAT-OX, no later than 60 days after installation of the catalytic oxidizer and achieving maximum capacity for the bread lines (Line 1, Line 2, and Line 4), but not later than 180 days after initial installation and start-up of the catalytic oxidizer. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

(b) In order to demonstrate compliance with Conditions D.1.2(b) and D.1.2(c), the Permittee shall perform Acetaldehyde testing (including emission rate and overall destruction efficiency) for the catalytic oxidizer, identified as CAT-OX, no later than 60 days after installation of the catalytic oxidizer and achieving maximum capacity for the bread lines (Line 1, Line 2, and Line 4), but no later than 180 days after initial installation and start-up of the catalytic oxidizer. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing - contains the Permittee's obligation with regard to the performance testing required by this condition.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.1.7 Catalytic Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the catalytic oxidizer for measuring operating temperature. For the purpose of this condition, continuous means no less than once per fifteen (15) minutes. The output of this system shall be recorded as a three (3) hour average. From the date of startup until the stack test results are available, the Permittee shall operate the catalytic oxidizer at or above the three (3) hour average temperature of 600°F.

(b) The Permittee shall determine the three (3) hour average temperature from the most recent valid stack test that demonstrates compliance with Conditions D.1.1(b) and D.1.2.

(c) On and after the date the stack test results are available, the Permittee shall operate the catalytic oxidizer at or above the three (3) hour average temperature as observed during the most recent compliant stack test.

D.1.8 Parametric Monitoring

(a) The duct pressure or fan amperage shall be observed at least once per day when the catalytic oxidizer is in operation.

(b) The Permittee shall determine the appropriate duct pressure or fan amperage of the capture system for the catalytic oxidizer from the most recent valid stack test that demonstrates compliance with the limits in Conditions D.1.1(b) and D.1.2.

(c) On and after the date that the stack test results are available for the catalytic oxidizer, the duct pressure or fan amperage shall be maintained within the normal range as established during the most recent compliant stack test.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.7, the Permittee shall maintain continuous temperature records (on a 3-hour average basis) for the catalytic oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a temperature record is not taken and the reason for the lack of a temperature record (e.g., the process did not operate that day).

(b) To document the compliance status with Condition D.1.8, the Permittee shall maintain daily records of the duct pressure or fan amperage and the duct pressure or fan amperage used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a duct pressure or fan amperage record is not taken and the reason for the lack of duct pressure or fan amperage record (e.g., the process did not operate that day).

(c) Section C - General Record Keeping Requirements, contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) One (1) baking line, identified as Line 3, constructed in 1996, permitted in 2011, with a maximum production capacity of 3,465 lbs per hour, exhausting to stack ES10, and consisting of:

(1) One (1) natural gas direct-fired oven, identified as #3 Oven, with a maximum heat input capacity of 1.60 MMBtu/hr, exhausting to stack CS11; and

(2) One (1) proof box, identified as #3 Proof Box.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Best Available Control Technology (BACT) - VOC [326 IAC 8-1-6][326 IAC 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), 326 IAC 2-7 (Part 70 Program), and 326 IAC 2-2 (PSD) not applicable, the VOC emissions from the #3 Oven, excluding those from natural gas combustion, shall not exceed 18.18 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the potential to emit VOC from #3 Proof Box and the Line 3 natural gas combustion, shall limit the potential to emit of VOC to less than twenty-five (25) tons per twelve (12) consecutive month period from Line 3 and shall render the requirements of 326 IAC 8-1-6 not applicable.

Compliance with this limit, combined with the potential to emit VOC from all other emission units, shall limit the VOC emissions from the entire source to less than one hundred (100) tons per year, and shall render the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.2.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for Line 3. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.2.3 Volatile Organic Compounds

Compliance with the VOC limit contained in Condition D.2.1 shall be determined by the following equation:

$$VOC_i = \sum_{m=1}^{12} \left[\frac{Ef * B_m}{2000 lbs / ton} \right]_m \leq 18.18 \text{ tons of VOC per twelve consecutive month period}$$

Where:

VOC_i = VOC emissions from #3 Oven (tons per 12 consecutive month period)
Ef = Emission factor (pounds of VOC per ton of baked bread);

B_m = The amount of bread produced during month m (tons/month); and
m = each calendar month.

The emission factor shall be calculated using the most recently published equation for bread baking, as listed in AP-42 Chapter 9.9.6.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.2.4 Record Keeping Requirements

(a) To document the compliance status with Conditions D.2.1 and D.2.3, the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained for (1) through (4) shall be taken as stated below and shall be complete and sufficient to establish compliance with Conditions D.2.1 and D.2.3.

(1) The dates of the compliance period.

(2) The amount of bread produced during each compliance period;

(3) The following information necessary to calculate the VOC emission factor during each compliance period:

(A) The initial baker's percent of yeast;

(B) The total yeast action time in hours;

(C) The final (spike) baker's percent of yeast; and

(D) The spiking time in hours.

(4) The weight of VOC emitted for each month and each compliance period.

(b) Section C - General Record Keeping Requirements, contains the Permittee's obligations with regard to the records required by this condition.

D.2.5 Reporting Requirement

A quarterly summary of the information to document the compliance status with Conditions D.2.1 and D.2.3 shall be submitted using the reporting form located at the end of this permit, or its equivalent, no later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(c) One (1) dry ingredient storage and conveyance system, permitted in 2011, including, but not limited to, pneumatic conveyance process equipment and piping associated with the transfer of dry ingredients to and within the facility, storage silos, use bins, weigh scale hoppers, ingredient mixers, transfer equipment, other process equipment and piping, and associated pollution control equipment, with a maximum capacity of 19,500 pounds of dry ingredients per hour. The pneumatic conveyance system includes the following emission units:

(1) One (1) railcar pneumatic conveyance system, identified as emission unit P1, containing one (1) baghouse for control of particulate matter, and exhausting within the building;

(2) Six (6) dry ingredient storage silos, identified as emission units P2 through P7, installed in 1973, each with a maximum storage capacity of 200,000 lbs, P2 - P6 each containing one (1) filter unit and all passing through one (1) common baghouse for control of particulate matter from patent and rye flours, exhausting to atmosphere. P7 equipped with one (1) baghouse for the control of particulate matter from wheat flour, exhausting within the building;

(3) Three (3) dry ingredient storage silos, identified as emission units P8 through P10 installed in 1996, each with a maximum storage capacity of 90,000 lbs, equipped with one (1) baghouse servicing all 3 silos for control of particulate matter, and exhausting to the atmosphere;

(4) Three (3) dry ingredient use bins, identified as emission units P11 through P13, installed in 1973, each with a maximum storage capacity of 5,000 pounds of dry ingredients, each equipped with one (1) baghouse unit for control of particulate matter, and each exhausting to the atmosphere;

(5) One (1) dry ingredient use bin, identified as emission unit P14, installed in 1973, with a maximum storage capacity of 10,000 pounds of dusting flour, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building;

(6) One (1) dry ingredient use bin, identified as emission unit P15, installed in 1973, with a maximum storage capacity of 1,500 pounds of dusting flour, equipped with one (1) filter unit for control of particulate matter, and exhausting to the atmosphere;

(7) Two (2) bun scale hoppers, identified as emission units P16 and P17, installed in 1973, each with a maximum storage capacity of 2,000 pounds of dry ingredients, each equipped with one (1) filter unit for control of particulate matter emissions, and each exhausting within the building;

(8) Three (3) bread scale hoppers, identified as emission units P18 through P20, installed in 1973, each with a maximum storage capacity of 2,000 pounds of dry ingredients, each equipped with one (1) filter unit for control of particulate matter, and each exhausting within the building;

(9) One (1) bread/roll hopper, identified as emission units P21, installed in 1996, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building; and

(10) One (1) dry ingredient hopper, identified as emission unit P22, installed in 2005, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.3.1 PSD Minor Limits [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits:

Emission Unit Type	Total Dry Ingredient Throughput Limit (tons/yr)*	PM Limit (lbs/ton)
One (1) Railcar Pneumatic Conveyance System (P1)	85,410	0.314
Six (6) Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	85,410	0.314
Three (3) Dry Ingredient Storage Silos (P8, P9, P10)		
Three (3) Dry Ingredient Use Bins (P11, P12, P13)	85,410	0.314
One (1) Dry Ingredient Use Bin (P14)		
One (1) Dry Ingredient Use Bin (P15)		
Two (2) Bun Scale Hoppers (P16, P17)	85,410	0.314
Three (3) Bread Scale Hoppers (P18, P19, P20)		
One (1) Bread/Roll Hopper (P21)		
One (1) Dry Ingredient Hopper (P22)		

* Total dry ingredient throughput limit in tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit PM from all other emission units, shall limit the PM emissions from the entire source to less than 250 tons per year, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

D.3.2 FESOP Limits [326 IAC 2-8-4]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the dry ingredient storage and conveying emission units shall be limited as follows:

Emission Unit Type	Total Dry Ingredient Throughput Limit (tons/yr)*	PM10 Limit (lbs/ton)	PM2.5 Limit (lbs/ton)
One (1) Railcar Pneumatic Conveyance System (P1)	85,410	0.110	0.110
Six (6) Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	85,410	0.110	0.110
Three (3) Dry Ingredient Storage Silos (P8, P9, P10)			
Three (3) Dry Ingredient Use Bins (P11, P12, P13)	85,410	0.110	0.110
One (1) Dry Ingredient Use Bin (P14)			
One (1) Dry Ingredient Use Bin (P15)			
Two (2) Bun Scale Hoppers (P16, P17)	85,410	0.110	0.110
Three (3) Bread Scale Hoppers (P18, P19, P20)			
One (1) Bread/Roll Hopper (P21)			
One (1) Dry Ingredient Hopper (P22)			

* Total dry ingredient throughput limit in tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit PM10 and PM2.5 from all other emission units, shall limit the PM10 and PM2.5 emissions from the entire source to less than one hundred (100) tons per year, and shall render the requirements of 326 IAC 2-7 (Part 70 Program) not applicable.

D.3.3 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Emission Unit Type	Maximum Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)
One (1) Railcar Pneumatic Conveyance System (P1)	9.75	18.85
Six (6) Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	9.75 (each)	18.85 (each)
Three (3) Dry Ingredient Storage Silos (P8, P9, P10)		
Three (3) Dry Ingredient Use Bins (P11, P12, P13)	9.75 (each)	18.85 (each)
One (1) Dry Ingredient Use Bin (P14)		
One (1) Dry Ingredient Use Bin (P15)		
Two (2) Bun Scale Hoppers (P16, P17)	9.75 (each)	18.85 (each)
Three (3) Bread Scale Hoppers (P18, P19, P20)		
One (1) Bread/Roll Hopper (P21)		
One (1) Dry Ingredient Hopper (P22)		

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

D.3.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.3.5 Particulate Control

(a) In order to comply with Conditions D.3.1, D.3.2, and D.3.3, particulate from each of the dry ingredient storage and conveying emission units shall be controlled by a filter unit or baghouse at all times that each of the dry ingredient storage and conveying emission units is in operation.

(b) In the event that filter failure is observed in a multi-compartment filter unit, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements

D.3.6 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with (P2 through P6 and P8 through P10) at least once per day when these units are in operation. When for any one reading, the pressure drop across the filters is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps. Section C – Response to Excursions or Exceedances contains the Permittee’s obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

(b) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated or replaced at least once every six (6) months.

D.3.7 Broken or Failed Bag or Filter Detection

(a) For a single compartment baghouse or filter controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse or filter controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emissions unit. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag or filter failure can be indicated by a significant drop in the baghouses pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, or dust traces.

Record Keeping and Reporting Requirements

D.3.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.6, the Permittee shall maintain a daily record of the pressure drops across the baghouses controlling P2 through P6 and P8 through P10. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (i.e., the process did not operate that day).

(b) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the recordkeeping requirements of this requirement.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities:

(a) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour:

(1) One (1) natural gas-fired boiler, identified as Boiler #1, constructed in 1988, permitted in 2011, with a maximum heat capacity of 5.1 MMBtu per hour, and exhausting to one (1) stack identified as CS 1.

(2) One (1) natural gas-fired boiler, identified as Boiler #2, constructed in 1988, permitted in 2011, with a maximum heat capacity of 5.1 MMBtu per hour, and exhausting to one (1) stack identified as CS 2.

(3) Four (4) natural gas-fired comfort space heaters, identified as Heater #1 through Heater #4, all constructed in 1996, permitted in 2011, with maximum heat input capacities of 0.3 MMBtu per hour, each, and exhausting to stacks CS 17, CS 18, CS 19, and CS 20, respectively.

(b) Any unit, not regulated by a NESHAP, emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP:

(1) Four (4) inkjet printers, printing the date and product code on each product package.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.4.1 Particulate Emission Limitations [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), the particulate emissions from the two boilers shall not exceed 0.60 lb/MMBtu.

This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

where Q = total source heat input capacity (MMBtu/hr)

For these units, Q = 10.2 MMBtu/hr.

D.4.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Alpha Baking Co., Inc.
Source Address: 360 N. Fail Road, LaPorte, Indiana 46350
FESOP Permit No.: F091-28222-00135

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Signature:
Printed Name:
Title/Position:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) EMERGENCY OCCURRENCE REPORT

Source Name: Alpha Baking Co., Inc.
Source Address: 360 N. Fail Road, LaPorte, Indiana 46350
FESOP Permit No.: F091-28222-00135

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FESOP Quarterly Report

Source Name: Alpha Baking Co., Inc.
Source Address: 360 N. Fail Road, LaPorte, Indiana 46350
FESOP Permit No.: F091-28222-00135
Facility: #3 Oven
Parameter: VOC Emissions
Limit: VOC emissions from the #3 Oven, excluding those from natural gas combustion, shall not exceed 18.18 tons per twelve (12) consecutive month period.

YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Alpha Baking Co., Inc.
Source Address: 360 N. Fail Road, LaPorte, Indiana 46350
FESOP Permit No.: F091-28222-00135

Months: _____ **to** _____ **Year:** _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Mail to: Permit Administration and Support Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Alpha Baking Co., Inc.
360 N. Fail Road
LaPorte, Indiana 46350

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)

4. I hereby certify that Alpha Baking Co., Inc., located at 360 N. Fail Road, LaPorte, Indiana, has constructed and will operate a stationary wholesale bread baking operation, in conformity with the requirements and intent of the permit application received by the Office of Air Quality on July 10, 2009, and as permitted pursuant to the New Source Construction and FESOP No. 091-28222-00135 issued on _____.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature_____
Date_____

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana

on this _____ day of _____, 20 _____. My Commission expires: _____.

Signature_____
Name_____ (typed or printed)

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a New Source Construction and FESOP

Source Background and Description

Source Name:	**Alpha Baking Co., Inc.**
Source Location:	**360 N. Fail Road, LaPorte, Indiana 46350**
County:	**LaPorte**
SIC Code:	**2051**
Operation Permit No.:	**F 091-28222-00135**
Permit Reviewer:	**Jason R. Krawczyk**

On June 27, 2011, the Office of Air Quality (OAQ) had a notice published in the LaPorte Herald - Argus, LaPorte, Indiana, stating that Alpha Baking Co., Inc. had applied for a New Source Construction and FESOP to permit an existing wholesale bread baking operation. The notice also stated that the OAQ proposed to issue a New Source Construction and FESOP for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On July 26, 2011, Alpha Baking Co., Inc. submitted comments to IDEM, OAQ on the draft New Source Construction and FESOP.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

Alpha Baking Co. does not believe that the regular testing of acetaldehyde should be considered a compliance requirement. With levels of production and formulation, Alpha is at no risk of violating a HAP threshold for acetaldehyde. Secondly, testing for acetaldehyde requires different methodology than testing for VOC so it would require additional testing above and beyond that required for VOC compliance and this testing is also considerably more costly. Lastly, no current air permit on file for Indiana bakeries requires regular acetaldehyde compliance testing. Alpha Baking believes that this could put them at a competitive disadvantage compared to the other Indiana bakers.

Response to Comment 1:

The uncontrolled potential to emit Acetaldehyde is greater than ten (10) tons per twelve (12) consecutive month period and the source has elected to take the following synthetic minor limits in order to avoid being a major source of HAPs:

(1) The combined Acetaldehyde emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common Catalytic Oxidizer stack (CAT-OX) shall not exceed 1.52 pounds per hour.

(2) The overall Acetaldehyde control efficiency for the catalytic oxidizer (including the capture

efficiency and destruction efficiency) shall be at least 63%.

The testing requirements are necessary in order to ensure proper operation of the catalytic oxidizer and to ensure compliance with the synthetic minor limit of 1.52 lbs/hr.

Allen Foods, Inc. was required to perform an initial acetaldehyde stack test in order to verify the emission factor used for its potential to emit calculations. IDEM requires testing on a case-by-case basis, and not to an industry as a whole. During the FESOP Renewal process, and after the initial stack test has been performed, Alpha Baking Co., Inc. can request the IDEM Compliance and Enforcement Branch review the recurring testing requirement and reevaluate the continued necessity at that time.

No changes were made as a result of this comment.

Comment 2:

Alpha Baking would like to reference the SSOPs for the proof boxes as documents to be kept on file rather than having them specifically listed in the permit. If Alpha is allowed to reference documents for control PMPs, then it should be accepted for the proof box sanitation procedures as well. This is requested so that Alpha can make improvements to sanitation procedures if/when they arise. As it is now, Alpha would have to fill out the required paperwork and get the approval through IDEM before making a simple change to a proof box sanitation procedure. Not only would this require time for IDEM and Alpha but also limit Alpha's flexibility to respond to potentially critical sanitation concerns.

Response to Comment 2:

The Preventive Maintenance Plans (PMPs) identified in the permit are for the identification of the individuals responsible for inspecting, maintaining and repairing emission control devices, to list the items or conditions that will be inspected and the inspection schedule for said items or conditions, and for the identification and quantification of the replacement parts which will be maintained in inventory for quick replacement. The PMP does not ensure compliance with an emission limit or pollutant reduction.

The purpose of the BACT is to ensure that a facility will reduce VOC emissions using best available control technology (BACT). For the purpose of controlling proof boxes, BACT has been determined to be work practice standards in the form of following manufacturer's specifications and following a tiered cleaning schedule. The minimal requirements of the Sanitation Standard Operating Procedures (SSOP) must be identified in order for BACT to be practically enforceable. IDEM does not agree to the referencing of SSOPs as being sufficient for BACT. IDEM has agreed to revise the BACT requirements to remove specific language that has been deemed to be incidental and to allow the facility to perform the identified cleaning operations, <u>or their equivalent</u>, in order to allow the source operational flexibility without having to revise the BACT document for incidental changes that will not affect the reduction of VOC emissions.

The permit has been revised accordingly as follows:

D.1.1 Best Available Control Technology (BACT) - VOC [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the Permittee shall control VOC emissions from the bread baking operations using the Best Available Control Technology (BACT), which has been determined to be the following:

...

(d) **In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #1 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:** ~~The source shall perform the following proof box cleaning operations for the #1 Proof Box, in order to ensure proper operation and to minimize potential emissions:~~

(1) Weekly Cleaning Procedure:

~~(A) Lock out equipment;~~
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Remove all bun pans;
(D) ~~Using long handle extension, s~~**S**crape dough from conveyor, grids, and supports;
(E) ~~Start from center and s~~**S**crape all dough from floor;
(F) Sweep proof box floor ~~from center out. Put sweepings in gray bucket. Empty bucket into blue metal cart~~;
(G) ~~Fill five (5) gallon bucket (3/4 full) with F-204 at 11 ounces per gallon and w~~**W**et entire floor **with cleaning solvent mixture** and then rinse;
(H) Scrape dough from bun pans ~~and put into blue metal cart~~;
(I) Put bun pans on proper pan car;
~~(J) Empty and clean blue metal cart. Put cart in proper location; and~~
~~(K) Remove lock out and turn power on.~~

(2) Four (4) Week Cleaning Procedure:

~~(A) Lock out equipment;~~
(**A**~~B~~) Remove all raw ingredients and/or product containers from seeder area;
(**B**~~C~~) Remove all bun pans;
(**C**~~D~~) ~~Using long handle extension, s~~**S**crape dough from conveyor, grids, and supports;
(**D**~~E~~) ~~Start from center and s~~**S**crape all dough from floor;
(**E**~~F~~) Sweep proof box floor ~~from center out. Put sweepings in gray bucket. Empty bucket into blue metal cart~~;
(**F**~~G~~) ~~Fill five (5) gallon bucket (3/4 full) with F-204 at 11 ounces per gallon and w~~**W**et entire floor **with cleaning solvent mixture** and then rinse;
(**G**~~H~~) Scrape dough from bun pans ~~and put into blue metal cart~~;
~~(I) Put bun pans on proper pan cart;~~
(**H**~~J~~) Rinse exterior of box with water;
(**I**~~K~~) Foam with ~~F-204~~ **cleaning solvent**, let stand fifteen (15) minutes and rinse with water;
(**J**~~L~~) Wet mop floor;
(**K**~~M~~) Return **bun pans and** ingredients to proper location;
~~(N) Empty and clean blue metal cart. Put cart in proper location; and~~
~~(O) Remove Lock out and turn power on.~~

(3) Thirteen (13) Week Cleaning Procedure:

~~(A) Using extension ladder, climb on top of the east side for the proof box;~~
~~(B) Secure safety harness;~~
(**A**~~C~~) Vacuum **sides and top of proof box**;
~~(D) Move equipment and repeat procedure to remaining sides of proof box. Use long extensions to vacuum top of box;~~
~~(E) Empty and clean vacuum; and~~
~~(F) Put all equipment away in proper locations.~~

(e) **In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #2 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:**

~~The source shall perform the following proof box cleaning operations for the #2 Proof Box, in order to ensure proper operation and to minimize potential emissions:~~

(1) Weekly Cleaning Procedure:

~~(A) Lock out equipment;~~
(**A**~~B~~) Remove all raw ingredients and/or product containers from seeder area;
(**B**~~C~~) ~~Using long handle extension, s~~**S**crape dough from racks and supports;
(**C**~~D~~) Sweep proof box floor~~. Put sweepings in gray bucket. Empty bucket into blue metal cart~~;
(**D**~~E~~) ~~Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and w~~**W**et entire floor **with cleaning solvent mixture** and then rinse;
~~(F) Empty and clean blue metal cart. Put cart in proper location; and~~
~~(G) Remove lock out and turn power on.~~

(2) Four (4) Week Cleaning Procedure

~~(A) Lock out equipment;~~
(**A**~~B~~) Remove all raw ingredients and/or product containers from seeder area;
(**B**~~C~~) ~~Using long handle extension, s~~**S**crape dough from racks and supports;
(**C**~~D~~) Sweep proof box floor~~. Put sweepings in gray bucket. Empty bucket into blue metal cart~~;
(**D**~~E~~) ~~Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and w~~**W**et entire floor **with cleaning solvent mixture** and then rinse;
(**E**~~F~~) Rinse exterior of box with water;
(**F**~~G~~) Foam with ~~F 204~~ **cleaning solvent**, let stand fifteen (15) minutes and rinse with water;
(**G**~~H~~) Wet mop floor;
(**H**~~I~~) Return ingredients to proper location;
~~(J) Empty and clean blue metal cart. Put cart in proper location; and~~
~~(K) Remove lock out and turn power on.~~

(3) Thirteen (13) Week Cleaning Procedure:

~~(A) Using extension ladder, climb on top of the proof box;~~
~~(B) Secure safety harness;~~
(**A**~~C~~) Vacuum **sides and top of proof box**;
~~(D) Empty and clean vacuum; and~~
~~(E) Put all equipment away in proper locations.~~

(f) **In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #4 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:** ~~The source shall perform the following proof box cleaning operations for the #4 Proof Box, in order to ensure proper operation and to minimize potential emissions:~~

(1) Weekly Cleaning Procedure:

~~(A) Lock out equipment;~~
(**A**~~B~~) Remove all raw ingredients and/or product containers from seeder area;
(**B**~~C~~) ~~Using long handle extension, s~~**S**crape dough from racks and supports;
(**C**~~D~~) Scrape and sweep proof box floor~~. Put sweepings in gray bucket. Empty bucket into blue metal cart~~;

(**D**~~E~~) ~~Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and w~~**W**et entire floor **with cleaning solvent mixture** and then rinse;
~~(F) Empty and clean blue metal cart. Put cart in proper location; and~~
~~(G) Remove lock out and turn power on.~~

(2) Four (4) Week Cleaning Procedure

~~(A) Lock out equipment;~~
(**A**~~B~~) Remove all raw ingredients and/or product containers from seeder area;
(**B**~~C~~) ~~Using long handle extension, s~~**S**crape dough from racks and supports;
(**C**~~D~~) Scrape and sweep proof box floor. ~~Put sweepings in gray bucket. Empty bucket into blue metal cart~~;
(**D**~~E~~) ~~Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and w~~**W**et entire floor **with cleaning solvent mixture** and then rinse;
(**E**~~F~~) Rinse exterior of box with water;
(**F**~~G~~) Foam with ~~F 204~~ **cleaning solvent**, let stand fifteen (15) minutes and rinse with water;
(**G**~~H~~) Wet mop floor;
(**H**~~I~~) Return ingredients to proper location;
~~(J) Empty and clean blue metal cart. Put cart in proper location; and~~
~~(K) Remove loc out and turn power on.~~

(3) Twenty-six (26) Week Cleaning Procedure

~~(A) Using extension ladder, climb on top of the proof box;~~
~~(B) Secure safety harness;~~
(**A**~~C~~) Vacuum **sides and top of proof box**;
~~(D) Empty and clean vacuum; and~~
~~(E) Put all equipment away in proper locations.~~

...

