217/782-2113

CONSTRUCTION PERMIT -- REVISED

PERMITTEE

Highland Baking Company
Attn: Jim Rosen
2301 Shermer Road
Northbrook, Illinois 60062

Application No.: 09050073
Applicant's Designation:
Subject: Bread & Roll Bakery
Date Issued:
Location: 2301 Shermer Road, Northbrook, Cook County, 60062

I.D. No.: 031207AED
Date Received: October 19, 2009

This permit is hereby granted to the above-designated Permittee to CONSTRUCT emission unit(s) and/or air pollution control equipment consisting of:

Two (2) Natural Gas-Fired Baking Ovens (one Deck Oven (0.475 mmBtu/hour) and one Rack Oven (0.375 mmBtu/hour))
One (1) 3.0 mmBtu/hour Natural Gas-Fired Tunnel Oven (Tunnel Oven 4) controlled by Catalytic Oxidizer
One (1) Catalytic Oxidizer to control three (3) existing Natural Gas Tunnel Ovens (Tunnel Ovens 1, 2, and 3) and new Tunnel Oven 4

pursuant to the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

1a. This permit is issued based on the construction of the Bread & Roll