Comment 3:

The capacity of the natural gas direct-fired oven, identified as #1 Oven, was incorrect in the supplemental application for the new Line 1 oven and needs to be modified. The maximum capacity of this new oven is 7.21 MMBtu/hr.

Response to Comment 3:

The permit has been revised accordingly as follows:

...

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of ~~3.50~~ **7.21** MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

...

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of ~~3.50~~ **7.21** MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

...

...

See ATSD Appendix A for detailed emission calculations.

Comment 4:

Alpha Baking opposes the references to proof boxes and proof box emissions in the permit. Properly operating proof boxes create a static atmosphere to control humidity and temperature creating an optimum environment for yeast fermentation. Because there is no exhaust from proof boxes, experimental testing has required that air be pulled from the inside of the proof box. This artificial air flow is not a representative sample of what may be in a proof box. The control of proof boxes is not practical. Proof boxes should not be permitted.

The US EPA addressed proof boxes in the "Alternative Control Technology Document for Bakery Oven Emissions." Page 1-3 states, "The primary emission source at a bakery is the oven. Because the ethanol produced by yeast metabolism is generally liquid at temperatures below 77°C (170° F), it is not emitted in appreciable amounts until the dough is exposed to high temperatures in the oven. Although high concentrations of VOC exist in the proof boxes that are often used to raise the panned dough, the low air flow though those boxes minimizes emissions."

Response to Comment 4:

Although Alpha Baking opposes the references to proof boxes and proof box emissions in the permit, IDEM has actual stack test data submitted by the facility for each of the on-site proof boxes, which identify VOC emissions from the proof boxes ranging from 0.72 to 1.39 pounds per ton of dough processed. The ACT document is correct in that it identifies the primary emission source at a bakery as being the oven. Approximately ninety percent (90%) of the emissions at the bakery are through the oven, with the remaining ten percent (10%) of emissions being released through the proof box. Due to the source specific testing and the identification of high VOC concentrations existing in the proof boxes, as identified in the ACT document, IDEM disagrees with the source that proof boxes and proof box emissions should not be referenced in the permit.

No changes were made as a result of this comment.

Additional Changes

Pursuant to 326 IAC 2-7-1(39), starting July 1, 2011, greenhouse gases (GHGs) emissions are subject to regulation at a source with a potential to emit 100,000 tons per year or more of CO2 equivalent emissions (CO2e). Therefore, CO2e emissions have been calculated for this source. Based on the calculations, the unlimited potential to emit greenhouse gases from the entire source is less than 100,000 tons of CO2e per year (see ATSD Appendix A for detailed calculations).

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

...

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM) **and greenhouse gases (GHGs)**, from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(4) The potential to emit greenhouse gasses (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO_2 equivalent (CO_2e) per twelve (12) consecutive month period.

...

IDEM Contact

(a) Questions regarding this proposed New Source Construction and FESOP can be directed to Jason R. Krawczyk at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5174 or toll free at 1-800-451-6027 extension 4-5174.

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) 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.idem.in.gov

SUMMARY OF EMISSIONS

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Uncontrolled / Unlimited Emissions (Tons/Yr)

Pollutant	Line #1			Line #2			Line #4			Line #3			Misc. Nat Gas	Ingredient Storage & Handling	Inkjet Printers	Paved Roadways*	Unpaved Roadways*	Total
	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas						
PM	-	-	0.06	-	-	0.05	-	-	0.03	-	-	0.01	0.09	536.37	-	0.31	2.93	536.62
PM10	-	-	0.24	-	-	0.18	-	-	0.13	-	-	0.05	0.38	187.90	-	0.06	0.75	188.89
PM2.5	-	-	0.24	-	-	0.18	-	-	0.13	-	-	0.05	0.38	187.90	-	0.02	0.75	188.89
VOC	295.67	12.29	0.17	207.14	21.10	0.13	92.70	8.44	0.10	58.91	6.68	0.04	0.27	-	0.63	-	-	704.27
NOx	-	-	3.16	-	-	2.41	-	-	1.75	-	-	0.70	4.99	-	-	-	-	13.01
SO2	-	-	0.02	-	-	0.01	-	-	0.01	-	-	0.00	0.03	-	-	-	-	0.08
CO	-	-	2.65	-	-	2.02	-	-	1.47	-	-	0.59	4.19	-	-	-	-	10.93
CO2e	-	-	3,813	-	-	2,908	-	-	2,115	-	-	846	6,028	-	-	-	-	15,711
Single HAP (Acetaldehyde)	8.87	0.37	-	6.21	0.63	-	2.78	0.25	-	1.77	0.20	-	-	-	-	-	-	21.09
Combined HAPs	8.87	0.37	0.06	6.21	0.63	0.05	2.78	0.25	0.03	1.77	0.20	0.01	0.09	-	0.02	-	-	21.36

Controlled / Unlimited Emissions (Tons/Yr)

Pollutant	Line #1			Line #2			Line #4			Line #3			Misc. Nat Gas	Ingredient Storage & Handling	Inkjet Printers	Paved Roadways*	Unpaved Roadways*	Total
	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas						
PM	-	-	0.06	-	-	0.05	-	-	0.09	-	-	0.01	0.09	5.36	-	0.31	2.93	5.67
PM10	-	-	0.24	-	-	0.18	-	-	0.13	-	-	0.05	0.38	1.88	-	0.06	0.75	2.87
PM2.5	-	-	0.24	-	-	0.18	-	-	0.13	-	-	0.05	0.38	1.88	-	0.02	0.75	2.87
VOC	14.78	12.29	0.01	10.36	21.10	0.13	4.63	8.44	0.10	58.91	6.68	0.04	0.27	-	0.63	-	-	138.38
NOx	-	-	3.16	-	-	2.41	-	-	1.75	-	-	0.70	4.99	-	-	-	-	13.01
SO2	-	-	0.02	-	-	0.01	-	-	0.01	-	-	0.00	0.03	-	-	-	-	0.08
CO	-	-	2.65	-	-	2.02	-	-	1.47	-	-	0.59	4.19	-	-	-	-	10.93
CO2e	-	-	3,813	-	-	2,908	-	-	2,115	-	-	846	6,028	-	-	-	-	15,711
Single HAP (Acetaldehyde)	0.44	0.37	-	0.31	0.63	-	0.14	0.25	-	1.77	0.20	-	-	-	-	-	-	4.12
Combined HAPs	0.44	0.37	0.06	0.31	0.63	0.05	0.14	0.25	0.03	1.77	0.20	0.01	0.09	-	0.02	-	-	4.39

Limited Emissions (Tons/Yr)

Pollutant	Line #1			Line #2			Line #4			Line #3			Misc. Nat Gas	Ingredient Storage & Handling	Inkjet Printers	Paved Roadways*	Unpaved Roadways*	Total
	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas						
PM	-	-	0.06	-	-	0.05	-	-	0.03	-	-	0.01	0.09	53.64	-	0.31	2.93	53.88
PM10	-	-	0.24	-	-	0.18	-	-	0.13	-	-	0.05	0.38	18.79	-	0.06	0.75	19.78
PM2.5	-	-	0.24	-	-	0.18	-	-	0.13	-	-	0.05	0.38	18.79	-	0.02	0.75	19.78
VOC [A,B,D]	29.83	12.29	B	A	21.10	0.13	A	8.44	0.10	18.18	6.68	0.04	0.27	-	0.63	-	-	97.70
NOx	-	-	3.16	-	-	2.41	-	-	1.75	-	-	0.70	4.99	-	-	-	-	13.01
SO2	-	-	0.02	-	-	0.01	-	-	0.01	-	-	0.004	0.03	-	-	-	-	0.08
CO	-	-	2.65	-	-	2.02	-	-	1.47	-	-	0.59	4.19	-	-	-	-	10.93
CO2e	-	-	3,813	-	-	2,908	-	-	2,115	-	-	846	6,028	-	-	-	-	15,711
Single HAP (Acetaldehyde) [C]	6.66	0.37	-	C	0.63	-	C	0.25	-	1.77	0.20	-	-	-	-	-	-	9.88
Combined HAPs	6.66	0.37	0.06	E	0.63	0.05	E	0.25	0.03	1.77	0.20	0.01	0.09	-	0.02	-	-	10.15

Note:
In order to comply with 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the source is required to operate a catalytic oxidzer to control emissions from the #1 Oven, #2 Oven, and #3 Oven. The catalytic oxidizer shall have a destruction and removal efficiency of at least 95%.
A- Combined VOC emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX shall be limited to 6.81 lbs/hr.
B- Natural Gas Combustion emissions from the #1 Oven are included in the combined VOC limit for the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX. The #2 Oven and #4 Oven combustion emissions are exhausted through separate stacks.
C- Combined Acetaldehyde emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX, shall be limited to 1.52 lbs/hr.
D- Potential VOC emissions from the #3 Oven shall not exceed 18.18 tons per twelve consecutive month period. This limit combined with the potential to emit from other emissions units in Line 3, shall limit potential emissions from Line 3 to less than 24.90 tons per twelve consecutive month period and make the requirements of 326 IAC 8-1-6 not applicable.
E- The only HAP emitted from the bakery ovens and proof boxes is Acetaldehyde. Since Acetaldehyde is limited to 1.52 lbs/hr, the potential to emit Combined HAPs from the bakery oven and proof boxes is assumed to be equal to 1.52 lbs/hr.
*Fugitive PM, PM10, PM2.5, and VOC are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Appendix A: Emissions Calculations
Line 1
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Potential Oven Emissions

		BACT Control Efficiency	95%							
Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (tons/year)	Potential VOC Emissions (tons/year)	Controlled VOC Emissions (tons/year)	Potential Acetaldehyde Emissions (tons/year)	Controlled Acetaldehyde Emissions (tons/year)
4" Butter Bun	3.80	4.30	3.10	1.30	3.65	34,146.48	62.31	3.12	1.87	0.09
4" Potato Cluster	5.70	1.40	0.00	0.00	7.59	34,146.48	129.55	6.48	3.89	0.19
4" Seeded Cluster	5.70	1.30	0.00	0.00	7.57	34,146.48	129.22	6.46	3.88	0.19
4" Seeded Loose	3.40	4.30	1.50	1.30	4.09	34,146.48	69.75	3.49	2.09	0.10
4" Wheat Cluster	6.00	1.40	0.00	0.00	7.87	34,146.48	134.42	6.72	4.03	0.20
5" Butter Buns	3.80	4.30	3.10	1.30	3.65	34,146.48	62.31	3.12	1.87	0.09
5" Seeded Loose	3.40	5.00	1.70	1.50	3.95	34,146.48	67.41	3.37	2.02	0.10
Arby Seed Kaiser	3.70	4.30	4.10	1.30	3.04	34,146.48	51.98	2.60	1.56	0.08
BBLoCarb	15.10	5.50	0.00	0.00	17.32	34,146.48	295.67	14.78	8.87	0.44
BunLoCarb	10.90	1.30	0.00	0.00	12.51	34,146.48	213.56	10.68	6.41	0.32
Hardees Kaiser	3.80	5.00	3.10	1.50	3.61	34,146.48	61.70	3.09	1.85	0.09
Split Top Corn	3.10	5.00	0.00	0.00	5.82	34,146.48	99.37	4.97	2.98	0.15
Steak Buns	3.00	4.30	1.40	1.30	3.76	34,146.48	64.14	3.21	1.92	0.10
CornDuster	3.30	4.30	3.50	1.30	2.97	34,146.48	50.72	2.54	1.52	0.08
Snowflake	3.00	4.30	0.80	1.30	4.06	34,146.48	69.36	3.47	2.08	0.10
4" Hambs	3.40	5.00	2.30	1.50	3.64	34,146.48	62.18	3.11	1.87	0.09
4.5" White Hamburger	3.40	5.10	1.50	1.50	4.07	34,146.48	69.48	3.47	2.08	0.10
5" BK Hambs	3.40	5.00	1.70	1.50	3.95	34,146.48	67.41	3.37	2.02	0.10
5" Hambs	3.40	5.00	3.20	1.50	3.18	34,146.48	54.34	2.72	1.63	0.08
BB Cluster Hambs	5.70	1.30	0.00	0.00	7.57	34,146.48	129.22	6.46	3.88	0.19
BB Seeded Cluster	5.70	1.30	0.00	0.00	7.57	34,146.48	129.22	6.46	3.88	0.19
4" White Cluster	5.70	1.40	0.00	0.00	7.59	34,146.48	129.55	6.48	3.89	0.19
4" Potato Hamburger	5.70	1.40	0.00	0.00	7.59	34,146.48	129.55	6.48	3.89	0.19
						Worst-Case Emissions:	**295.67**	**14.78**	**8.87**	**0.44**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi+0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 7796 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%
Controlled Acetaldehyde Emissions (ton/year) = Potential Acetaldehyde Emissions * (1 - control efficiency)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)

Appendix A: Emissions Calculations
Line 1
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Potential Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential VOC Emissions (Tons/Yr)**
0.72	34,146.48	**12.29**

Potential Acetaldehyde Emissions (Tons/Yr)
0.37

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
7.2

Potential Throughput (MMCF/yr)
63.2

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.06**	**0.24**	**0.02**	**3.16**	**0.17**	**2.65**

Controlled VOC Emissions (tons/year)
8.68E-03

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	6.632E-05	3.790E-05	2.368E-03	5.684E-02	1.074E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.579E-05	3.474E-05	4.421E-05	1.200E-05	6.632E-05
				Total HAPs:	**5.960E-02**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	3789.58	0.07	0.07
Summed Potential Emissions in tons/yr	3789.72		
CO2e Total in tons/yr	**3812.64**		

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Combustion Methodology:
The N2O Emission Factor for uncontrolled is 2.2.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Line 2
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Pit ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Oven Emissions

		BACT Control Efficiency	95%							
Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (ton/year)	Potential VOC Emissions (ton/year)	Controlled VOC Emissions (ton/year)	Potential Acetaldehyde Emissions (tons/year)	Controlled Acetaldehyde Emissions (tons/year)
1# Patio French	2.00	1.70	0.00	0.00	4.13	30,353.40	62.70	3.14	1.88	0.09
12 Grain	1.80	1.30	0.00	0.00	3.86	30,353.40	58.64	2.93	1.76	0.09
1lb Toaster	3.60	4.30	1.40	1.30	4.33	30,353.40	65.66	3.28	1.97	0.10
2# 9Grain	2.00	5.00	2.70	1.90	1.76	30,353.40	26.77	1.34	0.80	0.04
2# LoCarb	7.00	5.60	0.00	0.00	9.64	30,353.40	146.33	7.32	4.39	0.22
2# SourDlx	3.10	1.30	0.00	0.00	5.10	30,353.40	77.38	3.87	2.32	0.12
2# WheDelux	2.60	5.90	1.80	1.80	3.05	30,353.40	46.36	2.32	1.39	0.07
2#WhiDelux	1.90	4.80	0.00	0.00	4.64	30,353.40	70.44	3.52	2.11	0.11
20 oz Wheat & Honey	3.20	4.80	2.70	1.60	3.12	30,353.40	47.40	2.37	1.42	0.07
20" French Bread	2.50	1.30	0.00	0.00	4.53	30,353.40	68.73	3.44	2.06	0.10
24oz Hawaiian	1.40	4.90	0.00	0.00	4.19	30,353.40	63.52	3.18	1.91	0.10
24oz Healthy Grain	1.30	5.00	1.80	1.90	1.56	30,353.40	23.65	1.18	0.71	0.04
24oz MultiGrain	1.80	1.30	0.00	0.00	3.86	30,353.40	58.64	2.93	1.76	0.09
24oz Potato	2.00	4.80	0.00	0.00	4.74	30,353.40	71.88	3.59	2.16	0.11
24oz Whole Wheat	1.40	4.80	1.00	1.70	2.19	30,353.40	33.30	1.66	1.00	0.05
24oz Black Rye Bread	2.00	1.80	2.20	1.60	1.65	30,353.40	25.09	1.25	0.75	0.04
2lb Deli Seed	2.20	1.30	0.00	0.00	4.24	30,353.40	64.40	3.22	1.93	0.10
2lb Dill Rye	2.00	4.30	2.20	1.30	2.40	30,353.40	36.40	1.82	1.09	0.05
2lb Euro Wheat	2.10	1.30	0.00	0.00	4.15	30,353.40	62.96	3.15	1.89	0.09
2lb Marble Rye	4.30	6.80	0.00	0.00	7.31	30,353.40	110.96	5.55	3.33	0.17
2lb Plain Rye	2.00	4.70	2.20	1.60	2.22	30,353.40	33.67	1.68	1.01	0.05
2lb Seeded Rye Bread	2.00	4.70	2.20	1.60	2.22	30,353.40	33.67	1.68	1.01	0.05
2lb Sour	2.80	1.30	0.00	0.00	4.81	30,353.40	73.05	3.65	2.19	0.11
3# Black Rye	3.00	4.70	2.90	1.60	2.81	30,353.40	42.67	2.13	1.28	0.06
3lb Euro Wheat	0.70	4.10	1.00	1.80	1.31	30,353.40	19.83	0.99	0.59	0.03
3lb Marble Rye	4.30	6.80	0.00	0.00	7.31	30,353.40	110.96	5.55	3.33	0.17
3lb Pan French	2.00	5.80	0.40	1.70	3.27	30,353.40	49.55	2.48	1.49	0.07
3lb Pan Plain Rye	3.00	4.70	2.90	1.60	2.81	30,353.40	42.67	2.13	1.28	0.06
3lb Seeded Rye Bread	3.00	4.70	2.90	1.60	2.81	30,353.40	42.67	2.13	1.28	0.06
97% Fat Free	1.70	6.00	1.90	1.90	2.08	30,353.40	31.60	1.58	0.95	0.05
B&S French	4.40	4.80	0.00	0.00	7.02	30,353.40	106.48	5.32	3.19	0.16
Bakers Square Black	4.50	1.90	0.00	0.00	6.55	30,353.40	99.34	4.97	2.98	0.15
Bakers Square Sour	3.90	1.90	0.00	0.00	5.98	30,353.40	90.69	4.53	2.72	0.14
BB 1lb Marble	0.90	5.00	0.00	0.00	3.73	30,353.40	56.61	2.83	1.70	0.08
BB Apple	4.70	1.30	0.00	0.00	6.62	30,353.40	100.45	5.02	3.01	0.15
BB Raisin Bread	3.50	1.30	0.00	0.00	5.48	30,353.40	83.15	4.16	2.49	0.12
BB Seeded Rye Bread	2.50	4.30	2.30	1.30	2.82	30,353.40	42.84	2.14	1.29	0.06
BB Wheat Bread	2.10	1.30	0.00	0.00	4.15	30,353.40	62.96	3.15	1.89	0.09
Big Value	1.70	4.30	2.40	1.30	2.01	30,353.40	30.53	1.53	0.92	0.05
BK Round Sourdough	10.90	1.30	0.00	0.00	12.51	30,353.40	189.84	9.49	5.70	0.28
BrLoCarb	7.00	5.60	0.00	0.00	9.64	30,353.40	146.33	7.32	4.39	0.22
Capritial	2.30	1.30	0.00	0.00	4.34	30,353.40	65.84	3.29	1.98	0.10
Hearty White	1.00	4.80	0.70	1.70	1.97	30,353.40	29.85	1.49	0.90	0.04
Inn Keepers Bread	3.90	4.90	1.00	1.70	4.59	30,353.40	69.64	3.48	2.09	0.10
KroRaisin	4.50	4.30	2.40	1.30	4.67	30,353.40	70.90	3.54	2.13	0.11
Oat Bran Bread	1.50	2.00	0.00	0.00	3.72	30,353.40	56.38	2.82	1.69	0.08
Wheat Berry Bread	2.10	2.00	0.00	0.00	4.29	30,353.40	65.03	3.25	1.95	0.10
YellCylin	1.60	1.70	0.00	0.00	3.75	30,353.40	56.94	2.85	1.71	0.09
2# PlainBB	3.00	5.00	0.00	0.00	5.73	30,353.40	86.89	4.34	2.61	0.13
2# PumpBB	2.30	5.00	0.10	1.90	3.38	30,353.40	51.22	2.56	1.54	0.08
2# SeedBB	3.00	5.00	0.20	1.90	3.99	30,353.40	60.54	3.03	1.82	0.09
24oz Jalapheno	2.70	1.30	0.00	0.00	4.72	30,353.40	71.61	3.58	2.15	0.11
42ozWeClu	3.00	1.30	0.00	0.00	5.00	30,353.40	75.94	3.80	2.28	0.11
42ozWiClu	3.00	1.30	0.00	0.00	5.00	30,353.40	75.94	3.80	2.28	0.11
ATMGrn	12.10	1.30	0.00	0.00	13.65	30,353.40	207.14	10.36	6.21	0.31
ATRye	9.70	1.30	0.00	0.00	11.37	30,353.40	172.54	8.63	5.18	0.26
ATWhite	10.70	1.30	0.00	0.00	12.32	30,353.40	186.95	9.35	5.61	0.28
BB English Totaster	1.70	1.70	0.00	0.00	3.85	30,353.40	58.38	2.92	1.75	0.09
BBCottage	3.30	4.30	1.70	1.30	3.89	30,353.40	59.01	2.95	1.77	0.09
Corn Toasting Bread	6.20	5.60	0.00	0.00	8.88	30,353.40	134.80	6.74	4.04	0.20
LoCarbWhi	7.00	5.60	0.00	0.00	9.64	30,353.40	146.33	7.32	4.39	0.22
Sam's 48oz Wheat	3.40	4.30	2.00	1.30	3.83	30,353.40	58.13	2.91	1.74	0.09
2lb Black Rye Bread	2.00	1.80	2.20	1.60	1.65	30,353.40	25.09	1.25	0.75	0.04
3#Wheat	0.70	4.10	1.00	1.80	1.31	30,353.40	19.83	0.99	0.59	0.03
Milton Bread	5.10	1.70	0.00	0.00	7.08	30,353.40	107.40	5.37	3.22	0.16
Vienna Bread	2.00	4.80	0.00	0.00	4.74	30,353.40	71.88	3.59	2.16	0.11
Carnegie Rye	6.80	1.30	0.00	0.00	8.61	30,353.40	130.72	6.54	3.92	0.20
Kirkland Grain Bread	1.80	1.30	0.00	0.00	3.86	30,353.40	58.64	2.93	1.76	0.09
Maple Leaf 9 Grain	2.40	1.30	0.00	0.00	4.43	30,353.40	67.29	3.36	2.02	0.10
Maple Leaf Caraway Rye	2.60	1.30	0.00	0.00	4.62	30,353.40	70.17	3.51	2.11	0.11
Maple Leaf Eng. Toaster	1.70	1.30	0.00	0.00	3.77	30,353.40	57.19	2.86	1.72	0.09
Marble Wheat Bread	1.00	4.30	0.00	0.00	3.69	30,353.40	55.98	2.80	1.68	0.08
Pannini White Bread	0.30	6.30	0.00	0.00	3.41	30,353.40	51.81	2.59	1.55	0.08
Wide Pan 9 Grain	2.20	1.70	0.00	0.00	4.32	30,353.40	65.59	3.28	1.97	0.10
High Crown White	1.70	5.30	1.00	1.20	3.01	30,353.40	45.63	2.28	1.37	0.07
Soft Cylinder	1.70	4.30	0.50	1.20	3.07	30,353.40	46.54	2.33	1.40	0.07
Yellow Cylinder	1.60	1.70	0.00	0.00	3.75	30,353.40	56.94	2.85	1.71	0.09
						Worst-Case Emissions:	**207.14**	**10.36**	**6.21**	**0.31**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi+0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 6930 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%
Controlled Acetaldehyde Emissions (ton/year) = Potential Acetaldehyde Emissions * (1 - control efficiency)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)

Appendix A: Emissions Calculations
Line 2
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential VOC Emissions (tons/yr)**
1.39	30,353.40	**21.096**

Potential Acetaldehyde Emissions (Tons/Yr)
0.63

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
5.5

Potential Throughput (MMCF/yr)
48.2

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.05**	**0.18**	**0.01**	**2.41**	**0.13**	**2.02**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenze	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	5.059E-05	2.891E-05	1.807E-03	4.336E-02	8.191E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.205E-05	2.650E-05	3.373E-05	9.154E-06	5.059E-05
				Total HAPs:	**4.55E-02**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	2890.80	0.06	0.05
Summed Potential Emissions in tons/yr	2890.91		
CO2e Total in tons/yr	**2908.39**		

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Combustion Methodology:
The N2O Emission Factor for uncontrolled is 2.2.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Line 3
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (ton/year)	Potential VOC Emissions (ton/year)	Potential Acetaldehyde Emissions (ton/year)
1# Caraway Cocktail	2.20	2.30	0.00	0.00	4.44	15,176.70	33.68	1.01
1# Cocktail Marble	1.80	2.30	0.00	0.00	4.06	15,176.70	30.80	0.92
1# Patio French	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
1# Pump Cocktail	3.00	2.30	0.00	0.00	5.20	15,176.70	39.45	1.18
1# White Cocktail	1.70	2.30	0.00	0.00	3.96	15,176.70	30.08	0.90
10oz Onion Cocktail	1.50	2.30	0.00	0.00	3.77	15,176.70	28.63	0.86
10oz Pump Cocktail	3.00	2.30	0.00	0.00	5.20	15,176.70	39.45	1.18
10oz Seeded Cocktail	2.30	2.30	0.00	0.00	4.53	15,176.70	34.40	1.03
20" French Bread	2.50	2.30	0.00	0.00	4.72	15,176.70	35.84	1.08
25" French	3.40	1.50	0.00	0.00	5.42	15,176.70	41.15	1.23
25" YellFr	1.60	2.30	0.00	0.00	3.87	15,176.70	29.36	0.88
6" Sour	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
7" French	4.10	2.30	0.00	0.00	6.24	15,176.70	47.38	1.42
Airline Dinner Rolls	4.10	2.30	0.00	0.00	6.24	15,176.70	47.38	1.42
Beasley French Bat	2.00	1.50	0.00	0.00	4.09	15,176.70	31.06	0.93
BS Dinner	3.40	1.50	0.00	0.00	5.42	15,176.70	41.15	1.23
Butter Rolls	1.80	2.60	0.00	0.00	4.12	15,176.70	31.24	0.94
Demi FreMV	2.20	2.30	0.00	0.00	4.44	15,176.70	33.68	1.01
Demi Jalapeno Bag	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
DemiGaChe	1.80	2.30	0.00	0.00	4.06	15,176.70	30.80	0.92
Egg & Poppy	1.70	2.30	0.00	0.00	3.96	15,176.70	30.08	0.90
Ficelle	4.80	2.30	0.00	0.00	6.91	15,176.70	52.42	1.57
French Dinner Roll	4.10	1.50	0.00	0.00	6.09	15,176.70	46.19	1.39
French Twins	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
Herb & Onion D.R.	3.30	2.30	0.00	0.00	5.48	15,176.70	41.61	1.25
Honey Wheat	2.00	2.60	0.00	0.00	4.31	15,176.70	32.68	0.98
M French	4.10	2.30	0.00	0.00	6.24	15,176.70	47.38	1.42
Martino French D.R.	2.70	2.30	0.00	0.00	4.91	15,176.70	37.29	1.12
Martino Wheat D.R.	2.90	2.30	0.00	0.00	5.10	15,176.70	38.73	1.16
Multi Grain D.R.	2.10	2.30	0.00	0.00	4.34	15,176.70	32.96	0.99
Organic Demi Bag	3.60	2.30	0.00	0.00	5.77	15,176.70	43.77	1.31
P.B. SDT Din Rolls	2.00	1.50	0.00	0.00	4.09	15,176.70	31.06	0.93
Petite Dinner Rolls	0.60	1.50	0.00	0.00	2.76	15,176.70	20.96	0.63
PetiWheat	2.90	2.30	0.00	0.00	5.10	15,176.70	38.73	1.16
Potato Rolls	5.70	2.30	0.00	0.00	7.76	15,176.70	58.91	1.77
PPFrench	3.40	1.60	0.00	0.00	5.44	15,176.70	41.30	1.24
SafeWheat	4.30	1.60	0.00	0.00	6.30	15,176.70	47.78	1.43
SafeWhite	4.50	1.50	0.00	0.00	6.47	15,176.70	49.08	1.47
Slipper Bread	2.00	2.70	0.00	0.00	4.33	15,176.70	32.83	0.98
Cinnamon Raisin	2.70	2.60	0.00	0.00	4.97	15,176.70	37.73	1.13
Demi Multigrain Bag	2.70	2.30	0.00	0.00	4.91	15,176.70	37.29	1.12
DemiCombo	2.30	2.30	0.00	0.00	4.53	15,176.70	34.40	1.03
Herb Focaccia	2.00	2.60	0.00	0.00	4.31	15,176.70	32.68	0.98
Wheat Slipper	3.20	2.60	0.00	0.00	5.45	15,176.70	41.33	1.24
Organic We Demi Bag	3.60	2.30	0.00	0.00	5.77	15,176.70	43.77	1.31
						Worst-Case Emissions:	**58.91**	**1.77**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi+0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 3465 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Appendix A: Emissions Calculations
Line 3
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential VOC Emissions (Tons/Yr)**
0.88	15,176.70	**6.68**

Potential Acetaldehyde Emissions (Tons/Yr)
0.20

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
1.6

Potential Throughput (MMCF/yr)
14.0

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.01**	**0.05**	**4.20E-03**	**0.70**	**0.04**	**0.59**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenzen	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.472E-05	8.410E-06	5.256E-04	1.261E-02	2.383E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	3.504E-06	7.709E-06	9.811E-06	2.663E-06	1.472E-05
				Total HAPs:	**1.323E-02**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	840.96	0.02	0.02
Summed Potential Emissions in tons/yr	840.99		
CO2e Total in tons/yr	**846.08**		

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Combustion Methodology:
The N2O Emission Factor for uncontrolled is 2.2.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Line 4
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

		BACT Control Efficiency	95%							
Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (ton/year)	Potential VOC Emissions (ton/year)	Controlled VOC Emissions (tons/year)	Potential Acetaldehyde Emissions (tons/year)	Controlled Acetaldehyde Emissions (tons/year)
4" Potato Cluster	5.70	1.40	0.00	0.00	7.59	18,969.78	71.97	3.60	2.16	0.11
4" Wheat Cluster	6.00	1.40	0.00	0.00	7.87	18,969.78	74.67	3.73	2.24	0.11
BB Cluster Hambs	5.70	1.30	0.00	0.00	7.57	18,969.78	71.79	3.59	2.15	0.11
Hot Dog Buns	5.00	1.40	0.00	0.00	6.92	18,969.78	65.66	3.28	1.97	0.10
PanRoll	8.00	1.40	0.00	0.00	9.77	18,969.78	92.70	4.63	2.78	0.14
Potato Hot Dog	6.10	1.40	0.00	0.00	7.97	18,969.78	75.58	3.78	2.27	0.11
SftRllPln	6.70	1.30	0.00	0.00	8.52	18,969.78	80.80	4.04	2.42	0.12
Wheat Hot Dogs	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
Yellow Steak Buns	4.80	1.30	0.00	0.00	6.71	18,969.78	63.68	3.18	1.91	0.10
4" White Cluster	5.70	1.40	0.00	0.00	7.59	18,969.78	71.97	3.60	2.16	0.11
4.5" Cluster Corn Bun	6.60	1.40	0.00	0.00	8.44	18,969.78	80.08	4.00	2.40	0.12
4.5" Cluster Egg Bun	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
4.5" Cluster Wheat Bun	5.30	1.40	0.00	0.00	7.21	18,969.78	68.37	3.42	2.05	0.10
Steak Buns	3.00	4.30	1.40	1.30	3.76	18,969.78	35.63	1.78	1.07	0.05
Wheat Pan Rolls	5.10	1.30	0.00	0.00	7.00	18,969.78	66.38	3.32	1.99	0.10
9x9 Ciabatta	5.40	1.30	0.00	0.00	7.28	18,969.78	69.08	3.45	2.07	0.10
Ruby Tues Pan Rolls	7.10	1.40	0.00	0.00	8.92	18,969.78	84.59	4.23	2.54	0.13
Slipper Bread	2.00	2.70	0.00	0.00	4.33	18,969.78	41.04	2.05	1.23	0.06
Wheat Slipper	3.20	2.60	0.00	0.00	5.45	18,969.78	51.66	2.58	1.55	0.08
BB Seeded Cluster	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
BB Wheat Clusters	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Hamburgers	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Hotdogs	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Wheat Hamburgers	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Wheat Hot Dogs	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
						Worst-Case Emissions:	**92.70**	**4.63**	**2.78**	**0.14**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi*0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 4331 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%
Controlled Acetaldehyde Emissions (ton/year) = Potential Acetaldehyde Emissions * (1 - control efficiency)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)

Appendix A: Emissions Calculations
Line 4
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential Emissions (tons/year)**
0.89	18,969.78	**8.44**

Potential Acetaldehyde Emissions (Tons/Yr)
0.25

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
4.0

Potential Throughput (MMCF/yr)
35.0

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.03**	**0.13**	**0.01**	**1.75**	**0.10**	**1.47**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.679E-05	2.102E-05	1.314E-03	3.154E-02	5.957E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	8.760E-06	1.927E-05	2.453E-05	6.658E-06	3.679E-05
				Total HAPs:	**3.306E-02**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	2102.40	0.04	0.04
Summed Potential Emissions in tons/yr	2102.48		
CO2e Total in tons/yr	**2115.19**		

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Combustion Methodology:
The N2O Emission Factor for uncontrolled is 2.2.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations
Miscellaneous Natural Gas Combustion

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Emission Unit ID
5.1	44.7	Boiler 1
5.1	44.7	Boiler 2
0.3	2.6	Heater 1
0.3	2.6	Heater 2
0.3	2.6	Heater 3
0.3	2.6	Heater 4
11.40	99.86	

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.09	0.38	0.03	4.99	0.27	4.19

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.049E-04	5.992E-05	3.745E-03	8.988E-02	1.698E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.497E-05	5.493E-05	6.990E-05	1.897E-05	1.049E-04
				Total HAPs:	**9.423E-02**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	5991.84	0.11	0.11
Summed Potential Emissions in tons/yr	5992.06		
CO2e Total in tons/yr	6028.31		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr

Appendix A: Emissions Calculations
Emissions from Dry Ingredient Storage and Conveying

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Uncontrolled Emission Factor (lbs/ton)*	
PM	PM10 / PM2.5
3.14	1.10

Filter Unit Control Efficiency
PM/PM10/PM2.5
99.0%

Potential to Emit (PTE) of Particulate (PM / PM10 / PM2.5)

Emission Unit	Maximum Ingredient Throughput (lbs/hr)	Maximum Ingredient Throughput (tons/hr)	Uncontrolled PTE of PM (lbs/hr)	Uncontrolled PTE of PM10/PM2.5 (lbs/hr)	Uncontrolled PTE of PM (tons/yr)	Uncontrolled PTE of PM10/PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10/PM2.5 (tons/yr)
1 Railcar Pneumatic Conveyance System (P1)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
6 Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
3 Dry Ingredient Storage Silos (P8, P9, P10)								
3 Dry Ingredient Use Bins (P11, P12, P13)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
1 Dry Ingredient Use Bin (P14)								
1 Dry Ingredient Use Bin (P15)								
2 Bun Scale Hoppers (P16, P17)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
3 Bread Scale Hoppers (P18, P19, P20)								
1 Bread/Roll Hopper (P21)								
1 Dry Ingredient Hopper (P22)								
				Totals	**536.37**	**187.90**	**5.36**	**1.88**

Note:

*The uncontrolled potential emissions of particulate from dry ingredient storage and conveying before controls are estimated using AP-42 Table 11.12-2 emission factors for the uncontrolled truck unloading of cement supplement to elevated storage silo (pneumatic). No AP-42 emission factors exist for dry ingredient (including flour) pneumatic conveyance.
Assumed PM10 = PM2.5

Methodology:

Maximum Hourly Throughput (tons/hr) = [Maximum Hourly Throughput (lbs/hr)] / [2000 lbs/ton]
Uncontrolled PTE of PM or PM10 (lbs/hour) = [Maximum Hourly Throughput (tons/hr)] * [Emission Factor (lbs/ton)]
Uncontrolled PTE of PM or PM10 (tons/year) = [Uncontrolled PTE of PM or PM10 (lbs/hour)] * [8760 hours/year)] / [2000 lbs/ton]
Controlled PTE of PM or PM10 (tons/year) = [Uncontrolled PTE of PM or PM10 (tons/year)] *[1 - Control Efficiency]

Appendix A: Emission Calculations
VOC & HAP Emissions
From Inkjet Printers

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: July 5, 2011

Inkjet Printers Solvent/Ink Usage (VOC)

Material	Density (lb/gal)	Annual Usage (gal)	VOC Content (lbs/gal)	Potential VOC Emissions (lb/hr)	(lb/day)	(tons/yr)
SI-LP43 Flush/Cleaner	8.40	6.75	0.25	1.93E-04	4.62E-03	8.44E-04
SI-SQ60 Black Ink	8.51	45.00	0.82	4.21E-03	0.10	0.02
265 Make-Up Ink	6.72	103.50	6.72	0.08	1.91	0.35
47 Ink	7.26	13.50	5.58	8.60E-03	0.21	0.04
16-8565 Make-Up Ink	6.59	56.25	6.52	0.04	1.01	0.18
16-8200 Ink	7.506	18.00	5.18	0.01	0.26	0.05
				0.14	3.48	**0.63**

Notes:
Annual usage information provided by source.
VOC Contents obtained from product MSDS sheets.

Methodology:
Potential VOC Emissions (tons/yr) = Annual Usage (gal) * VOC Content (lbs/gal) * 1 ton / 2,000 lbs
Potential VOC Emissions (lb/hr) = Annual Usage (gal) * VOC Content (lbs/gal) * 1 yr / 8760 hrs
Potential VOC Emissions (lb/day) = Potential VOC (lb/hr) * 24

Inkjet Printers Solvent/Ink Usage (HAP)

Material	Density (lb/gal)	Annual Usage (gal)	Methanol Content (lbs/gal)	Potential Methanol Emissions (tons/yr)
16-8200 Ink	7.506	18.00	2.63	0.02
				0.02

Notes:
Annual usage information provided by source.
HAP Contents obtained from product MSDS sheets.

Methodology:
Potential HAP Emissions (tons/yr) = Annual Usage (gal) * HAP Content (lbs/gal) * 1 ton / 2,000 lbs

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: **Alpha Baking Co., Inc.**
Address City IN Zip: **360 N. Fail Road, LaPorte, Indiana 46350**
Permit Number: **F091-28222-00135**
Plt ID: **091-00135**
Reviewer: **Jason R. Krawczyk**
Date: **July 5, 2011**

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	17.0	2.35	40.0	16.9	675.2	1000	0.189	7.6	2761.7
Vehicle (leaving plant) (one-way trip)	17.0	2.35	40.0	16.9	675.2	1000	0.189	7.6	2761.7
		Total	**79.9**		**1350.3**			**15.1**	**5523.4**

Average Vehicle Weight Per Trip = 16.9 tons/trip
Average Miles Per Trip = 0.19 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	16.9	16.9	16.9	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m^2 = ubiquitous baseline silt loading value for ADT < 500 - Table 13.2.1-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.124	0.025	0.0061	lb/mile
Mitigated Emission Factor, Eext =	0.113	0.023	0.0055	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.17	0.03	0.01	0.16	0.03	0.01
Vehicle (leaving plant) (one-way trip)	0.17	0.03	0.01	0.16	0.03	0.01
	0.34	**0.07**	**0.02**	**0.31**	**0.06**	**0.02**

Methodology:
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations:
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads

Company Name: **Alpha Baking Co., Inc.**
Address City IN Zip: **360 N. Fail Road, LaPorte, Indiana 46350**
Permit Number: **F091-28222-00135**
Plt ID: **091-00135**
Reviewer: **Jason R. Krawczyk**
Date: **July 5, 2011**

Unpaved Roads at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	8.5	2.4	20.0	16.9	337.6	575	0.109	2.2	794.0
Vehicle (leaving plant) (one-way trip)	8.5	2.4	20.0	16.9	337.6	575	0.109	2.2	794.0
		Total	**40.0**		**675.2**			**4.4**	**1588.0**

Average Vehicle Weight Per Trip = 16.9 tons/trip
Average Miles Per Trip = 0.11 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Sand/Gravel Processing Plant)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	16.9	16.9	16.9	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	5.62	1.43	1.43	lb/mile
Mitigated Emission Factor, Eext =	3.69	0.94	0.94	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	2.23	0.57	0.57	1.47	0.37	0.37
Vehicle (leaving plant) (one-way trip)	2.23	0.57	0.57	1.47	0.37	0.37
	4.46	**1.14**	**1.14**	**2.93**	**0.75**	**0.75**

Methodology:
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations:
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
Best Available Control Technology (BACT) Determination

Addendum to the Technical Support Document (ATSD) for a
New Source Construction and Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Alpha Baking Co., Inc. - LaPorte
Source Location:	360 North Fail Road, LaPorte, Indiana 46350
County:	LaPorte
SIC Code:	2051
Operation Permit No.:	F091-28222-00135
Permit Reviewer:	Jason R. Krawczyk

Background Information

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) review for the existing bakery, owned and operated by Alpha Baking Co., Inc located at 360 North Fail Road, LaPorte, Indiana 46350. The following existing emission units have the potential to emit volatile organic compounds (VOCs) greater than twenty-five (25) tons per twelve (12) consecutive month period. Pursuant to the provisions of 326 IAC 8-1-6, Best Available Control Technology analyses for VOC were performed for these units:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of 3.50 MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

(2) One (1) bread baking line, identified as Line 2, constructed in 1990, permitted in 2011, with a maximum production capacity of 6,930 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #2 Oven, with a maximum heat input capacity of 5.50 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #2 Proof Box.

(3) One (1) baking line, identified as Line 4, constructed in 2005, permitted in 2011, with a maximum production capacity of 4,331 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #4 Oven, with a maximum heat input capacity of 4.00 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #4 Proof Box.

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies;

(4) Evaluate the most effective controls and document the results; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts of the control options. Emission reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment.

VOC BACT Analysis

Step One: Identify All Potentially Available Control Technologies

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling VOC emissions from the bakery lines (Line 1, Line 2, and Line 4):

(a) Catalytic Oxidizer:

Catalytic oxidation is the process of oxidizing organic contaminants in a waste gas stream within a heated chamber containing a catalyst bed in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The catalyst is used to lower the activation energy of the oxidation reaction. The residence time, temperature, flow velocity and mixing, the oxygen concentration, and type of catalyst used in the combustion chamber affect the oxidation rate and destruction efficiency. Catalytic oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Catalytic oxidizers operate at lower temperatures and require less fuel than thermal oxidizers, they have a smaller footprint, and they need little or no insulation. Catalytic oxidizers are typically designed to have a residence time of 0.5 seconds or less and combustion chamber temperatures between 600 and 1,200°F. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

The two types of catalytic oxidation systems include recuperative and regenerative catalytic oxidizers, which are differentiated by the type of heat recovery equipment used. In a recuperative catalytic oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. VOC destruction efficiencies greater than 98% are achievable under certain operating conditions (EPA-453/R-92-017). However, based on the information reviewed for this BACT determination, a VOC destruction efficiency of 95% or a VOC outlet concentration of 10 ppmv or less is achievable on a consistent basis under normal

operational conditions for a typical bread baking operation.

(b) Thermal Oxidizer:

Thermal oxidation is the process of oxidizing organic contaminants in a waste gas stream by raising the temperature above the auto-ignition point in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The residence time, temperature, flow velocity and mixing, and the oxygen concentration in the combustion chamber affect the oxidation rate and destruction efficiency. Thermal oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Thermal oxidizers are typically designed to have a residence time of one second or less and combustion chamber temperatures between 1,200 and 2,000°F.

The three types of thermal oxidation systems include direct flame, recuperative, and regenerative thermal oxidizers, which are differentiated by the type of heat recovery equipment used. A direct flame thermal oxidizer consists of only a combustion chamber with no heat recovery equipment. In a recuperative thermal oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flowrates, since the variable flowrate results in varying residence times, combustion chamber temperature, and poor mixing. VOC destruction efficiencies greater than 98% are achievable under certain operating conditions (EPA-453/R-92-017). However, a VOC destruction efficiency of 95% is achievable on a consistent basis under normal operational conditions for a typical bread baking operation.

(c) Wet Packed Bed Scrubber:

A wet packed bed scrubber is an absorption system in which a waste gas stream is interacted with a scrubbing liquid inside a contact chamber containing a bed of packing media in order to strip contaminant gases from the waste gas stream through the process of dissolution. Water is the most commonly used scrubbing liquid. Other solvents may be used depending on the components of the waste gas stream. Based on information reviewed for this BACT determination, a wet packed bed scrubber is infeasible due to the low effectiveness for VOC control and the generation of large amount of waste water

(d) Biofiltration:

Biofiltration is a process in which a waste gas stream is passed through a bed of peat, compost, bark, soil, gravel, or other inorganic media in order to strip organic contaminant gases from the waste gas stream through the process of dissolution in the bed moisture and adsorption to the bed media. Under aerobic conditions, microorganisms naturally present in the bed oxidize the organic contaminant gases within the bed to carbon dioxide, water, and additional biomass through metabolic processes. If the temperature of the waste gas stream is too high, the gas stream must be cooled to an optimum temperature before it can be treated in the biofilter in order to maintain the viability of the microorganisms. In addition, the bed must be monitored and maintained at an optimum moisture content and pH in order to prevent cracking of the bed media and to maintain the viability of the microorganisms. Based on information reviewed for this BACT determination, a biofilter is infeasible because the high temperature exhaust stream from the baking process inhibits microbiological activities.

(e) Carbon Adsorption Unit:

Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Carbon adsorption systems can operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the

VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air in order to desorb the absorbate (VOC vapors) from the adsorbent and the adsorbate and regenerated absorbent can be recovered for reuse or disposal. Non-regenerative systems require the removal of the spent adsorbent and replacement with fresh adsorbent. Based on the information reviewed for this BACT determination, the use of carbon adsorption is infeasible because fats and oils in the baking process exhaust clog carbon pores and ethanol is difficult to strip from the carbon.

(6) Condensation Unit:

Condensation is the process by which the temperature of the waste gas stream is lowered to below the dew points of the contaminants gases in waste gas. A refrigeration condenser normally provides a VOC control efficiency greater than 90%. Based on the information reviewed for this BACT determination, the condensation method is infeasible because of the high air flows, temperatures, and moisture content in the baking process exhaust. In addition, the fats and oils contained in the exhaust reduce the control efficiency and create sanitation concerns.

Step Two: Eliminate Technically Infeasible Control Options

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of carbon adsorption and condensation are not technically feasible options for this source for the following reasons:

(a) Based on the information reviewed for this BACT determination, the use of carbon adsorption is infeasible because fats and oils in the bakery oven exhaust clog carbon pores. In addition, the ethanol is difficult to strip from the carbon.

(b) Based on the information reviewed for this BACT determination, the condensation method is infeasible because of the low VOC concentrations and high air flows, temperatures, and moisture content in the bakery oven exhaust. In addition, the fats and oils contained in the exhaust reduce the control efficiency and create sanitation concerns.

(c) Based on the information reviewed for this BACT determination, the use of a biofiltration system is infeasible because the high temperature exhaust stream from the baking ovens would inhibit microbiological activities. The outlet temperature of the ovens would exceed those in the required temperature range for mesophilic bacteria (nominally less than 106° F) and would kill off the microbes. Additionally, during the periods that the oven is shut-down for normal cleaning operations, the biofiltration system would have to be artificially fed in order to maintain system acclimation.

The following table summarizes other BACT determinations at similar sources or for similar processes that were identified in the EPA's RACT/BACT/LAER Clearinghouse (RBLC) under Process Type Code 70.550 (Bakeries and Snack Food), as well as IDEM, OAQ permits issued to date:

Company/ Location	Year Issued	Process Description	Control Device	BACT Emission Limits/Requirements	Reference
Harlan Bakeries, Inc. Avon, IN	2008	Bakery Oven	Catalytic Oxidizer	VOC emissions from the bagel oven shall be controlled by a catalytic oxidizer. Overall VOC efficiency of the catalytic oxidizer shall be 95%, or the VOC outlet concentration shall not exceed 10 ppmv. VOC emissions shall not exceed 0.36 lbs/hr.	Indiana Minor Source Operating Permit M063-24103-00059
Allen Foods, Inc. Elkhart, IN	2006	Bakery Oven	Catalytic Oxidizer	VOC emissions from the bread oven shall be controlled by a catalytic oxidizer. Overall VOC efficiency of the catalytic oxidizer shall be 95%, or the VOC outlet concentration shall not exceed 10 ppmv. VOC emissions shall not exceed 2.29 lbs/hr.	Indiana Federally Enforceable State Operating Permit F039-22633-00643
Holsum of Fort Wayne, Inc. Fort Wayne, IN	2005	Bakery Oven	None	VOC emission shall be limited to 60 tons per twelve (12) consecutive month period	Indiana Part 70 Significant Source Modification SSM 091-27352-00106
The Kroger Company - Indianapolis Bakery Indianapolis, IN	2003	Bakery Oven and Chain Lubricant	None	VOC emissions shall not exceed 49.0 tons per thirteen (13) consecutive twenty-eight (28) day period.	Indiana Federally Enforceable State Operating Permit Significant Permit Revision F097-16909-00161
Maple Leaf Bakery CA	1998	Bakery Oven	Catalytic Oxidizer	92 % Destruction Removal Efficiency Minimal 600°F Operating Temperature	RBLC ID: CA-0854 Permit No.: 0473-170
Freund Baking Company CA	1997	Bakery Oven	Catalytic Oxidizer	95.4 % Destruction Removal Efficiency	RBLC ID: CA-0859 Permit No.: 328570
Interstate Brands Corporation Indianapolis, IN	1997	Combined Bakery Ovens and Chain Lubricant	None	VOC emissions shall not exceed 95 tons per thirteen (13) consecutive twenty-eight (28) day period.	Indiana Federally Enforceable State Operating Permit F097-7413-00171
Holsum Bakery, Inc. AZ	1996	Bakery Oven	Quencher / Scrubber	81 % Control Efficiency 49.9 tons per year	RBLC ID: AZ-0029 Permit No.: 95-0432
KBI, Inc. Morristown, IN	1996	Dough Mixing, Fermentation, and Baking Area	None	VOC emissions shall not exceed a total of 99.9 tons per twelve (12) consecutive month period	Indiana Federally Enforceable State Operating Permit F145-15375-00037
Certified Grocers of California, Ltd CA	1990	Bakery Oven	Catalytic Afterburner	95% Control Efficiency	RBLC ID: CA-0468 Permit Nos.: 228274, 219899
Automatic Rolls of Virginia, Inc. VA	1988	Bakery Oven	None	13.80 pounds per hour 23.00 tons per year	RBLC ID: VA-0110 Permit No.: (7)40761

Step Three: Rank Remaining Control Technologies by Control Effectiveness

The remaining technically feasible options for controlling VOC emissions from the existing bread baking operation are as follows (listed in descending order of most technically feasible):

Options for VOC Control	Control Efficiency (%)
Catalytic Oxidizer	95%
Thermal Oxidizer	95%
Wet Packed Bed Scrubber	95%

IDEM is aware that that the above control technologies may be able to periodically achieve control efficiencies that exceed 95% under certain operating conditions. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that greater than 95% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Step Four: Evaluate Top Control Alternatives

Further evaluation including economic, energy and environmental impacts are required for controlling VOC emissions from the bread baking line. Annualized costs were determined in accordance with the EPA guidance (EPA's Office of Air Quality Planning and Standards Control Cost Manual), with other relevant information provided by the respective equipment vendors, inputs from plant personnel, and engineering judgment.

The costs associated with installing a thermal oxidizer were not evaluated since the cost of the technology is significantly higher than that of a catalytic oxidizer, which achieves the same level of control.

The costs associated with installing a wet packed bed scrubber were not evaluated since the cost associated with the increased water usage for the control device make the cost of operating the control significantly higher than that of a catalytic oxidizer, which achieves the same level of control.

The source proposed three possibilities for controlling potential VOC emissions from the bread baking lines:

1) The first option evaluated was to control the VOC emissions from each of the bread lines (proof box and oven). This option would include the installation of a clean room surrounding the proof boxes as well as the conveyor system between the proof boxes and the ovens. Additional air handlers would be required to direct airflow to a catalytic oxidizer which would be installed after the bakery ovens.

2) The second option evaluated was to control VOC emissions from the proof boxes. This option would include the installation of clean rooms surrounding the proof boxes as well as the conveyor systems between the proof boxes and the ovens. Additional air handlers would be required to direct airflow to a free standing catalytic oxidizer.

3) The third option evaluated was to control the VOC emissions from the bakery ovens. This option would include the installation of a catalytic oxidizer to control emissions from only the bakery ovens.

Pursuant to Section IV.D.2.c of EPA's BACT Guidance Document, costs that are within the range of normal costs for a control method may be reviewed in comparison to similar sources. This comparison may allow for the elimination of a technologically- and otherwise economically-feasible control option, provided that the costs of pollutant removal for the subject source are unduly high when compared to the costs borne by sources in recent BACT determinations.

The technologically-feasible options for controlling VOC emissions from the bakery lines and the costs estimated for Alpha Baking Co., Inc. - LaPorte to purchase and operate each control method are summarized in Appendix C. The cost effectiveness for similar controls at similar facilities are not available for comparison for the proof boxes because there are currently no sources within the United States or any other country where control devices have been known to be implemented for VOC control of proof boxes. The costs for installing and operating control devices to control emissions from only the oven are comparable with previously performed Best Available Control Technology (BACT) determinations.

Bakery Line	**Cost for Controlling VOCs from Entire Line (Proof Box* & Oven)**	**Cost for Controlling VOCs from Proof Box* Only**	**Cost for Controlling VOCs from Oven Only**
	($ / Ton Removed)	**($ / Ton Removed)**	**($ / Ton Removed)**
Line #1	$3,402	$85,244	$921
Line #2	$3,034	$32,827	$963
Line #4	$7,258	$86,978	$2,442

Note:
*Costs associated with controlling proof boxes are theoretical. These types of facilities have never been required to control VOC emissions.

Line 1:

The cost associated with controlling the combined 307.96 tons of VOC emitted from both the #1 Oven and the #1 Proof Box has been determined to be $3,402 per ton of VOC removed.

The cost associated with controlling the 295.67 tons of VOC emitted from the #1 Oven is $921 per ton of VOC removed.

The additional cost associated with controlling the 12.29 tons of VOC emitted from the #1 Proof Box is $63,088 per ton of VOC removed. This is equivalent to $775,353 per year to control the emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$1,047,651 (TAC for controlling proof box & oven) - $272,298 (TAC for controlling oven only) = $775,353

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$775{,}353 \text{ (additional cost for controlling proof box)}}{12.29 \text{ (tons VOC emitted from proof box)}} = \$63{,}088 \text{ (additional cost per ton VOC removed)}$$

In order to control the 12.29 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 24.53 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.02	0.09	0.09	0.07	0.01	1.03	1.23	0.02	1471.74

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the #1 Proof Box would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $921 per ton emitted from the #1 Oven to $63,088 for each ton emitted from the #1 Proof Box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety-six and one one-hundredth (96.01) percent of the emissions from Line 1 are being emitted from the bakery oven stack compared to the three and ninety-nine one hundredths (3.99) percent that is emitted from the proof box.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control emissions from the bakery oven, to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Line 2

The cost associated with controlling the combined 228.24 tons of VOC emitted from both the #2 Oven and the #2 Proof Box has been determined to be $3,034 per ton of VOC removed.

The cost associated with controlling the 207.14 tons of VOC emitted from the #2 Oven is $963 per ton of VOC removed.

The additional cost associated with controlling the 21.10 tons of VOC emitted from the #2 Proof Box is $23,375 per ton of VOC removed. This is equivalent to $493,125 per year to control the emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$692,510 (TAC for controlling proof box & oven) - $199,385 (TAC for controlling oven only) = $493,125

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$493{,}125 \text{ (additional cost for controlling proof box)}}{21.10 \text{ (tons VOC emitted from proof box)}} = \$23{,}375 \text{ (additional cost per ton VOC removed)}$$

In order to control the 21.10 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 15.77 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.01	0.06	0.06	0.04	negl.	0.66	0.79	0.02	951.84

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the #2 Proof Box would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $963 per ton emitted from the #2 Oven to $23,375 for each ton emitted from the #2 Proof Box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety and seventy-six one-hundredths (90.76) percent of the emissions from Line 2 are being emitted from the bakery oven stack compared to the nine and twenty-four one-hundredths (9.24) percent that is emitted from the proof box.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control

emissions from the bakery oven, to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Line 4

The cost associated with controlling the combined 101.14 tons of VOC emitted from both the #4 Oven and the #4 Proof Box has been determined to be $7,258 per ton of VOC removed.

The cost associated with controlling the 92.70 tons of VOC emitted from the #4 Oven is $2,442 per ton of VOC removed.

The additional cost associated with controlling the 8.44 tons of VOC emitted from the #4 Proof Box is $60,156 per ton of VOC removed. This is equivalent to $507,719 per year to control emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$734,095 (TAC for controlling proof box & oven) - $226,376 (TAC for controlling oven only) = $507,719

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$507{,}719 \text{ (additional cost for controlling proof box)}}{8.44 \text{ (tons VOC emitted from proof box)}} = \$60{,}156 \text{ (additional cost per ton VOC removed)}$$

In order to control the 8.44 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 15.77 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.01	0.06	0.06	0.04	negl.	0.66	0.79	0.02	951.84

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the #4 Proof Box would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $2,442 per ton emitted from the #4 Oven to $60,156 for each ton emitted from the #4 Proof Box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety-one and sixty-six one-hundredths (91.66) percent of the emissions from Line 4 are being emitted from the bakery oven stack compared to the eight and thirty-four one-hundredths (8.34) percent that is emitted from the proof box.

The cost for controlling one ton of VOC from Line 4 (proof box and oven) is $7,258 which is economically infeasible.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control emissions from the bakery oven, to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Step Five: Select BACT

IDEM, OAQ has determined that the following requirements represent BACT for the existing bread baking operations at the source:

Baking Ovens

(a) The VOC emissions from the #1 Oven, #2 Oven, and #4 Oven shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

Proof Boxes

(a) The source shall operate the #1 Proof Box, #2 Proof Box, and #4 Proof Box, in accordance the manufacturer's design and operating specifications.

(b) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #1 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Remove all bun pans;
(C) Scrape dough from conveyor, grids, and supports;
(D) Scrape all dough from floor;
(E) Sweep proof box floor;
(F) Wet entire floor with cleaning solvent mixture and then rinse;
(G) Scrape dough from bun pans;
(H) Put bun pans on proper pan car;

(2) Four (4) Week Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Remove all bun pans;
(C) Scrape dough from conveyor, grids, and supports;
(D) Scrape all dough from floor;
(E) Sweep proof box floor;
(F) Wet entire floor with cleaning solvent mixture and then rinse;
(G) Scrape dough from bun pans;
(H) Rinse exterior of box with water;
(I) Foam with cleaning solvent, let stand fifteen (15) minutes and rinse with water;
(J) Wet mop floor;
(K) Return ingredients to proper location;

(3) Thirteen (13) Week Cleaning Procedure:

(A) Vacuum sides and top of proof box.

(c) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #2 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;

(2) Four (4) Week Cleaning Procedure

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;
(E) Rinse exterior of box with water;
(F) Foam cleaning solvent, let stand fifteen (15) minutes and rinse with water;
(G) Wet mop floor;
(H) Return ingredients to proper location;

(3) Thirteen (13) Week Cleaning Procedure:

(A) Vacuum sides and top of proof box.

(d) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the #4 Proof Box, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Scrape and sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;

(2) Four (4) Week Cleaning Procedure

(A) Remove all raw ingredients and/or product containers from seeder area;
(B) Scrape dough from racks and supports;
(C) Scrape and sweep proof box floor;
(D) Wet entire floor with cleaning solvent mixture and then rinse;
(E) Rinse exterior of box with water;
(F) Foam with cleaning solvent, let stand fifteen (15) minutes and rinse with water;
(G) Wet mop floor;
(H) Return ingredients to proper location;

(3) Twenty-six (26) Week Cleaning Procedure

(A) Vacuum sides and top of proof box.

Compliance with the above limits and conditions will satisfy the requirements of 326 IAC 8-1-6 (BACT).

IDEM Contact

Questions regarding this BACT Analysis can be directed to Jason R. Krawczyk at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5174 or toll free at 1-800-451-6027 extension 4-5174.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Federally Enforceable State Operating Permit (FESOP)

Source Description and Location

Source Name:	**Alpha Baking Co., Inc.**
Source Location:	**360 N. Fail Road, LaPorte, Indiana 46350**
County:	**LaPorte**
SIC Code:	**2051**
Operation Permit No.:	**F091-28222-00135**
Permit Reviewer:	**Jason R. Krawczyk**

On July 10, 2009, the Office of Air Quality (OAQ) received an application from Alpha Baking Co., Inc. related to the construction and operation of an existing wholesale bread baking operation. On August 26, 2009, the OAQ received an application from Alpha Baking Co., Inc. related to the replacement of one baking oven with a new baking oven of the same maximum baking capacity and maximum heat input. The two applications have been combined into New Source Construction and FESOP F091-28222-00135.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in LaPorte County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Attainment effective July 19, 2007, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.

[1]Unclassifiable or attainment effective November 15, 1990, for the 1-hour standard which was revoked effective June 15, 2005.
Unclassifiable or attainment effective April 5, 2005, for PM2.5.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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. LaPorte 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.

(b) PM2.5
LaPorte County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements.

The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants
LaPorte County has been classified as attainment or unclassifiable in Indiana for all regulated criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unpermitted Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed the applications, submitted by Alpha Baking Co., Inc. on July 10, 2009 and August 26, 2009, relating to construction and operation of an existing, unpermitted wholesale bread baking operation.

The source consists of the following unpermitted emission units:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of 3.50 MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

(2) One (1) bread baking line, identified as Line 2, constructed in 1990, permitted in 2011, with a maximum production capacity of 6,930 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #2 Oven, with a maximum heat input capacity of 5.50 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #2 Proof Box.

(3) One (1) baking line, identified as Line 4, constructed in 2005, permitted in 2011, with a maximum production capacity of 4,331 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #4 Oven, with a maximum heat input capacity of 4.00 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #4 Proof Box.

(b) One (1) baking line, identified as Line 3, constructed in 1996, permitted in 2011, with a maximum production capacity of 3,465 lbs per hour, exhausting to stack ES10, and consisting of:

(1) One (1) natural gas direct-fired oven, identified as #3 Oven, with a maximum heat input capacity of 1.60 MMBtu/hr, exhausting to stack CS11; and

(2) One (1) proof box, identified as #3 Proof Box.

(c) One (1) dry ingredient storage and conveyance system, permitted in 2011, including, but not limited to, pneumatic conveyance process equipment and piping associated with the transfer of dry ingredients to and within the facility, storage silos, use bins, weigh scale hoppers, ingredient mixers, transfer equipment, other process equipment and piping, and associated pollution control equipment, with a maximum capacity of 19,500 pounds of dry ingredients per hour. The pneumatic conveyance system includes the following emission units:

(1) One (1) railcar pneumatic conveyance system, identified as emission unit P1, containing one (1) baghouse for control of particulate matter, and exhausting within the building;

(2) Six (6) dry ingredient storage silos, identified as emission units P2 through P7, installed in 1973, each with a maximum storage capacity of 200,000 lbs, P2 - P6 each containing one (1) filter unit and all passing through one (1) common baghouse for control of particulate matter from patent and rye flours, exhausting to atmosphere. P7 equipped with one (1) baghouse for the control of particulate matter from wheat flour, exhausting within the building;

(3) Three (3) dry ingredient storage silos, identified as emission units P8 through P10 installed in 1996, each with a maximum storage capacity of 90,000 lbs, equipped with one (1) baghouse servicing all 3 silos for control of particulate matter, and exhausting to the atmosphere;

(4) Three (3) dry ingredient use bins, identified as emission units P11 through P13, installed in 1973, each with a maximum storage capacity of 5,000 pounds of dry ingredients, each equipped with one (1) baghouse unit for control of particulate matter, and each exhausting to the atmosphere;

(5) One (1) dry ingredient use bin, identified as emission unit P14, installed in 1973, with a maximum storage capacity of 10,000 pounds of dusting flour, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building;

(6) One (1) dry ingredient use bin, identified as emission unit P15, installed in 1973, with a maximum storage capacity of 1,500 pounds of dusting flour, equipped with one (1) filter unit for control of particulate matter, and exhausting to the atmosphere;

(7) Two (2) bun scale hoppers, identified as emission units P16 and P17, installed in 1973, each with a maximum storage capacity of 2,000 pounds of dry ingredients, each equipped with one (1) filter unit for control of particulate matter emissions, and each exhausting within the building;

(8) Three (3) bread scale hoppers, identified as emission units P18 through P20, installed in 1973, each with a maximum storage capacity of 2,000 pounds of dry ingredients, each equipped with one (1) filter unit for control of particulate matter, and each exhausting within the building;

(9) One (1) bread/roll hopper, identified as emission units P21, installed in 1996, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building; and

(10) One (1) dry ingredient hopper, identified as emission unit P22, installed in 2005, equipped with one (1) filter unit for control of particulate matter, and exhausting within the building.

Insignificant activities consisting of the following:

(a) Natural gas-fired combustion sources with heat input equal to or less than 10 MMBtu per hour:

(1) One (1) natural gas-fired boiler, identified as Boiler #1, constructed in 1988, permitted in 2011, with a maximum heat capacity of 5.1 MMBtu per hour, and exhausting to one (1) stack identified as CS 1.

(2) One (1) natural gas-fired boiler, identified as Boiler #2, constructed in 1988, permitted in 2011, with a maximum heat capacity of 5.1 MMBtu per hour, and exhausting to one (1) stack identified as CS 2.

(3) Four (4) natural gas-fired comfort space heaters, identified as Heater 1 through Heater 4, all constructed in 1996, permitted in 2011, with maximum heat input capacities of 0.3 MMBtu per hour, each, and exhausting to stacks CS 17, CS 18, CS 19, and CS 20, respectively.

(b) Any unit, not regulated by a NESHAP, emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP:

(1) Four (4) inkjet printers, printing the date and product code on each product package.

(c) Paved and unpaved roadways and parking lots.

Enforcement Issues

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction and operation permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – FESOP

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	536.59
PM10[(1)]	188.77
PM2.5	188.77
SO_2	0.07
NO_x	11.39
VOC	704.18
CO	9.57

(1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

HAPs	Potential To Emit (tons/year)
Acetaldehyde	21.09
Hexane	0.21
Methanol	0.02
All other HAPS	0.01
TOTAL HAPs	**21.33**

(a) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of VOC, PM10, and PM2.5 is greater than one hundred (100) tons per year. The PTE of all other regulated criteria pollutants are less than one hundred (100) tons per year. The source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a New Source Construction Permit (326 IAC 2-5.1-3) and a Federally Enforceable State Operating Permit (FESOP) (326 IAC 2-8), because the source will limit emissions to less than the Title V major source threshold levels.

(b) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year. Therefore, the source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a New Source Construction Permit (326 IAC 2-5.1-3) and a FESOP (326 IAC 2-8), because the source will limit emissions of HAPs to less than the Title V major source threshold levels.

PTE of the Entire Source After Issuance of the FESOP

The table below summarizes the potential to emit of the entire source after issuance of this FESOP, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	**Potential To Emit of the Entire Source After Issuance of FESOP (tons/year)**								
	PM	PM10	PM2.5	SO_2	NOx	VOC [A,B]	CO	Total HAPs	Worst Single HAP[C]
Bread Baking Line 1									
Nat. Gas Combustion	0.03	0.12	0.12	0.01	1.53	B	1.29	0.03	0.01 Hexane
#1 Oven	-	-	-	-	-	29.83	-	6.66	6.66 Acetaldehyde
Proof Box 1	-	-	-	-	-	12.29	-	0.37	0.37 Acetaldehyde
Bread Baking Line 2									
Nat. Gas Combustion	0.05	0.18	0.18	0.01	2.41	0.13	2.02	0.05	0.04 Hexane
#2 Oven	-	-	-	-	-	A	-	E	C
Proof Box 2	-	-	-	-	-	21.10	-	0.63	0.63 Acetaldehyde
Bread Baking Line 4									
Nat. Gas Combustion	0.03	0.13	0.13	0.01	1.75	0.10	1.47	0.03	0.03 Hexane
#4 Oven	-	-	-	-	-	A	-	E	C
Proof Box 4	-	-	-	-	-	8.44	-	0.25	0.25 Acetaldehyde
Bread Baking Line 3									
Nat. Gas Combustion	0.01	0.05	0.05	negl.	0.70	0.04	0.59	0.01	0.01 Hexane
#3 Oven [D]	-	-	-	-	-	18.18	-	1.77	1.77 Acetaldehyde

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of FESOP (tons/year)								
	PM	PM10	PM2.5	SO_2	NOx	VOC [A,B]	CO	Total HAPs	Worst Single HAP[C]
Proof Box 3	-	-	-	-	-	6.68	-	0.20	0.20 Acetaldehyde
Miscellaneous Nat. Gas Combustion	0.09	0.38	0.38	0.03	4.99	0.27	4.19	0.09	0.09 Hexane
Ingredient Storage & Handling	53.64	18.79	18.79	-	-	-	-	-	-
Inkjet Printers	-	-	-	-	-	0.63	-	0.02	0.02 Methanol
Paved Roadways*	0.31	0.06	0.02	-	-	-	-	-	-
Unpaved Roadways*	2.93	0.75	0.75	-	-	-	-	-	-
Total PTE of Entire Source	**53.85**	**19.66**	**19.66**	**0.07**	**11.39**	**97.70**	**9.57**	**10.12**	**9.88 Acetaldehyde**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA

negl. = negligible
* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

*Fugitive PM, PM10, PM2.5, and VOC are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

A- Combined VOC emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX shall be limited to 6.81 lbs/hr.
B- Natural Gas Combustion emissions from the #1 Oven are included in the combined VOC limit for the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX. The #2 Oven and #4 Oven combustion emissions are exhausted through separate stacks.
C- Combined Acetaldehyde emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX, shall be limited to 1.52 lbs/hr.
D- Potential VOC emissions from the #3 Oven shall not exceed 18.18 tons per twelve consecutive month period. This limit combined with the potential to emit from all other emissions units in Line 3, shall limit potential emissions from Line 3 to less than 24.90 tons per twelve consecutive month period and make the requirements of 326 IAC 8-1-6 not applicable.
E- The only known HAP emitted from the bakery ovens and proof boxes is Acetaldehyde. Since Acetaldehyde is limited to 1.52 lbs/hr, the potential to emit Combined HAPs from the bakery oven and proof boxes is assumed to be equal to 1.52 lbs/hr.

(a) FESOP Status, Prevention of Significant Deterioration (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) Applicability
This existing source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will be limited to less than the Title V major source threshold levels. In addition, this existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

(1) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)), the source shall comply with the following:

(A) PM10 and PM2.5

The dry ingredient storage and conveying emission units shall be limited as follows:

Emission Unit Type	Total Dry Ingredient Throughput Limit (tons/yr)*	PM10 Limit (lbs/ton)	PM2.5 Limit (lbs/ton)
One (1) Railcar Pneumatic Conveyance System (P1)	85,410	0.110	0.110
Six (6) Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	85,410	0.110	0.110
Three (3) Dry Ingredient Storage Silos (P8, P9, P10)			
Three (3) Dry Ingredient Use Bins (P11, P12, P13)	85,410	0.110	0.110
One (1) Dry Ingredient Use Bin (P14)			
One (1) Dry Ingredient Use Bin (P15)			
Two (2) Bun Scale Hoppers (P16, P17)	85,410	0.110	0.110
Three (3) Bread Scale Hoppers (P18, P19, P20)			
One (1) Bread/Roll Hopper (P21)			
One (1) Dry Ingredient Hopper (P22)			

* Total dry ingredient throughput limit in tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(B) VOC

(i) The combined VOC emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common Catalytic Oxidizer stack (CAT-OX) shall not exceed 6.81 pounds per hour.

(ii) The VOC emissions from the #3 Oven shall not exceed 18.18 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(C) HAP

(i) The combined Acetaldehyde emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common Catalytic Oxidizer stack (CAT-OX) shall not exceed 1.52 pounds per hour.

(ii) The overall Acetaldehyde control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 63%.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, VOC and HAP from all other emission units, shall limit the PM10, PM2.5, and VOC emissions from the entire source to less than one hundred (100) tons per year, each, shall limit the HAP emissions from the entire source to less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for any combination of HAPs, and shall render the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not

applicable.

(2) In order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the source shall comply with the following:

(A) PM

The dry ingredient storage and conveying emission units shall be limited as follows:

Emission Unit Type	Total Dry Ingredient Throughput Limit (tons/yr)*	PM Limit (lbs/ton)
One (1) Railcar Pneumatic Conveyance System (P1)	85,410	0.314
Six (6) Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	85,410	0.314
Three (3) Dry Ingredient Storage Silos (P8, P9, P10)		
Three (3) Dry Ingredient Use Bins (P11, P12, P13)	85,410	0.314
One (1) Dry Ingredient Use Bin (P14)		
One (1) Dry Ingredient Use Bin (P15)		
Two (2) Bun Scale Hoppers (P16, P17)	85,410	0.314
Three (3) Bread Scale Hoppers (P18, P19, P20)		
One (1) Bread/Roll Hopper (P21)		
One (1) Dry Ingredient Hopper (P22)		

* Total dry ingredient throughput limit in tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(B) VOC

(i) The combined VOC emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common Catalytic Oxidizer stack (CAT-OX) shall not exceed 6.81 pounds per hour.

(ii) The VOC emissions from the #3 Oven shall not exceed 18.18 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit PM and VOC from all other emission units, shall limit the PM and VOC emissions from the entire source to less than 250 tons per year, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable.

(b) PSD Minor Source
This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit PM and VOC is limited to less than 250 tons per year, each, and the potential to emit all other attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) The requirements of the New Source Performance Standard for Small Industrial-Commercial-

Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, since the natural gas-fired boilers have maximum heat capacities less than 10 MMBtu per hour, each.

(b) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63.11193, Subpart JJJJJJ, are not included in the permit because #1 Boiler and #2 Boiler are gas-fired boilers, as defined by 40 CFR 63.11237, and are specifically exempted under 40 CFR 63.11195(e).

(d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

(e) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

(a) 326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

(b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

(c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit of HAPs from the existing bread lines (Line 1 through Line 4) is greater than ten (10) tons per year for any single HAP. The estimated actual emissions from the source have never exceeded ten (10) tons per year for any single HAP or the twenty-five (25) tons per year for combined HAPs based on the assumption that VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP). The source shall limit the potential to emit of HAPs from the existing unpermitted units to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the source will not be subject to the requirements of 326 IAC 2-4.1. See PTE of the Entire Source After Issuance of the FESOP Section above.

Note:
The assumption that VOC emitted during fermentation is assumed to be 97% ethanol and 3% acetaldehyde is based on the following documents and supporting information:

1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

(d) 326 IAC 2-6 (Emission Reporting)
Since this source is located in LaPorte County, and has actual emissions of VOC greater than or

equal to twenty-five (25) tons per year, an emission statement covering the previous calendar year must be submitted by July 1 of each year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

(e) 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 this permit:

(1) 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.

(2) 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.

(f) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

(g) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5, because there are no fugitive particulate emissions greater than 25 tons per year.

(h) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

(i) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

<u>Bread Baking Operations (Line 1, Line 2, and Line 4)</u>

(j) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
The unlimited VOC potential emissions from each of the bread baking operations (Line 1, Line 2, and Line 4) are greater than twenty-five (25) tons per year. Therefore, the bread baking operations are subject to 326 IAC 8-1-6 and the applicant is required to control VOC emissions from Line 1, Line 2, and Line 4 using the Best Available Control Technology (BACT). According to the BACT analysis contained in Appendix B, IDEM has determined that:

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the Permittee shall control VOC emissions from the bread baking operations using the Best Available Control Technology (BACT), which has been determined to be the following:

(1) The VOC emissions from the #1 Oven, #2 Oven, and #4 Oven shall be controlled by a catalytic oxidizer.

(2) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

(3) The source shall operate #1 Proof Box, #2 Proof Box, and #4 Proof Box, in accordance the manufacturer's design and operating specifications.

(4) The source shall perform the following proof box cleaning operations for the #1 Proof Box,

in order to ensure proper operation and to minimize potential emissions:

(A) Weekly Cleaning Procedure:

(i) Lock out equipment;
(ii) Remove all raw ingredients and/or product containers from seeder area;
(iii) Remove all bun pans;
(iv) Using long handle extension, scrape dough from conveyor, grids, and supports;
(v) Start from center and scrape all dough from floor;
(vi) Sweep proof box floor from center out. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(vii) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(viii) Scrape dough from bun pans and put into blue metal cart;
(ix) Put bun pans on proper pan car;
(x) Empty and clean blue metal cart. Put cart in proper location; and
(xi) Remove lock out and turn power on.

(B) Four (4) Week Cleaning Procedure:

(i) Lock out equipment;
(ii) Remove all raw ingredients and/or product containers from seeder area;
(iii) Remove all bun pans;
(iv) Using long handle extension, scrape dough from conveyor, grids, and supports;
(v) Start from center and scrape all dough from floor;
(vi) Sweep proof box floor from center out. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(vii) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(viii) Scrape dough from bun pans and put into blue metal cart;
(ix) Put bun pans on proper pan cart;
(x) Rinse exterior of box with water;
(xi) Foam with F 204, let stand fifteen (15) minutes and rinse with water;
(xii) Wet mop floor;
(xiii) Return ingredients to proper location;
(xiv) Empty and clean blue metal cart. Put cart in proper location; and
(xv) Remove Lock out and turn power on.

(C) Thirteen (13) Week Cleaning Procedure:

(i) Using extension ladder, climb on top of the east side for the proof box;
(ii) Secure safety harness;
(iii) Vacuum;
(iv) Move equipment and repeat procedure to remaining sides of proof box. Use long extensions to vacuum top of box;
(v) Empty and clean vacuum; and
(vi) Put all equipment away in proper locations.

(5) The source shall perform the following proof box cleaning operations, for the #2 Proof Box, in order to ensure proper operation and to minimize potential emissions:

(A) Weekly Cleaning Procedure:

(i) Lock out equipment;

(ii) Remove all raw ingredients and/or product containers from seeder area;
(iii) Using long handle extension, scrape dough from racks and supports;
(iv) Sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(v) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(vi) Empty and clean blue metal cart. Put cart in proper location; and
(vii) Remove lock out and turn power on.

(B) Four (4) Week Cleaning Procedure

(i) Lock out equipment;
(ii) Remove all raw ingredients and/or product containers from seeder area;
(iii) Using long handle extension, scrape dough from racks and supports;
(iv) Sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(v) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(vi) Rinse exterior of box with water;
(vii) Foam with F 204, let stand fifteen (15) minutes and rinse with water;
(viii) Wet mop floor;
(ix) Return ingredients to proper location;
(x) Empty and clean blue metal cart. Put cart in proper location; and
(xi) Remove lock out and turn power on.

(C) Thirteen (13) Week Cleaning Procedure:

(i) Using extension ladder, climb on top of the proof box;
(ii) Secure safety harness;
(iii) Vacuum;
(iv) Empty and clean vacuum; and
(v) Put all equipment away in proper locations.

(6) The source shall perform the following proof box cleaning operations for the #4 Proof Box, in order to ensure proper operation and to minimize potential emissions:

(A) Weekly Cleaning Procedure:

(i) Lock out equipment;
(ii) Remove all raw ingredients and/or product containers from seeder area;
(iii) Using long handle extension, scrape dough from racks and supports;
(iv) Scrape and sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(v) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(vi) Empty and clean blue metal cart. Put cart in proper location; and
(vii) Remove lock out and turn power on.

(B) Four (4) Week Cleaning Procedure

(i) Lock out equipment;
(ii) Remove all raw ingredients and/or product containers from seeder area;
(iii) Using long handle extension, scrape dough from racks and supports;
(iv) Scrape and sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;

(v) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(vi) Rinse exterior of box with water;
(vii) Foam with F 204, let stand fifteen (15) minutes and rinse with water;
(viii) Wet mop floor;
(ix) Return ingredients to proper location;
(x) Empty and clean blue metal cart. Put cart in proper location; and
(xi) Remove loc out and turn power on.

(C) Twenty-six (26) Week Cleaning Procedure

(i) Using extension ladder, climb on top of the proof box;
(ii) Secure safety harness;
(iii) Vacuum;
(iv) Empty and clean vacuum; and
(v) Put all equipment away in proper locations.

(k) 326 IAC 2-8-5(a)(3) Compliance Schedule

(1) Within thirty (30) days of the effective date of this permit F091-28222-00135, the Permittee shall issue a purchase order for VOC emission controls required by the permit in order to comply with 326 IAC 8-1-6 BACT for the bun baking line, identified as Line 1, the bread baking line, identified as Line 2, and the baking line, identified as Line 4.

(2) The VOC emission control for the baking lines (Line 1, Line 2, and Line 4) shall be installed and operated as soon as possible, but in no event, more than nine (9) months after the effective date of this permit.

(3) The Permittee shall provide a status report to IDEM, OAQ on the 15th of each month to include an update of the project required in (a) and (b) including and until the date the project is complete. The status report shall be addressed to Lynne Sullivan, Compliance and Enforcement Manager, and submitted to the address in Section C - General Reporting Requirements of the permit.

(l) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The bread baking ovens are not considered sources of indirect heating. Therefore, 326 IAC 6-2 does not apply.

(m) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Sources)
Pursuant to 326 IAC 6-3-1(b)(14), the bread baking lines (Line 1, Line 2, and Line 4), are exempt from the requirements of 326 IAC 6-3, because they have potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour, each.

<u>Bread Baking Operation (Line 3)</u>

(n) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
326 IAC 8-1-6 mandates that a Best Available Control Technology (BACT) analysis be performed for new facilities commencing operations after January 1, 1980 which have potential VOC emissions of 25 tons or more and are not regulated by other provisions of Article 8. The bread baking operation, identified as Line 3, has the potential to emit (PTE) VOC greater than twenty-five (25) tons per year and was constructed in 1996.

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the VOC emissions from the #3 Oven shall not exceed 18.18 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the potential to emit VOC from #3 Proof Box and the Line

3 natural gas combustion, shall limit the potential to emit of VOC to less than twenty-five (25) tons per twelve (12) consecutive month period from Line 3 and render the requirements of 326 IAC 8-1-6 not applicable.

(o) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The bread baking ovens are not considered sources of indirect heating. Therefore, 326 IAC 6-2 does not apply.

(p) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Sources)
Pursuant to 326 IAC 6-3-1(b)(14), the bread baking line (Line 3), is exempt from the requirements of 326 IAC 6-3, because it has potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

Natural Gas-Fired Boilers (Boiler #1 and Boiler #2)

(q) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The two natural gas-fired boilers, identified as Boiler #1 and Boiler #2, were both constructed in 1988 and have maximum operating capacities rated at 5.1 MMBtu/hour, each.

Pursuant to 326 IAC 6-2-4, the particulate emissions from the two boilers shall not exceed 0.60 lb/MMBtu. This emission limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

where Q = total source heat input capacity (MMBtu/hr)

For these units, Q = 10.2 MMBtu/hr.

The uncontrolled potential to emit particulate from Boiler #1 and Boiler #2 is 0.002 lb/MMBtu, each. Therefore, the boilers are able to comply with this limit without the use of controls.

Ingredient Storage & Handling

(r) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the following emission units shall not exceed the allowable emission rates as listed in the table below:

Emission Unit Type	Maximum Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)
One (1) Railcar Pneumatic Conveyance System (P1)	9.75	18.85
Six (6) Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	9.75 (each)	18.85 (each)
Three (3) Dry Ingredient Storage Silos (P8, P9, P10)		
Three (3) Dry Ingredient Use Bins (P11, P12, P13)	9.75 (each)	18.85 (each)
One (1) Dry Ingredient Use Bin (P14)		
One (1) Dry Ingredient Use Bin (P15)		
Two (2) Bun Scale Hoppers (P16, P17)	9.75 (each)	18.85 (each)
Three (3) Bread Scale Hoppers (P18, P19, P20)		

One (1) Bread/Roll Hopper (P21)		
One (1) Dry Ingredient Hopper (P22)		

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

Assuming that each of the storage silos, use bins, and hoppers could process the maximum throughput of 9.75 tons per hour, the potential particulate emissions from each of the storage silos, use bins, and hoppers would be 30.62 pounds per hour.

The filter units and baghouses associated with each of the dry ingredient storage and conveying emission units (P1 through P21) shall be in operation at all times P1 through P21 are in operation, in order to comply with this limit.

Inkjet Printers

(s) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(14), the four (4) inkjet printers are not subject to the requirements of 326 IAC 6-3-2 because particulate emissions from these units are less than five hundred fifty-one thousandths (0.551) pound her hour, each.

(t) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
The requirements of 326 IAC 8-1-6 are not applicable to the four (4) inkjet printers because each of the units, although constructed after January 1, 1980, has potential to emit VOC less than twenty-five (25) tons per year.

(u) 326 IAC 8-5-5 (Graphic Arts Operations)
The four (4) inkjet printers are not subject to the requirements of 326 IAC 8-5-5 because these units do not perform packaging rotogravure, publication rotogravure, and/or flexographic printing.

(v) There are no 326 IAC 8 Rules that are applicable to the inkjet printers.

Compliance Determination, Monitoring and Testing Requirements

(a) The compliance determination requirements applicable to this source are as follows:

Compliance with the VOC limit for Line 3 shall be determined by the following equation:

$$VOC_i = \sum_{m=1}^{12} \left[\frac{Ef * B_m}{2000 lbs / ton} \right]_m \leq 18.18 \text{ tons of VOC per twelve consecutive month period}$$

Where:

VOC_i = VOC emissions from #3 Oven (tons per 12 consecutive month period)
Ef = Emission factor (pounds of VOC per ton of baked bread);
B_m = The amount of bread produced during month m (tons/month); and
m = each calendar month.

The emission factor shall be calculated using the most recently published equation for bread baking, as listed in AP-42 Chapter 9.9.6.

(b) The compliance monitoring requirements applicable to this source are as follows:

Control ID	Parameter	Frequency	Range	Excursions and Exceedances
CAT-OX	Temperature	Continuous	3 hr avg. > 600 ° F*	Response Steps
	Duct Pressure / Fan Amperage	Daily	Normal - Abnormal	
Baghouses associated with P2 - P6 and P8 - P10	Pressure Drop	Daily	1.0 - 6.0 inches water	

* The catalytic oxidizer CAT-OX shall operate within the parameters listed in the table above from the date of startup and until the stack test results are available.

(c) The testing requirements applicable to this source are as follows:

Control ID / Stack ID	Timeframe for Testing	Pollutant(s)	Frequency of Testing
CAT-OX	No later than 60 days after installation of the catalytic oxidizer and achieving maximum capacity for the bread lines (Line 1, Line 2, and Line 4), but not later than 180 days after initial installation and start-up of the catalytic oxidizer.	VOC, Acetaldehyde	Once every five (5) years

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. Applications for the purposes of this review were received on July 10, 2009 and August 26, 2009.

The construction and operation of this source shall be subject to the conditions of the attached proposed New Source Construction and FESOP No. F091-28222-00135. The staff recommends to the Commissioner that this New Source Construction and FESOP be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Jason R. Krawczyk at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5174 or toll free at 1-800-451-6027 extension 4-5174.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) 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.idem.in.gov

SUMMARY OF EMISSIONS

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Uncontrolled / Unlimited Emissions (Tons/Yr)

Pollutant	Line #1			Line #2			Line #4			Line #3			Misc. Nat Gas	Ingredient Storage & Handling	Inkjet Printers	Paved Roadways*	Unpaved Roadways*	Total
	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas						
PM	-	-	0.03	-	-	0.05	-	-	0.03	-	-	0.01	0.09	536.37	-	0.31	2.93	536.59
PM10	-	-	0.12	-	-	0.18	-	-	0.13	-	-	0.05	0.38	187.90	-	0.06	0.75	188.77
PM2.5	-	-	0.12	-	-	0.18	-	-	0.13	-	-	0.05	0.38	187.90	-	0.02	0.75	188.77
VOC	295.67	12.29	0.08	207.14	21.10	0.13	92.70	8.44	0.10	58.91	6.68	0.04	0.27	-	0.63	-	-	704.18
NOx	-	-	1.53	-	-	2.41	-	-	1.75	-	-	0.70	4.99	-	-	-	-	11.39
SO2	-	-	0.01	-	-	0.01	-	-	0.01	-	-	0.00	0.03	-	-	-	-	0.07
CO	-	-	1.29	-	-	2.02	-	-	1.47	-	-	0.59	4.19	-	-	-	-	9.57
Single HAP (Acetaldehyde)	8.87	0.37	-	6.21	0.63	-	2.78	0.25	-	1.77	0.20	-	-	-	-	-	-	21.09
Combined HAPs	8.87	0.37	0.03	6.21	0.63	0.05	2.78	0.25	0.03	1.77	0.20	0.01	0.09	-	0.02	-	-	21.33

Controlled / Unlimited Emissions (Tons/Yr)

Pollutant	Line #1			Line #2			Line #4			Line #3			Misc. Nat Gas	Ingredient Storage & Handling	Inkjet Printers	Paved Roadways*	Unpaved Roadways*	Total
	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas						
PM	-	-	0.03	-	-	0.05	-	-	0.09	-	-	0.01	0.09	5.36	-	0.31	2.93	5.64
PM10	-	-	0.12	-	-	0.18	-	-	0.13	-	-	0.05	0.38	1.88	-	0.06	0.75	2.74
PM2.5	-	-	0.12	-	-	0.18	-	-	0.13	-	-	0.05	0.38	1.88	-	0.02	0.75	2.74
VOC	14.78	12.29	0.00	10.36	21.10	0.13	4.63	8.44	0.10	58.91	6.68	0.04	0.27	-	0.63	-	-	138.38
NOx	-	-	1.53	-	-	2.41	-	-	1.75	-	-	0.70	4.99	-	-	-	-	11.39
SO2	-	-	0.01	-	-	0.01	-	-	0.01	-	-	0.00	0.03	-	-	-	-	0.07
CO	-	-	1.29	-	-	2.02	-	-	1.47	-	-	0.59	4.19	-	-	-	-	9.57
Single HAP (Acetaldehyde)	0.44	0.37	-	0.31	0.63	-	0.14	0.25	-	1.77	0.20	-	-	-	-	-	-	4.12
Combined HAPs	0.44	0.37	0.03	0.31	0.63	0.05	0.14	0.25	0.03	1.77	0.20	0.01	0.09	-	0.02	-	-	4.35

Limited Emissions (Tons/Yr)

Pollutant	Line #1			Line #2			Line #4			Line #3			Misc. Nat Gas	Ingredient Storage & Handling	Inkjet Printers	Paved Roadways*	Unpaved Roadways*	Total
	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas	Oven	Proof Box	Nat. Gas						
PM	-	-	0.03	-	-	0.05	-	-	0.03	-	-	0.01	0.09	53.64	-	0.31	2.93	53.85
PM10	-	-	0.12	-	-	0.18	-	-	0.13	-	-	0.05	0.38	18.79	-	0.06	0.75	19.66
PM2.5	-	-	0.12	-	-	0.18	-	-	0.13	-	-	0.05	0.38	18.79	-	0.02	0.75	19.66
VOC [A,B,D]	29.83	12.29	B	A	21.10	0.13	A	8.44	0.10	18.18	6.68	0.04	0.27	-	0.63	-	-	97.70
NOx	-	-	1.53	-	-	2.41	-	-	1.75	-	-	0.70	4.99	-	-	-	-	11.39
SO2	-	-	0.01	-	-	0.01	-	-	0.01	-	-	0.004	0.03	-	-	-	-	0.07
CO	-	-	1.29	-	-	2.02	-	-	1.47	-	-	0.59	4.19	-	-	-	-	9.57
Single HAP (Acetaldehyde) [C]	6.66	0.37	-	C	0.63	-	C	0.25	-	1.77	0.20	-	-	-	-	-	-	9.88
Combined HAPs	6.66	0.37	0.03	E	0.63	0.05	E	0.25	0.03	1.77	0.20	0.01	0.09	-	0.02	-	-	10.12

Note:

In order to comply with 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the source is required to operate a catalytic oxidzer to control emissions from the #1 Oven, #2 Oven, and #3 Oven. The catalytic oxidizer shall have a destruction and removal efficiency of at least 95%.

A- Combined VOC emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX shall be limited to 6.81 lbs/hr.

B- Natural Gas Combustion emissions from the #1 Oven are included in the combined VOC limit for the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX. The #2 Oven and #4 Oven combustion emissions are exhausted through separate stacks.

C- Combined Acetaldehyde emissions from the #1 Oven, #2 Oven, and #4 Oven, exhausting through the common stack CAT-OX, shall be limited to 1.52 lbs/hr.

D- Potential VOC emissions from the #3 Oven shall not exceed 18.18 tons per twelve consecutive month period. This limit combined with the potential to emit from other emissions units in Line 3, shall limit potential emissions from Line 3 to less than 24.90 tons per twelve consecutive month period and make the requirements of 326 IAC 8-1-6 not applicable.

E- The only HAP emitted from the bakery ovens and proof boxes is Acetaldehyde. Since Acetaldehyde is limited to 1.52 lbs/hr, the potential to emit Combined HAPs from the bakery oven and proof boxes is assumed to be equal to 1.52 lbs/hr.

*Fugitive PM, PM10, PM2.5, and VOC are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Appendix A: Emissions Calculations
Line 1
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Potential Oven Emissions

		BACT Control Efficiency	95%							
Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (tons/year)	Potential VOC Emissions (tons/year)	Controlled VOC Emissions (tons/year)	Potential Acetaldehyde Emissions (tons/year)	Controlled Acetaldehyde Emissions (tons/year)
4" Butter Bun	3.80	4.30	3.10	1.30	3.65	34,146.48	62.31	3.12	1.87	0.09
4" Potato Cluster	5.70	1.40	0.00	0.00	7.59	34,146.48	129.55	6.48	3.89	0.19
4" Seeded Cluster	5.70	1.30	0.00	0.00	7.57	34,146.48	129.22	6.46	3.88	0.19
4" Seeded Loose	3.40	4.30	1.50	1.30	4.09	34,146.48	69.75	3.49	2.09	0.10
4" Wheat Cluster	6.00	1.40	0.00	0.00	7.87	34,146.48	134.42	6.72	4.03	0.20
5" Butter Buns	3.80	4.30	3.10	1.30	3.65	34,146.48	62.31	3.12	1.87	0.09
5" Seeded Loose	3.40	5.00	1.70	1.50	3.95	34,146.48	67.41	3.37	2.02	0.10
Arby Seed Kaiser	3.70	4.30	4.10	1.30	3.04	34,146.48	51.98	2.60	1.56	0.08
BBLoCarb	15.10	5.50	0.00	0.00	17.32	34,146.48	295.67	14.78	8.87	0.44
BunLoCarb	10.90	1.30	0.00	0.00	12.51	34,146.48	213.56	10.68	6.41	0.32
Hardees Kaiser	3.80	5.00	3.10	1.50	3.61	34,146.48	61.70	3.09	1.85	0.09
Split Top Corn	3.10	5.00	0.00	0.00	5.82	34,146.48	99.37	4.97	2.98	0.15
Steak Buns	3.00	4.30	1.40	1.30	3.76	34,146.48	64.14	3.21	1.92	0.10
CornDuster	3.30	4.30	3.50	1.30	2.97	34,146.48	50.72	2.54	1.52	0.08
Snowflake	3.00	4.30	0.80	1.30	4.06	34,146.48	69.36	3.47	2.08	0.10
4" Hambs	3.40	5.00	2.30	1.50	3.64	34,146.48	62.18	3.11	1.87	0.09
4.5" White Hamburger	3.40	5.10	1.50	1.50	4.07	34,146.48	69.48	3.47	2.08	0.10
5" BK Hambs	3.40	5.00	1.70	1.50	3.95	34,146.48	67.41	3.37	2.02	0.10
5" Hambs	3.40	5.00	3.20	1.50	3.18	34,146.48	54.34	2.72	1.63	0.08
BB Cluster Hambs	5.70	1.30	0.00	0.00	7.57	34,146.48	129.22	6.46	3.88	0.19
BB Seeded Cluster	5.70	1.30	0.00	0.00	7.57	34,146.48	129.22	6.46	3.88	0.19
4" White Cluster	5.70	1.40	0.00	0.00	7.59	34,146.48	129.55	6.48	3.89	0.19
4" Potato Hamburger	5.70	1.40	0.00	0.00	7.59	34,146.48	129.55	6.48	3.89	0.19
						Worst-Case Emissions:	**295.67**	**14.78**	**8.87**	**0.44**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi +0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 7796 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%
Controlled Acetaldehyde Emissions (ton/year) = Potential Acetaldehyde Emissions * (1 - control efficiency)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)

Appendix A: Emissions Calculations
Line 1
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Potential Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential VOC Emissions (Tons/Yr)**
0.72	34,146.48	**12.29**

Potential Acetaldehyde Emissions (Tons/Yr)
0.37

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
3.5

Potential Throughput (MMCF/yr)
30.7

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.03**	**0.12**	**0.01**	**1.53**	**0.08**	**1.29**

Controlled VOC Emissions (tons/year)
4.22E-03

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.219E-05	1.840E-05	1.150E-03	2.759E-02	5.212E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.665E-06	1.686E-05	2.146E-05	5.825E-06	3.219E-05
				Total HAPs:	**2.893E-02**

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Line 2
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Pit ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Oven Emissions

Product	Initial Baker's Percent of Yeast (Yi)	BACT Control Efficiency Total Yeast Action Time, in hours (ti)	95% Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (ton/year)	Potential VOC Emissions (ton/year)	Controlled VOC Emissions (ton/year)	Potential Acetaldehyde Emissions (tons/year)	Controlled Acetaldehyde Emissions (tons/year)
1# Patio French	2.00	1.70	0.00	0.00	4.13	30,353.40	62.70	3.14	1.88	0.09
12 Grain	1.80	1.30	0.00	0.00	3.86	30,353.40	58.64	2.93	1.76	0.09
1lb Toaster	3.60	4.30	1.40	1.30	4.33	30,353.40	65.66	3.28	1.97	0.10
2# 9Grain	2.00	5.00	2.70	1.90	1.76	30,353.40	26.77	1.34	0.80	0.04
2# LoCarb	7.00	5.60	0.00	0.00	9.64	30,353.40	146.33	7.32	4.39	0.22
2# SourDlx	3.10	1.30	0.00	0.00	5.10	30,353.40	77.38	3.87	2.32	0.12
2# WheDelux	2.60	5.90	1.80	1.80	3.05	30,353.40	46.36	2.32	1.39	0.07
2#WhiDelux	1.90	4.80	0.00	0.00	4.64	30,353.40	70.44	3.52	2.11	0.11
20 oz Wheat & Honey	3.20	4.80	2.70	1.60	3.12	30,353.40	47.40	2.37	1.42	0.07
20" French Bread	2.50	1.30	0.00	0.00	4.53	30,353.40	68.73	3.44	2.06	0.10
24oz Hawaiian	1.40	4.90	0.00	0.00	4.19	30,353.40	63.52	3.18	1.91	0.10
24oz Healthy Grain	1.30	5.00	1.80	1.90	1.56	30,353.40	23.65	1.18	0.71	0.04
24oz MultiGrain	1.80	1.30	0.00	0.00	3.86	30,353.40	58.64	2.93	1.76	0.09
24oz Potato	2.00	4.80	0.00	0.00	4.74	30,353.40	71.88	3.59	2.16	0.11
24oz Whole Wheat	1.40	4.80	1.00	1.70	2.19	30,353.40	33.30	1.66	1.00	0.05
24oz Black Rye Bread	2.00	1.80	2.20	1.60	1.65	30,353.40	25.09	1.25	0.75	0.04
2lb Deli Seed	2.20	1.30	0.00	0.00	4.24	30,353.40	64.40	3.22	1.93	0.10
2lb Dill Rye	2.00	4.30	2.20	1.30	2.40	30,353.40	36.40	1.82	1.09	0.05
2lb Euro Wheat	2.10	1.30	0.00	0.00	4.15	30,353.40	62.96	3.15	1.89	0.09
2lb Marble Rye	4.30	6.80	0.00	0.00	7.31	30,353.40	110.96	5.55	3.33	0.17
2lb Plain Rye	2.00	4.70	2.20	1.60	2.22	30,353.40	33.67	1.68	1.01	0.05
2lb Seeded Rye Bread	2.00	4.70	2.20	1.60	2.22	30,353.40	33.67	1.68	1.01	0.05
2lb Sour	2.80	1.30	0.00	0.00	4.81	30,353.40	73.05	3.65	2.19	0.11
3# Black Rye	3.00	4.70	2.90	1.60	2.81	30,353.40	42.67	2.13	1.28	0.06
3lb Euro Wheat	0.70	4.10	1.00	1.80	1.31	30,353.40	19.83	0.99	0.59	0.03
3lb Marble Rye	4.30	6.80	0.00	0.00	7.31	30,353.40	110.96	5.55	3.33	0.17
3lb Pan French	2.00	5.80	0.40	1.70	3.27	30,353.40	49.55	2.48	1.49	0.07
3lb Pan Plain Rye	3.00	4.70	2.90	1.60	2.81	30,353.40	42.67	2.13	1.28	0.06
3lb Seeded Rye Bread	3.00	4.70	2.90	1.60	2.81	30,353.40	42.67	2.13	1.28	0.06
97% Fat Free	1.70	6.00	1.90	1.90	2.08	30,353.40	31.60	1.58	0.95	0.05
B&S French	4.40	4.80	0.00	0.00	7.02	30,353.40	106.48	5.32	3.19	0.16
Bakers Square Black	4.50	1.90	0.00	0.00	6.55	30,353.40	99.34	4.97	2.98	0.15
Bakers Square Sour	3.90	1.90	0.00	0.00	5.98	30,353.40	90.69	4.53	2.72	0.14
BB 1lb Marble	0.90	5.00	0.00	0.00	3.73	30,353.40	56.61	2.83	1.70	0.08
BB Apple	4.70	1.30	0.00	0.00	6.62	30,353.40	100.45	5.02	3.01	0.15
BB Raisin Bread	3.50	1.30	0.00	0.00	5.48	30,353.40	83.15	4.16	2.49	0.12
BB Seeded Rye Bread	2.50	4.30	2.30	1.30	2.82	30,353.40	42.84	2.14	1.29	0.06
BB Wheat Bread	2.10	1.30	0.00	0.00	4.15	30,353.40	62.96	3.15	1.89	0.09
Big Value	1.70	4.30	2.40	1.30	2.01	30,353.40	30.53	1.53	0.92	0.05
BK Round Sourdough	10.90	1.30	0.00	0.00	12.51	30,353.40	189.84	9.49	5.70	0.28
BrLoCarb	7.00	5.60	0.00	0.00	9.64	30,353.40	146.33	7.32	4.39	0.22
Caprilital	2.30	1.30	0.00	0.00	4.34	30,353.40	65.84	3.29	1.98	0.10
Hearty White	1.00	4.80	0.70	1.70	1.97	30,353.40	29.85	1.49	0.90	0.04
Inn Keepers Bread	3.90	4.90	1.00	1.70	4.59	30,353.40	69.64	3.48	2.09	0.10
KroRaisin	4.50	4.30	2.40	1.30	4.67	30,353.40	70.90	3.54	2.13	0.11
Oat Bran Bread	1.50	2.00	0.00	0.00	3.72	30,353.40	56.38	2.82	1.69	0.08
Wheat Berry Bread	2.10	2.00	0.00	0.00	4.29	30,353.40	65.03	3.25	1.95	0.10
YellCylin	1.60	1.70	0.00	0.00	3.75	30,353.40	56.94	2.85	1.71	0.09
2# PlainBB	3.00	5.00	0.00	0.00	5.73	30,353.40	86.89	4.34	2.61	0.13
2# PumpBB	2.30	5.00	0.10	1.90	3.38	30,353.40	51.22	2.56	1.54	0.08
2# SeedBB	3.00	5.00	0.20	1.90	3.99	30,353.40	60.54	3.03	1.82	0.09
24oz Jalapheno	2.70	1.30	0.00	0.00	4.72	30,353.40	71.61	3.58	2.15	0.11
42ozWeClu	3.00	1.30	0.00	0.00	5.00	30,353.40	75.94	3.80	2.28	0.11
42ozWiClu	3.00	1.30	0.00	0.00	5.00	30,353.40	75.94	3.80	2.28	0.11
ATMGrn	12.10	1.30	0.00	0.00	13.65	30,353.40	207.14	10.36	6.21	0.31
ATRye	9.70	1.30	0.00	0.00	11.37	30,353.40	172.54	8.63	5.18	0.26
ATWhite	10.70	1.30	0.00	0.00	12.32	30,353.40	186.95	9.35	5.61	0.28
BB English Totaster	1.70	1.70	0.00	0.00	3.85	30,353.40	58.38	2.92	1.75	0.09
BBCottage	3.30	4.30	1.70	1.30	3.89	30,353.40	59.01	2.95	1.77	0.09
Corn Toasting Bread	6.20	5.60	0.00	0.00	8.88	30,353.40	134.80	6.74	4.04	0.20
LoCarbWhi	7.00	5.60	0.00	0.00	9.64	30,353.40	146.33	7.32	4.39	0.22
Sam's 48oz Wheat	3.40	4.30	2.00	1.30	3.83	30,353.40	58.13	2.91	1.74	0.09
2lb Black Rye Bread	2.00	1.80	2.20	1.60	1.65	30,353.40	25.09	1.25	0.75	0.04
3#Wheat	0.70	4.10	1.00	1.80	1.31	30,353.40	19.83	0.99	0.59	0.03
Milton Bread	5.10	1.70	0.00	0.00	7.08	30,353.40	107.40	5.37	3.22	0.16
Vienna Bread	2.00	4.80	0.00	0.00	4.74	30,353.40	71.88	3.59	2.16	0.11
Carnegie Rye	6.80	1.30	0.00	0.00	8.61	30,353.40	130.72	6.54	3.92	0.20
Kirkland Grain Bread	1.80	1.30	0.00	0.00	3.86	30,353.40	58.64	2.93	1.76	0.09
Maple Leaf 9 Grain	2.40	1.30	0.00	0.00	4.43	30,353.40	67.29	3.36	2.02	0.10
Maple Leaf Caraway Rye	2.60	1.30	0.00	0.00	4.62	30,353.40	70.17	3.51	2.11	0.11
Maple Leaf Eng. Toaster	1.70	1.30	0.00	0.00	3.77	30,353.40	57.19	2.86	1.72	0.09
Marble Wheat Bread	1.00	4.30	0.00	0.00	3.69	30,353.40	55.98	2.80	1.68	0.08
Pannini White Bread	0.30	6.30	0.00	0.00	3.41	30,353.40	51.81	2.59	1.55	0.08
Wide Pan 9 Grain	2.20	1.70	0.00	0.00	4.32	30,353.40	65.59	3.28	1.97	0.10
High Crown White	1.70	5.30	1.00	1.20	3.01	30,353.40	45.63	2.28	1.37	0.07
Soft Cylinder	1.70	4.30	0.50	1.20	3.07	30,353.40	46.54	2.33	1.40	0.07
Yellow Cylinder	1.60	1.70	0.00	0.00	3.75	30,353.40	56.94	2.85	1.71	0.09
						Worst-Case Emissions:	**207.14**	**10.36**	**6.21**	**0.31**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi+0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 6930 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%
Controlled Acetaldehyde Emissions (ton/year) = Potential Acetaldehyde Emissions * (1 - control efficiency)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)

Appendix A: Emissions Calculations
Line 2
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Pit ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential VOC Emissions (tons/yr)**
1.39	30,353.40	**21.096**

Potential Acetaldehyde Emissions (Tons/Yr)
0.63

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
5.5

Potential Throughput (MMCF/yr)
48.2

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.05**	**0.18**	**0.01**	**2.41**	**0.13**	**2.02**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenze	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	5.059E-05	2.891E-05	1.807E-03	4.336E-02	8.191E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.205E-05	2.650E-05	3.373E-05	9.154E-06	5.059E-05
				Total HAPs:	**4.55E-02**

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Line 3
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (ton/year)	Potential VOC Emissions (ton/year)	Potential Acetaldehyde Emissions (ton/year)
1# Caraway Cocktail	2.20	2.30	0.00	0.00	4.44	15,176.70	33.68	1.01
1# Cocktail Marble	1.80	2.30	0.00	0.00	4.06	15,176.70	30.80	0.92
1# Patio French	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
1# Pump Cocktail	3.00	2.30	0.00	0.00	5.20	15,176.70	39.45	1.18
1# White Cocktail	1.70	2.30	0.00	0.00	3.96	15,176.70	30.08	0.90
10oz Onion Cocktail	1.50	2.30	0.00	0.00	3.77	15,176.70	28.63	0.86
10oz Pump Cocktail	3.00	2.30	0.00	0.00	5.20	15,176.70	39.45	1.18
10oz Seeded Cocktail	2.30	2.30	0.00	0.00	4.53	15,176.70	34.40	1.03
20" French Bread	2.50	2.30	0.00	0.00	4.72	15,176.70	35.84	1.08
25" French	3.40	1.50	0.00	0.00	5.42	15,176.70	41.15	1.23
25" YellFr	1.60	2.30	0.00	0.00	3.87	15,176.70	29.36	0.88
6" Sour	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
7" French	4.10	2.30	0.00	0.00	6.24	15,176.70	47.38	1.42
Airline Dinner Rolls	4.10	2.30	0.00	0.00	6.24	15,176.70	47.38	1.42
Beasley French Bat	2.00	1.50	0.00	0.00	4.09	15,176.70	31.06	0.93
BS Dinner	3.40	1.50	0.00	0.00	5.42	15,176.70	41.15	1.23
Butter Rolls	1.80	2.60	0.00	0.00	4.12	15,176.70	31.24	0.94
Demi FreMV	2.20	2.30	0.00	0.00	4.44	15,176.70	33.68	1.01
Demi Jalapeno Bag	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
DemiGaChe	1.80	2.30	0.00	0.00	4.06	15,176.70	30.80	0.92
Egg & Poppy	1.70	2.30	0.00	0.00	3.96	15,176.70	30.08	0.90
Ficelle	4.80	2.30	0.00	0.00	6.91	15,176.70	52.42	1.57
French Dinner Roll	4.10	1.50	0.00	0.00	6.09	15,176.70	46.19	1.39
French Twins	2.00	2.30	0.00	0.00	4.25	15,176.70	32.24	0.97
Herb & Onion D.R.	3.30	2.30	0.00	0.00	5.48	15,176.70	41.61	1.25
Honey Wheat	2.00	2.60	0.00	0.00	4.31	15,176.70	32.68	0.98
M French	4.10	2.30	0.00	0.00	6.24	15,176.70	47.38	1.42
Martino French D.R.	2.70	2.30	0.00	0.00	4.91	15,176.70	37.29	1.12
Martino Wheat D.R.	2.90	2.30	0.00	0.00	5.10	15,176.70	38.73	1.16
Multi Grain D.R.	2.10	2.30	0.00	0.00	4.34	15,176.70	32.96	0.99
Organic Demi Bag	3.60	2.30	0.00	0.00	5.77	15,176.70	43.77	1.31
P.B. SDT Din Rolls	2.00	1.50	0.00	0.00	4.09	15,176.70	31.06	0.93
Petite Dinner Rolls	0.60	1.50	0.00	0.00	2.76	15,176.70	20.96	0.63
PetiWheat	2.90	2.30	0.00	0.00	5.10	15,176.70	38.73	1.16
Potato Rolls	5.70	2.30	0.00	0.00	7.76	15,176.70	58.91	1.77
PPFrench	3.40	1.60	0.00	0.00	5.44	15,176.70	41.30	1.24
SafeWheat	4.30	1.60	0.00	0.00	6.30	15,176.70	47.78	1.43
SafeWhite	4.50	1.50	0.00	0.00	6.47	15,176.70	49.08	1.47
Slipper Bread	2.00	2.70	0.00	0.00	4.33	15,176.70	32.83	0.98
Cinnamon Raisin	2.70	2.60	0.00	0.00	4.97	15,176.70	37.73	1.13
Demi Multigrain Bag	2.70	2.30	0.00	0.00	4.91	15,176.70	37.29	1.12
DemiCombo	2.30	2.30	0.00	0.00	4.53	15,176.70	34.40	1.03
Herb Focaccia	2.00	2.60	0.00	0.00	4.31	15,176.70	32.68	0.98
Wheat Slipper	3.20	2.60	0.00	0.00	5.45	15,176.70	41.33	1.24
Organic We Demi Bag	3.60	2.30	0.00	0.00	5.77	15,176.70	43.77	1.31
						Worst-Case Emissions:	**58.91**	**1.77**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Y+0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 3465 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Appendix A: Emissions Calculations
Line 3
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential VOC Emissions (Tons/Yr)**
0.88	15,176.70	**6.68**

Potential Acetaldehyde Emissions (Tons/Yr)
0.20

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
1.6

Potential Throughput (MMCF/yr)
14.0

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.01**	**0.05**	**4.20E-03**	**0.70**	**0.04**	**0.59**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenzen	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.472E-05	8.410E-06	5.256E-04	1.261E-02	2.383E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	3.504E-06	7.709E-06	9.811E-06	2.663E-06	1.472E-05
				Total HAPs:	**1.323E-02**

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Line 4
Oven Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

		BACT Control Efficiency	95%							
Product	Initial Baker's Percent of Yeast (Yi)	Total Yeast Action Time, in hours (ti)	Final (spike) Baker's Percent of Yeast (S)	Spiking Time, in hours (ts)	Emission Factor (lb/ton)	Maximum Production (ton/year)	Potential VOC Emissions (ton/year)	Controlled VOC Emissions (tons/year)	Potential Acetaldehyde Emissions (tons/year)	Controlled Acetaldehyde Emissions (tons/year)
4" Potato Cluster	5.70	1.40	0.00	0.00	7.59	18,969.78	71.97	3.60	2.16	0.11
4" Wheat Cluster	6.00	1.40	0.00	0.00	7.87	18,969.78	74.67	3.73	2.24	0.11
BB Cluster Hambs	5.70	1.30	0.00	0.00	7.57	18,969.78	71.79	3.59	2.15	0.11
Hot Dog Buns	5.00	1.40	0.00	0.00	6.92	18,969.78	65.66	3.28	1.97	0.10
PanRoll	8.00	1.40	0.00	0.00	9.77	18,969.78	92.70	4.63	2.78	0.14
Potato Hot Dog	6.10	1.40	0.00	0.00	7.97	18,969.78	75.58	3.78	2.27	0.11
SftRllPln	6.70	1.30	0.00	0.00	8.52	18,969.78	80.80	4.04	2.42	0.12
Wheat Hot Dogs	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
Yellow Steak Buns	4.80	1.30	0.00	0.00	6.71	18,969.78	63.68	3.18	1.91	0.10
4" White Cluster	5.70	1.40	0.00	0.00	7.59	18,969.78	71.97	3.60	2.16	0.11
4.5" Cluster Corn Bun	6.60	1.40	0.00	0.00	8.44	18,969.78	80.08	4.00	2.40	0.12
4.5" Cluster Egg Bun	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
4.5" Cluster Wheat Bun	5.30	1.40	0.00	0.00	7.21	18,969.78	68.37	3.42	2.05	0.10
Steak Buns	3.00	4.30	1.40	1.30	3.76	18,969.78	35.63	1.78	1.07	0.05
Wheat Pan Rolls	5.10	1.30	0.00	0.00	7.00	18,969.78	66.38	3.32	1.99	0.10
9x9 Ciabatta	5.40	1.30	0.00	0.00	7.28	18,969.78	69.08	3.45	2.07	0.10
Ruby Tues Pan Rolls	7.10	1.40	0.00	0.00	8.92	18,969.78	84.59	4.23	2.54	0.13
Slipper Bread	2.00	2.70	0.00	0.00	4.33	18,969.78	41.04	2.05	1.23	0.06
Wheat Slipper	3.20	2.60	0.00	0.00	5.45	18,969.78	51.66	2.58	1.55	0.08
BB Seeded Cluster	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
BB Wheat Clusters	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Hamburgers	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Hotdogs	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Wheat Hamburgers	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
DC Wheat Hot Dogs	5.40	1.40	0.00	0.00	7.30	18,969.78	69.27	3.46	2.08	0.10
						Worst-Case Emissions:	**92.70**	**4.63**	**2.78**	**0.14**

Note:
VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:
1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Oven Methodology:
Emission Factor (lb/ton) = 0.95Yi+0.195ti-0.51S-0.86ts+1.90
Emission factor equation from AP-42, Fifth Edition, Volume I, Chapter 9.9.6 Bread Baking Supplement C, Feb. 1997
Maximum Production (ton/year) = 4331 (lb/hr) x 8760 (hr/yr) x (1 ton/ 2000 lb)
Potential VOC Emissions (ton/year) = Emission Factor (lb VOC/ton of baked bread) x Maximum Production (ton/year) x (1 ton/2000 lb)
Controlled VOC Emissions (tons/year) = Worst-Case Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%
Controlled Acetaldehyde Emissions (ton/year) = Potential Acetaldehyde Emissions * (1 - control efficiency)
Worst-Case Emissions = Maximum Potential VOC Emissions (ton/year)

Appendix A: Emissions Calculations
Line 4
Proof Box & Natural Gas Emissions

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Proof-Box Emissions

Emission Factor (lb/ton)	Maximum Throughput (tons/year)	**Potential Emissions (tons/year)**
0.89	18,969.78	**8.44**

Potential Acetaldehyde Emissions (Tons/Yr)
0.25

Natural Gas Combustion

Heat Capacity (MMBtu/hr)
4.0

Potential Throughput (MMCF/yr)
35.0

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	**0.03**	**0.13**	**0.01**	**1.75**	**0.10**	**1.47**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

	HAPs - Organics				
	Benzene	Dichlorobenze	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.679E-05	2.102E-05	1.314E-03	3.154E-02	5.957E-05

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	8.760E-06	1.927E-05	2.453E-05	6.658E-06	3.679E-05
				Total HAPs:	**3.306E-02**

Proof-box Methodology:
Emission Factor (lb/ton) derived from stack test performed in June 2010
Potential Emissions (ton/year) = Emission Factor (lb/ton) x Maximum Throughput (tons/year) x (1 ton/2000 lbs)
Controlled Emissions (tons/year) = Potential Emissions (tons/year) x (1 - control efficiency)
Potential Acetaldehyde Emissions (ton/year) = Potential VOC Emissions (ton/yr) * 3%

Natural Gas Combustion Methodology:
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Miscellaneous Natural Gas Combustion

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Emission Unit ID
5.1	44.7	Boiler 1
5.1	44.7	Boiler 2
0.3	2.6	Heater 1
0.3	2.6	Heater 2
0.3	2.6	Heater 3
0.3	2.6	Heater 4
11.40	99.86	

	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.09	0.38	0.03	4.99	0.27	4.19

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.049E-04	5.992E-05	3.745E-03	8.988E-02	1.698E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.497E-05	5.493E-05	6.990E-05	1.897E-05	1.049E-04
				Total HAPs:	**9.423E-02**

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Emissions from Dry Ingredient Storage and Conveying

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Uncontrolled Emission Factor (lbs/ton)*	
PM	PM10 / PM2.5
3.14	1.10

Filter Unit Control Efficiency
PM/PM10/PM2.5
99.0%

Potential to Emit (PTE) of Particulate (PM / PM10 / PM2.5)

Emission Unit	Maximum Ingredient Throughput (lbs/hr)	Maximum Ingredient Throughput (tons/hr)	Uncontrolled PTE of PM (lbs/hr)	Uncontrolled PTE of PM10/PM2.5 (lbs/hr)	Uncontrolled PTE of PM (tons/yr)	Uncontrolled PTE of PM10/PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10/PM2.5 (tons/yr)
1 Railcar Pneumatic Conveyance System (P1)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
6 Dry Ingredient Storage Silos (P2, P3, P4, P5, P6, P7)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
3 Dry Ingredient Storage Silos (P8, P9, P10)								
3 Dry Ingredient Use Bins (P11, P12, P13)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
1 Dry Ingredient Use Bin (P14)								
1 Dry Ingredient Use Bin (P15)								
2 Bun Scale Hoppers (P16, P17)	19500	9.75	30.62	10.73	134.09	46.98	1.34	0.47
3 Bread Scale Hoppers (P18, P19, P20)								
1 Bread/Roll Hopper (P21)								
1 Dry Ingredient Hopper (P22)								
				Totals	**536.37**	**187.90**	**5.36**	**1.88**

Note:

*The uncontrolled potential emissions of particulate from dry ingredient storage and conveying before controls are estimated using AP-42 Table 11.12-2 emission factors for the uncontrolled truck unloading of cement supplement to elevated storage silo (pneumatic). No AP-42 emission factors exist for dry ingredient (including flour) pneumatic conveyance.
Assumed PM10 = PM2.5

Methodology:

Maximum Hourly Throughput (tons/hr) = [Maximum Hourly Throughput (lbs/hr)] / [2000 lbs/ton]
Uncontrolled PTE of PM or PM10 (lbs/hour) = [Maximum Hourly Throughput (tons/hr)] * [Emission Factor (lbs/ton)]
Uncontrolled PTE of PM or PM10 (tons/year) = [Uncontrolled PTE of PM or PM10 (lbs/hour)] * [8760 hours/year)] / [2000 lbs/ton]
Controlled PTE of PM or PM10 (tons/year) = [Uncontrolled PTE of PM or PM10 (tons/year)] *[1 - Control Efficiency]

Appendix A: Emission Calculations
VOC & HAP Emissions
From Inkjet Printers

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: June 20, 2011

Inkjet Printers Solvent/Ink Usage (VOC)

Material	Density (lb/gal)	Annual Usage (gal)	VOC Content (lbs/gal)	Potential VOC Emissions (lb/hr)	(lb/day)	(tons/yr)
SI-LP43 Flush/Cleaner	8.40	6.75	0.25	1.93E-04	4.62E-03	8.44E-04
SI-SQ60 Black Ink	8.51	45.00	0.82	4.21E-03	0.10	0.02
265 Make-Up Ink	6.72	103.50	6.72	0.08	1.91	0.35
47 Ink	7.26	13.50	5.58	8.60E-03	0.21	0.04
16-8565 Make-Up Ink	6.59	56.25	6.52	0.04	1.01	0.18
16-8200 Ink	7.506	18.00	5.18	0.01	0.26	0.05
				0.14	3.48	**0.63**

Notes:
Annual usage information provided by source.
VOC Contents obtained from product MSDS sheets.

Methodology:
Potential VOC Emissions (tons/yr) = Annual Usage (gal) * VOC Content (lbs/gal) * 1 ton / 2,000 lbs
Potential VOC Emissions (lb/hr) = Annual Usage (gal) * VOC Content (lbs/gal) * 1 yr / 8760 hrs
Potential VOC Emissions (lb/day) = Potential VOC (lb/hr) * 24

Inkjet Printers Solvent/Ink Usage (HAP)

Material	Density (lb/gal)	Annual Usage (gal)	Methanol Content (lbs/gal)	Potential Methanol Emissions (tons/yr)
16-8200 Ink	7.506	18.00	2.63	0.02
				0.02

Notes:
Annual usage information provided by source.
HAP Contents obtained from product MSDS sheets.

Methodology:
Potential HAP Emissions (tons/yr) = Annual Usage (gal) * HAP Content (lbs/gal) * 1 ton / 2,000 lbs

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: **Alpha Baking Co., Inc.**
Address City IN Zip: **360 N. Fail Road, LaPorte, Indiana 46350**
Permit Number: **F091-28222-00135**
Plt ID: **091-00135**
Reviewer: **Jason R. Krawczyk**
Date: **June 20, 2011**

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	17.0	2.35	40.0	16.9	675.2	1000	0.189	7.6	2761.7
Vehicle (leaving plant) (one-way trip)	17.0	2.35	40.0	16.9	675.2	1000	0.189	7.6	2761.7
		Total	**79.9**		**1350.3**			**15.1**	**5523.4**

Average Vehicle Weight Per Trip = 16.9 tons/trip
Average Miles Per Trip = 0.19 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	16.9	16.9	16.9	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m^2 = ubiquitous baseline silt loading value for ADT < 500 - Table 13.2.1-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.124	0.025	0.0061	lb/mile
Mitigated Emission Factor, Eext =	0.113	0.023	0.0055	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.17	0.03	0.01	0.16	0.03	0.01
Vehicle (leaving plant) (one-way trip)	0.17	0.03	0.01	0.16	0.03	0.01
	0.34	**0.07**	**0.02**	**0.31**	**0.06**	**0.02**

Methodology:
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations:
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads

Company Name: **Alpha Baking Co., Inc.**
Address City IN Zip: **360 N. Fail Road, LaPorte, Indiana 46350**
Permit Number: **F091-28222-00135**
Plt ID: **091-00135**
Reviewer: **Jason R. Krawczyk**
Date: **June 20, 2011**

Unpaved Roads at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	8.5	2.4	20.0	16.9	337.6	575	0.109	2.2	794.0
Vehicle (leaving plant) (one-way trip)	8.5	2.4	20.0	16.9	337.6	575	0.109	2.2	794.0
		Total	**40.0**		**675.2**			**4.4**	**1588.0**

Average Vehicle Weight Per Trip = 16.9 tons/trip
Average Miles Per Trip = 0.11 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Sand/Gravel Processing Plant)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	16.9	16.9	16.9	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	5.62	1.43	1.43	lb/mile
Mitigated Emission Factor, Eext =	3.69	0.94	0.94	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	2.23	0.57	0.57	1.47	0.37	0.37
Vehicle (leaving plant) (one-way trip)	2.23	0.57	0.57	1.47	0.37	0.37
	4.46	**1.14**	**1.14**	**2.93**	**0.75**	**0.75**

Methodology:
Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations:
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
Best Available Control Technology (BACT) Determination

Technical Support Document (TSD) for a New Source Construction and Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Alpha Baking Co., Inc. - LaPorte
Source Location:	360 North Fail Road, LaPorte, Indiana 46350
County:	LaPorte
SIC Code:	2051
Operation Permit No.:	F091-28222-00135
Permit Reviewer:	Jason R. Krawczyk

Background Information

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) review for the existing bakery, owned and operated by Alpha Baking Co., Inc located at 360 North Fail Road, LaPorte, Indiana 46350. The following existing emission units have the potential to emit volatile organic compounds (VOCs) greater than twenty-five (25) tons per twelve (12) consecutive month period. Pursuant to the provisions of 326 IAC 8-1-6, Best Available Control Technology analyses for VOC were performed for these units:

(a) One baking operation consisting of:

(1) One (1) bun baking line, identified as Line 1, constructed in 1988, approved for reconstruction in 2011, with a maximum production capacity of 7,796 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #1 Oven, with a maximum heat input capacity of 3.50 MMBtu per hour, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #1 Proof Box.

(2) One (1) bread baking line, identified as Line 2, constructed in 1990, permitted in 2011, with a maximum production capacity of 6,930 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #2 Oven, with a maximum heat input capacity of 5.50 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #2 Proof Box.

(3) One (1) baking line, identified as Line 4, constructed in 2005, permitted in 2011, with a maximum production capacity of 4,331 lbs per hour, and consisting of:

(A) One (1) natural gas direct-fired oven, identified as #4 Oven, with a maximum heat input capacity of 4.00 MMBtu/hr, with VOC emissions controlled by catalytic oxidizer CAT-OX; and

(B) One (1) proof box, identified as #4 Proof Box.

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies;

(4) Evaluate the most effective controls and document the results; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts of the control options. Emission reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment.

VOC BACT Analysis

Step One: Identify All Potentially Available Control Technologies

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling VOC emissions from the bakery lines (Line 1, Line 2, and Line 4):

(a) Catalytic Oxidizer:

Catalytic oxidation is the process of oxidizing organic contaminants in a waste gas stream within a heated chamber containing a catalyst bed in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The catalyst is used to lower the activation energy of the oxidation reaction. The residence time, temperature, flow velocity and mixing, the oxygen concentration, and type of catalyst used in the combustion chamber affect the oxidation rate and destruction efficiency. Catalytic oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Catalytic oxidizers operate at lower temperatures and require less fuel than thermal oxidizers, they have a smaller footprint, and they need little or no insulation. Catalytic oxidizers are typically designed to have a residence time of 0.5 seconds or less and combustion chamber temperatures between 600 and 1,200°F. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

The two types of catalytic oxidation systems include recuperative and regenerative catalytic oxidizers, which are differentiated by the type of heat recovery equipment used. In a recuperative catalytic oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. VOC destruction efficiencies greater than 98% are achievable under certain operating conditions (EPA-453/R-92-017). However, based on the information reviewed for this BACT determination, a VOC destruction efficiency of 95% or a VOC outlet concentration of 10 ppmv or less is achievable on a consistent basis under normal

operational conditions for a typical bread baking operation.

(b) Thermal Oxidizer:

Thermal oxidation is the process of oxidizing organic contaminants in a waste gas stream by raising the temperature above the auto-ignition point in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The residence time, temperature, flow velocity and mixing, and the oxygen concentration in the combustion chamber affect the oxidation rate and destruction efficiency. Thermal oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Thermal oxidizers are typically designed to have a residence time of one second or less and combustion chamber temperatures between 1,200 and 2,000°F.

The three types of thermal oxidation systems include direct flame, recuperative, and regenerative thermal oxidizers, which are differentiated by the type of heat recovery equipment used. A direct flame thermal oxidizer consists of only a combustion chamber with no heat recovery equipment. In a recuperative thermal oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings. In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flowrates, since the variable flowrate results in varying residence times, combustion chamber temperature, and poor mixing. VOC destruction efficiencies greater than 98% are achievable under certain operating conditions (EPA-453/R-92-017). However, a VOC destruction efficiency of 95% is achievable on a consistent basis under normal operational conditions for a typical bread baking operation.

(c) Wet Packed Bed Scrubber:

A wet packed bed scrubber is an absorption system in which a waste gas stream is interacted with a scrubbing liquid inside a contact chamber containing a bed of packing media in order to strip contaminant gases from the waste gas stream through the process of dissolution. Water is the most commonly used scrubbing liquid. Other solvents may be used depending on the components of the waste gas stream. Based on information reviewed for this BACT determination, a wet packed bed scrubber is infeasible due to the low effectiveness for VOC control and the generation of large amount of waste water

(d) Biofiltration:

Biofiltration is a process in which a waste gas stream is passed through a bed of peat, compost, bark, soil, gravel, or other inorganic media in order to strip organic contaminant gases from the waste gas stream through the process of dissolution in the bed moisture and adsorption to the bed media. Under aerobic conditions, microorganisms naturally present in the bed oxidize the organic contaminant gases within the bed to carbon dioxide, water, and additional biomass through metabolic processes. If the temperature of the waste gas stream is too high, the gas stream must be cooled to an optimum temperature before it can be treated in the biofilter in order to maintain the viability of the microorganisms. In addition, the bed must be monitored and maintained at an optimum moisture content and pH in order to prevent cracking of the bed media and to maintain the viability of the microorganisms. Based on information reviewed for this BACT determination, a biofilter is infeasible because the high temperature exhaust stream from the baking process inhibits microbiological activities.

(e) Carbon Adsorption Unit:

Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Carbon adsorption systems can operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the

VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air in order to desorb the absorbate (VOC vapors) from the adsorbent and the adsorbate and regenerated absorbent can be recovered for reuse or disposal. Non-regenerative systems require the removal of the spent adsorbent and replacement with fresh adsorbent. Based on the information reviewed for this BACT determination, the use of carbon adsorption is infeasible because fats and oils in the baking process exhaust clog carbon pores and ethanol is difficult to strip from the carbon.

(6) Condensation Unit:

Condensation is the process by which the temperature of the waste gas stream is lowered to below the dew points of the contaminants gases in waste gas. A refrigeration condenser normally provides a VOC control efficiency greater than 90%. Based on the information reviewed for this BACT determination, the condensation method is infeasible because of the high air flows, temperatures, and moisture content in the baking process exhaust. In addition, the fats and oils contained in the exhaust reduce the control efficiency and create sanitation concerns.

Step Two: Eliminate Technically Infeasible Control Options

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of carbon adsorption and condensation are not technically feasible options for this source for the following reasons:

(a) Based on the information reviewed for this BACT determination, the use of carbon adsorption is infeasible because fats and oils in the bakery oven exhaust clog carbon pores. In addition, the ethanol is difficult to strip from the carbon.

(b) Based on the information reviewed for this BACT determination, the condensation method is infeasible because of the low VOC concentrations and high air flows, temperatures, and moisture content in the bakery oven exhaust. In addition, the fats and oils contained in the exhaust reduce the control efficiency and create sanitation concerns.

(c) Based on the information reviewed for this BACT determination, the use of a biofiltration system is infeasible because the high temperature exhaust stream from the baking ovens would inhibit microbiological activities. The outlet temperature of the ovens would exceed those in the required temperature range for mesophilic bacteria (nominally less than 106° F) and would kill off the microbes. Additionally, during the periods that the oven is shut-down for normal cleaning operations, the biofiltration system would have to be artificially fed in order to maintain system acclimation.

The following table summarizes other BACT determinations at similar sources or for similar processes that were identified in the EPA's RACT/BACT/LAER Clearinghouse (RBLC) under Process Type Code 70.550 (Bakeries and Snack Food), as well as IDEM, OAQ permits issued to date:

Company/ Location	Year Issued	Process Description	Control Device	BACT Emission Limits/Requirements	Reference
Harlan Bakeries, Inc. Avon, IN	2008	Bakery Oven	Catalytic Oxidizer	VOC emissions from the bagel oven shall be controlled by a catalytic oxidizer. Overall VOC efficiency of the catalytic oxidizer shall be 95%, or the VOC outlet concentration shall not exceed 10 ppmv. VOC emissions shall not exceed 0.36 lbs/hr.	Indiana Minor Source Operating Permit M063-24103-00059
Allen Foods, Inc. Elkhart, IN	2006	Bakery Oven	Catalytic Oxidizer	VOC emissions from the bread oven shall be controlled by a catalytic oxidizer. Overall VOC efficiency of the catalytic oxidizer shall be 95%, or the VOC outlet concentration shall not exceed 10 ppmv. VOC emissions shall not exceed 2.29 lbs/hr.	Indiana Federally Enforceable State Operating Permit F039-22633-00643
Holsum of Fort Wayne, Inc. Fort Wayne, IN	2005	Bakery Oven	None	VOC emission shall be limited to 60 tons per twelve (12) consecutive month period	Indiana Part 70 Significant Source Modification SSM 091-27352-00106
The Kroger Company - Indianapolis Bakery Indianapolis, IN	2003	Bakery Oven and Chain Lubricant	None	VOC emissions shall not exceed 49.0 tons per thirteen (13) consecutive twenty-eight (28) day period.	Indiana Federally Enforceable State Operating Permit Significant Permit Revision F097-16909-00161
Maple Leaf Bakery CA	1998	Bakery Oven	Catalytic Oxidizer	92 % Destruction Removal Efficiency Minimal 600°F Operating Temperature	RBLC ID: CA-0854 Permit No.: 0473-170
Freund Baking Company CA	1997	Bakery Oven	Catalytic Oxidizer	95.4 % Destruction Removal Efficiency	RBLC ID: CA-0859 Permit No.: 328570
Interstate Brands Corporation Indianapolis, IN	1997	Combined Bakery Ovens and Chain Lubricant	None	VOC emissions shall not exceed 95 tons per thirteen (13) consecutive twenty-eight (28) day period.	Indiana Federally Enforceable State Operating Permit F097-7413-00171
Holsum Bakery, Inc. AZ	1996	Bakery Oven	Quencher / Scrubber	81 % Control Efficiency 49.9 tons per year	RBLC ID: AZ-0029 Permit No.: 95-0432
KBI, Inc. Morristown, IN	1996	Dough Mixing, Fermentation, and Baking Area	None	VOC emissions shall not exceed a total of 99.9 tons per twelve (12) consecutive month period	Indiana Federally Enforceable State Operating Permit F145-15375-00037
Certified Grocers of California, Ltd CA	1990	Bakery Oven	Catalytic Afterburner	95% Control Efficiency	RBLC ID: CA-0468 Permit Nos.: 228274, 219899
Automatic Rolls of Virginia, Inc. VA	1988	Bakery Oven	None	13.80 pounds per hour 23.00 tons per year	RBLC ID: VA-0110 Permit No.: (7)40761

Step Three: Rank Remaining Control Technologies by Control Effectiveness

The remaining technically feasible options for controlling VOC emissions from the existing bread baking operation are as follows (listed in descending order of most technically feasible):

Options for VOC Control	Control Efficiency (%)
Catalytic Oxidizer	95%
Thermal Oxidizer	95%
Wet Packed Bed Scrubber	95%

IDEM is aware that that the above control technologies may be able to periodically achieve control efficiencies that exceed 95% under certain operating conditions. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that greater than 95% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Step Four: Evaluate Top Control Alternatives

Further evaluation including economic, energy and environmental impacts are required for controlling VOC emissions from the bread baking line. Annualized costs were determined in accordance with the EPA guidance (EPA's Office of Air Quality Planning and Standards Control Cost Manual), with other relevant information provided by the respective equipment vendors, inputs from plant personnel, and engineering judgment.

The costs associated with installing a thermal oxidizer were not evaluated since the cost of the technology is significantly higher than that of a catalytic oxidizer, which achieves the same level of control.

The costs associated with installing a wet packed bed scrubber were not evaluated since the cost associated with the increased water usage for the control device make the cost of operating the control significantly higher than that of a catalytic oxidizer, which achieves the same level of control.

The source proposed three possibilities for controlling potential VOC emissions from the bread baking lines:

1) The first option evaluated was to control the VOC emissions from each of the bread lines (proof box and oven). This option would include the installation of a clean room surrounding the proof boxes as well as the conveyor system between the proof boxes and the ovens. Additional air handlers would be required to direct airflow to a catalytic oxidizer which would be installed after the bakery ovens.

2) The second option evaluated was to control VOC emissions from the proof boxes. This option would include the installation of clean rooms surrounding the proof boxes as well as the conveyor systems between the proof boxes and the ovens. Additional air handlers would be required to direct airflow to a free standing catalytic oxidizer.

3) The third option evaluated was to control the VOC emissions from the bakery ovens. This option would include the installation of a catalytic oxidizer to control emissions from only the bakery ovens.

Pursuant to Section IV.D.2.c of EPA's BACT Guidance Document, costs that are within the range of normal costs for a control method may be reviewed in comparison to similar sources. This comparison may allow for the elimination of a technologically- and otherwise economically-feasible control option, provided that the costs of pollutant removal for the subject source are unduly high when compared to the costs borne by sources in recent BACT determinations.

The technologically-feasible options for controlling VOC emissions from the bakery lines and the costs estimated for Alpha Baking Co., Inc. - LaPorte to purchase and operate each control method are summarized in Appendix C. The cost effectiveness for similar controls at similar facilities are not available for comparison for the proof boxes because there are currently no sources within the United States or any other country where control devices have been known to be implemented for VOC control of proof boxes. The costs for installing and operating control devices to control emissions from only the oven are comparable with previously performed Best Available Control Technology (BACT) determinations.

Bakery Line	**Cost for Controlling VOCs from Entire Line (Proof Box* & Oven)**	**Cost for Controlling VOCs from Proof Box* Only**	**Cost for Controlling VOCs from Oven Only**
	($ / Ton Removed)	**($ / Ton Removed)**	**($ / Ton Removed)**
Line #1	$3,402	$85,244	$921
Line #2	$3,034	$32,827	$963
Line #4	$7,258	$86,978	$2,442

Note:
*Costs associated with controlling proof boxes are theoretical. These types of facilities have never been required to control VOC emissions.

Line 1:

The cost associated with controlling the combined 307.96 tons of VOC emitted from both the #1 Oven and the #1 Proof Box has been determined to be $3,402 per ton of VOC removed.

The cost associated with controlling the 295.67 tons of VOC emitted from the #1 Oven is $921 per ton of VOC removed.

The additional cost associated with controlling the 12.29 tons of VOC emitted from the #1 Proof Box is $63,088 per ton of VOC removed. This is equivalent to $775,353 per year to control the emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$1,047,651 (TAC for controlling proof box & oven) - $272,298 (TAC for controlling oven only) = $775,353

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$775{,}353 \text{ (additional cost for controlling proof box)}}{12.29 \text{ (tons VOC emitted from proof box)}} = \$63{,}088 \text{ (additional cost per ton VOC removed)}$$

In order to control the 12.29 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 24.53 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.02	0.09	0.09	0.07	0.01	1.03	1.23	0.02	1471.74

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the #1 Proof Box would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $921 per ton emitted from the #1 Oven to $63,088 for each ton emitted from the #1 Proof Box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety-six and one one-hundredth (96.01) percent of the emissions from Line 1 are being emitted from the bakery oven stack compared to the three and ninety-nine one hundredths (3.99) percent that is emitted from the proof box.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control emissions from the bakery oven, to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Line 2

The cost associated with controlling the combined 228.24 tons of VOC emitted from both the #2 Oven and the #2 Proof Box has been determined to be $3,034 per ton of VOC removed.

The cost associated with controlling the 207.14 tons of VOC emitted from the #2 Oven is $963 per ton of VOC removed.

The additional cost associated with controlling the 21.10 tons of VOC emitted from the #2 Proof Box is $23,375 per ton of VOC removed. This is equivalent to $493,125 per year to control the emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$692,510 (TAC for controlling proof box & oven) - $199,385 (TAC for controlling oven only) = $493,125

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$493{,}125 \text{ (additional cost for controlling proof box)}}{21.10 \text{ (tons VOC emitted from proof box)}} = \$23{,}375 \text{ (additional cost per ton VOC removed)}$$

In order to control the 21.10 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 15.77 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.01	0.06	0.06	0.04	negl.	0.66	0.79	0.02	951.84

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the #2 Proof Box would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $963 per ton emitted from the #2 Oven to $23,375 for each ton emitted from the #2 Proof Box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety and seventy-six one-hundredths (90.76) percent of the emissions from Line 2 are being emitted from the bakery oven stack compared to the nine and twenty-four one-hundredths (9.24) percent that is emitted from the proof box.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control

emissions from the bakery oven, to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Line 4

The cost associated with controlling the combined 101.14 tons of VOC emitted from both the #4 Oven and the #4 Proof Box has been determined to be $7,258 per ton of VOC removed.

The cost associated with controlling the 92.70 tons of VOC emitted from the #4 Oven is $2,442 per ton of VOC removed.

The additional cost associated with controlling the 8.44 tons of VOC emitted from the #4 Proof Box is $60,156 per ton of VOC removed. This is equivalent to $507,719 per year to control emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$734,095 (TAC for controlling proof box & oven) - $226,376 (TAC for controlling oven only) = $507,719

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$507{,}719 \text{ (additional cost for controlling proof box)}}{8.44 \text{ (tons VOC emitted from proof box)}} = \$60{,}156 \text{ (additional cost per ton VOC removed)}$$

In order to control the 8.44 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 15.77 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.01	0.06	0.06	0.04	negl.	0.66	0.79	0.02	951.84

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the #4 Proof Box would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $2,442 per ton emitted from the #4 Oven to $60,156 for each ton emitted from the #4 Proof Box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety-one and sixty-six one-hundredths (91.66) percent of the emissions from Line 4 are being emitted from the bakery oven stack compared to the eight and thirty-four one-hundredths (8.34) percent that is emitted from the proof box.

The cost for controlling one ton of VOC from Line 4 (proof box and oven) is $7,258 which is economically infeasible.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control emissions from the bakery oven, to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Step Five: Select BACT

IDEM, OAQ has determined that the following requirements represent BACT for the existing bread baking operations at the source:

Baking Ovens

(a) The VOC emissions from the #1 Oven, #2 Oven, and #4 Oven shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

Proof Boxes

(a) The source shall operate the #1 Proof Box, #2 Proof Box, and #4 Proof Box, in accordance the manufacturer's design and operating specifications.

(b) The source shall perform the following proof box cleaning operations for the #1 Proof Box, in order to ensure proper operation and to minimize potential emissions:

(1) Weekly Cleaning Procedure:

(A) Lock out equipment;
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Remove all bun pans;
(D) Using long handle extension, scrape dough from conveyor, grids, and supports;
(E) Start from center and scrape all dough from floor;
(F) Sweep proof box floor from center out. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(G) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(H) Scrape dough from bun pans and put into blue metal cart;
(I) Put bun pans on proper pan car;
(J) Empty and clean blue metal cart. Put cart in proper location; and
(K) Remove lock out and turn power on.

(2) Four (4) Week Cleaning Procedure:

(A) Lock out equipment;
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Remove all bun pans;
(D) Using long handle extension, scrape dough from conveyor, grids, and supports;
(E) Start from center and scrape all dough from floor;
(F) Sweep proof box floor from center out. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(G) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(H) Scrape dough from bun pans and put into blue metal cart;
(I) Put bun pans on proper pan cart;
(J) Rinse exterior of box with water;
(K) Foam with F 204, let stand fifteen (15) minutes and rinse with water;
(L) Wet mop floor;
(M) Return ingredients to proper location;
(N) Empty and clean blue metal cart. Put cart in proper location; and
(O) Remove Lock out and turn power on.

(3) Thirteen (13) Week Cleaning Procedure:

(A) Using extension ladder, climb on top of the east side for the proof box;
(B) Secure safety harness;
(C) Vacuum;
(D) Move equipment and repeat procedure to remaining sides of proof box. Use long extensions to vacuum top of box;
(E) Empty and clean vacuum; and
(F) Put all equipment away in proper locations.

(c) The source shall perform the following proof box cleaning operations for the #2 Proof Box, in order to ensure proper operation and to minimize potential emissions:

(1) Weekly Cleaning Procedure:

(A) Lock out equipment;
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Using long handle extension, scrape dough from racks and supports;
(D) Sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(E) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(F) Empty and clean blue metal cart. Put cart in proper location; and
(G) Remove lock out and turn power on.

(2) Four (4) Week Cleaning Procedure

(A) Lock out equipment;
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Using long handle extension, scrape dough from racks and supports;
(D) Sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(E) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(F) Rinse exterior of box with water;
(G) Foam with F 204, let stand fifteen (15) minutes and rinse with water;
(H) Wet mop floor;
(I) Return ingredients to proper location;
(J) Empty and clean blue metal cart. Put cart in proper location; and
(K) Remove lock out and turn power on.

(3) Thirteen (13) Week Cleaning Procedure:

(A) Using extension ladder, climb on top of the proof box;
(B) Secure safety harness;
(C) Vacuum;
(D) Empty and clean vacuum; and
(E) Put all equipment away in proper locations.

(d) The source shall perform the following proof box cleaning operations for the #4 Proof Box, in order to ensure proper operation and to minimize potential emissions:

(1) Weekly Cleaning Procedure:

(A) Lock out equipment;
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Using long handle extension, scrape dough from racks and supports;

(D) Scrape and sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(E) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(F) Empty and clean blue metal cart. Put cart in proper location; and
(G) Remove lock out and turn power on.

(2) Four (4) Week Cleaning Procedure

(A) Lock out equipment;
(B) Remove all raw ingredients and/or product containers from seeder area;
(C) Using long handle extension, scrape dough from racks and supports;
(D) Scrape and sweep proof box floor. Put sweepings in gray bucket. Empty bucket into blue metal cart;
(E) Fill five (5) gallon bucket (3/4 full) with F 204 at 11 ounces per gallon and wet entire floor and then rinse;
(F) Rinse exterior of box with water;
(G) Foam with F 204, let stand fifteen (15) minutes and rinse with water;
(H) Wet mop floor;
(I) Return ingredients to proper location;
(J) Empty and clean blue metal cart. Put cart in proper location; and
(K) Remove loc out and turn power on.

(3) Twenty-six (26) Week Cleaning Procedure

(A) Using extension ladder, climb on top of the proof box;
(B) Secure safety harness;
(C) Vacuum;
(D) Empty and clean vacuum; and
(E) Put all equipment away in proper locations.

Compliance with the above limits and conditions will satisfy the requirements of 326 IAC 8-1-6 (BACT).

IDEM Contact

Questions regarding this BACT Analysis can be directed to Jason R. Krawczyk at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5174 or toll free at 1-800-451-6027 extension 4-5174.

Appendix C: Cost Analyses for Control Devices
Controlling the Bread Baking Line 1

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: May 5, 2011

Catalytic Oxidizer and/or Clean Room / Air Handlers			Units Controlled		
			Proof Box & Oven	Proof Box Only	Oven Only
DIRECT COST (Pollution Control Equipment)		**Unit Cost**	**TOTAL ($)**	**TOTAL ($)**	**TOTAL ($)**
Direct Purchased Equipment					
	Equipment Total (A)	A =	$1,661,500	$1,661,500	$500,000
	Instrumentation	0.10 A	$166,150	$166,150	$50,000
	Sales Taxes	0.07 A	$116,305	$116,305	$35,000
	Freight	0.05 A	$83,075	$83,075	$25,000
Total Equipment Costs (B)		**B =**	**$2,027,030**	**$2,027,030**	**$610,000**
Direct Installation Cost					
	Foundation and Support (Engineering Estimate)		$20,000	$20,000	$10,000
	Auxiliaries - Ductwork / Fittings (CSM Worldwide)		$325,000	$325,000	$70,000
	Handling and Erection (Engineering Estimate)		$25,000	$25,000	$10,000
	Piping (Engineering Estimate)		$10,000	$10,000	$5,000
	Insulation and Painting		$0	$0	$0
	Electrical (Engineering Estimate)		$10,000	$10,000	$5,000
	Site Preparation		$0	$0	$0
	Other		$0	$0	$0
Total Direct Installation Costs			**$390,000**	**$390,000**	**$100,000**
TOTAL Direct Investment (TDI) =					
(Total Equipment Cost + Total Direct Installation Cost)		**TDI =**	**$2,417,030**	**$2,417,030**	**$710,000**
Indirect Installation Costs					
	Engineering and Supervision (Engineering Estimate)		$200,000	$200,000	$150,000
	Lost Production (for retrofit situation)		$1,076,040	$1,076,040	$0
	Construction and Field Expenses		$125,000	$125,000	$50,000
	Contractor Fees		$0	$0	$0
	Start-up and Performance Tests (Source Specific Estimate)		$40,000	$40,000	$40,000
	Overall Contingencies (Engineering Estimate)	0.25 TDI	$604,258	$604,258	$177,500
	Working Capital		$0	$0	$0
Total Indirect Installation Costs (TIC)		**TIC =**	**$2,045,298**	**$2,045,298**	**$417,500**
TOTAL CAPITAL INVESTMENT (TCI) = (TDI +TIC)		**TCI =**	**$4,462,328**	**$4,462,328**	**$1,127,500**
ANNUAL OPERATION & MAINTENANCE					
Direct Operating Costs (DA)					
	Operating Labor - Sanitation - 2 People (Plt. Mngr.)		$121,000	$121,000	$0
	Maintenance Labor - Technician - 1 person (Plt. Mngr.)		$65,000	$65,000	$0
	Maintenance Parts & Labor (Engineering Estimate)		$25,000	$25,000	$25,000
	Gas & Electric (Equipment Ratings)		$230,634	$230,634	$83,713
	Replacement Parts		$0	$0	$0
Total Direct Operating Costs (DA)		**DA =**	**$441,634**	**$441,634**	**$108,713**
Indirect Operating Costs (IC)					
	Overhead (Engineering Estimate)		$7,000	$7,000	$7,000
	Insurance & Administrative Costs		$7,000	$7,000	$7,000
	Capital Recovery Cost (Assumes 5.5% interest over 10 years)		$592,017	$592,017	$149,585
Total Indirect Operating Costs (IA)		**IA =**	**$14,000**	**$14,000**	**$14,000**
	Heat Recovery Credits		$0	$0	$0
Total Operating Costs (DA + IA - Heat Recovery Credits)		**TOC =**	**$455,634**	**$455,634**	**$122,713**
Total Annualized Cost (Capital Recovery Cost + TOC)		**TAC =**	**$1,047,651**	**$1,047,651**	**$272,298**
Tons VOC Removed @ 95.0% =			307.96	12.29	295.67
Cost per Ton VOC Removed (TAC / Tons VOC Removed) =			**$3,402**	**$85,244**	**$921**

Appendix C: Cost Analyses for Control Devices
Controlling the Bread Baking Line 2

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: May 5, 2011

Catalytic Oxidizer and/or Clean Room / Air Handlers			Units Controlled		
			Proof Box & Oven	Proof Box Only	Oven Only
DIRECT COST (Pollution Control Equipment)		**Unit Cost**	**TOTAL ($)**	**TOTAL ($)**	**TOTAL ($)**
Direct Purchased Equipment					
	Equipment Total (A)	A =	$1,088,000	$1,088,000	$350,000
	Instrumentation	0.10 A	$108,800	$108,800	$35,000
	Sales Taxes	0.07 A	$76,160	$76,160	$24,500
	Freight	0.05 A	$54,400	$54,400	$17,500
Total Equipment Costs (B)		**B =**	**$1,327,360**	**$1,327,360**	**$427,000**
Direct Installation Cost					
	Foundation and Support (Engineering Estimate)		$25,000	$25,000	$10,000
	Auxiliaries - Ductwork / Fittings (CSM Worldwide)		$250,000	$250,000	$70,000
	Handling and Erection (Engineering Estimate)		$15,000	$15,000	$10,000
	Piping (Engineering Estimate)		$5,000	$5,000	$5,000
	Insulation and Painting		$0	$0	$0
	Electrical (Engineering Estimate)		$7,500	$7,500	$5,000
	Site Preparation		$0	$0	$0
	Other		$0	$0	$0
Total Direct Installation Costs			**$302,500**	**$302,500**	**$100,000**
TOTAL Direct Investment (TDI) = **(Total Equipment Cost + Total Direct Installation Cost)**		**TDI =**	**$1,629,860**	**$1,629,860**	**$527,000**
Indirect Installation Costs					
	Engineering and Supervision (Engineering Estimate)		$175,000	$175,000	$150,000
	Lost Production (for retrofit situation)		$166,898	$166,898	$0
	Construction and Field Expenses		$100,000	$100,000	$50,000
	Contractor Fees		$0	$0	$0
	Start-up and Performance Tests (Source Specific Estimate)		$40,000	$40,000	$40,000
	Overall Contingencies (Engineering Estimate)	0.25 TDI	$407,465	$407,465	$131,750
	Working Capital		$0	$0	$0
Total Indirect Installation Costs (TIC)		**TIC =**	**$889,363**	**$889,363**	**$371,750**
TOTAL CAPITAL INVESTMENT (TCI) = (TDI +TIC)		**TCI =**	**$2,519,223**	**$2,519,223**	**$898,750**
ANNUAL OPERATION & MAINTENANCE					
Direct Operating Costs (DA)					
	Operating Labor - Sanitation - 2 People (Plt. Mngr.)		$121,000	$121,000	$0
	Maintenance Labor - Technician - 1 person (Plt. Mngr.)		$65,000	$65,000	$0
	Maintenance Parts & Labor (Engineering Estimate)		$20,000	$20,000	$25,000
	Gas & Electric (Equipment Ratings)		$138,285	$138,285	$41,148
	Replacement Parts		$0	$0	$0
Total Direct Operating Costs (DA)		**DA =**	**$344,285**	**$344,285**	**$66,148**
Indirect Operating Costs (IC)					
	Overhead (Engineering Estimate)		$7,000	$7,000	$7,000
	Insurance & Administrative Costs		$7,000	$7,000	$7,000
	Capital Recovery Cost (Assumes 5.5% interest over 10 years)		$334,225	$334,225	$119,237
Total Indirect Operating Costs (IA)		**IA =**	**$14,000**	**$14,000**	**$14,000**
	Heat Recovery Credits		$0	$0	$0
Total Operating Costs (DA + IA - Heat Recovery Credits)		**TOC =**	**$358,285**	**$358,285**	**$80,148**
Total Annualized Cost (Capital Recovery Cost + TOC)		**TAC =**	**$692,510**	**$692,510**	**$199,385**
Tons VOC Removed @ 95.0% =			228.24	21.096	207.14
Cost per Ton VOC Removed (TAC / Tons VOC Removed) =			**$3,034**	**$32,827**	**$963**

Appendix C: Cost Analyses for Control Devices
Controlling the Bread Baking Line 4

Company Name: Alpha Baking Co., Inc.
Address City IN Zip: 360 N. Fail Road, LaPorte, Indiana 46350
Permit Number: F091-28222-00135
Plt ID: 091-00135
Reviewer: Jason R. Krawczyk
Date: May 5, 2011

Catalytic Oxidizer and/or Clean Room / Air Handlers			Units Controlled		
			Proof Box & Oven	Proof Box Only	Oven Only
DIRECT COST (Pollution Control Equipment)		**Unit Cost**	**TOTAL ($)**	**TOTAL ($)**	**TOTAL ($)**
Direct Purchased Equipment					
	Equipment Total (A)	A =	$1,188,000	$1,188,000	$450,000
	Instrumentation	0.10 A	$118,800	$118,800	$45,000
	Sales Taxes	0.07 A	$83,160	$83,160	$31,500
	Freight	0.05 A	$59,400	$59,400	$22,500
Total Equipment Costs (B)		**B =**	**$1,449,360**	**$1,449,360**	**$549,000**
Direct Installation Cost					
	Foundation and Support (Engineering Estimate)		$25,000	$25,000	$10,000
	Auxiliaries - Ductwork / Fittings (CSM Worldwide)		$230,000	$230,000	$70,000
	Handling and Erection (Engineering Estimate)		$15,000	$15,000	$10,000
	Piping (Engineering Estimate)		$5,000	$5,000	$5,000
	Insulation and Painting		$0	$0	$0
	Electrical (Engineering Estimate)		$7,500	$7,500	$5,000
	Site Preparation		$0	$0	$0
	Other		$0	$0	$0
Total Direct Installation Costs			**$282,500**	**$282,500**	**$100,000**
TOTAL Direct Investment (TDI) = **(Total Equipment Cost + Total Direct Installation Cost)**		**TDI =**	**$1,731,860**	**$1,731,860**	**$649,000**
Indirect Installation Costs					
	Engineering and Supervision (Engineering Estimate)		$175,000	$175,000	$15,000
	Lost Production (for retrofit situation)		$166,898	$166,898	$0
	Construction and Field Expenses		$100,000	$100,000	$50,000
	Contractor Fees		$0	$0	$0
	Start-up and Performance Tests (Source Specific Estimate)		$40,000	$40,000	$40,000
	Overall Contingencies (Engineering Estimate)	0.25 TDI	$432,965	$432,965	$162,250
	Working Capital		$0	$0	$0
Total Indirect Installation Costs (TIC)		**TIC =**	**$914,863**	**$914,863**	**$267,250**
TOTAL CAPITAL INVESTMENT (TCI) = (TDI +TIC)		**TCI =**	**$2,646,723**	**$2,646,723**	**$916,250**
ANNUAL OPERATION & MAINTENANCE					
Direct Operating Costs (DA)					
	Operating Labor - Sanitation - 2 People (Plt. Mngr.)		$121,000	$121,000	$0
	Maintenance Labor - Technician - 1 person (Plt. Mngr.)		$65,000	$65,000	$0
	Maintenance Parts & Labor (Engineering Estimate)		$20,000	$20,000	$25,000
	Gas & Electric (Equipment Ratings)		$162,954	$162,954	$65,817
	Replacement Parts				
Total Direct Operating Costs (DA)		**DA =**	**$368,954**	**$368,954**	**$90,817**
Indirect Operating Costs (IC)					
	Overhead (Engineering Estimate)		$7,000	$7,000	$7,000
	Insurance & Administrative Costs		$7,000	$7,000	$7,000
	Capital Recovery Cost (Assumes 5.5% interest over 10 years)		$351,141	$351,141	$121,559
Total Indirect Operating Costs (IA)		**IA =**	**$14,000**	**$14,000**	**$14,000**
	Heat Recovery Credits		$0	$0	$0
Total Operating Costs (DA + IA - Heat Recovery Credits)		**TOC =**	**$382,954**	**$382,954**	**$104,817**
Total Annualized Cost (Capital Recovery Cost + TOC)		**TAC =**	**$734,095**	**$734,095**	**$226,376**
Tons VOC Removed @ 95.0% =			101.14	8.44	92.70
Cost per Ton VOC Removed (TAC / Tons VOC Removed) =			**$7,258**	**$86,978**	**$2,442**

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Dirk Peterson
Alpha Baking Co., Inc.
360 N Fail Road
LaPorte, IN 46350

DATE: August 9, 2011

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
New Source Review & FESOP
091-28222-00135

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

August 9, 2011

TO: LaPorte County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Alpha Baking Co., Inc.
Permit Number: 091-28222-00135

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	GHOTOPP 8/9/2011 Alpha Baking Co, Inc - LaPorte 091-28222-00135 Final			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Dirk Peterson Alpha Baking Co, Inc - LaPorte 360 N Fail Rd LaPorte IN 46350-8811 (Source CAATS) via confirmed delivery									
2		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 *(Affected Party)*									
3		LaPorte Co Public Library LaPorte Branch, 904 Indiana Ave. LaPorte IN 46350-4307 *(Library)*									
4		LaPorte City Council/ Mayors Ofc. 801 Michigan Avenue LaPorte IN 46350 *(Local Official)*									
5		LaPorte County Commissioners 555 Michigan Avenue # 202 LaPorte IN 46350 *(Local Official)*									
6		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 *(Affected Party)*									
7		LaPorte County Health Department County Complex, 4th Floor, 809 State St. LaPorte IN 46350-3329 *(Health Department)*									
8		Mr. Dick Paulen Barnes & Thornburg 121 W Franklin Street Elkhart IN 46216 *(Affected Party)*									
9		Mr. Bob Qualls 38353 Abruzzi Drive Westland MI 48185-3283 *(Affected Party)*									
10		Mr. Charles Sauer 2110 E. Lincolnway LaPorte IN 46350-8049 *(Affected Party)*									
11		Kelly & Michelle Williams 2106 E. Lincolnway LaPorte IN 46350-8049 *(Affected Party)*									
12		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 *(Affected Party)*									
13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
11			

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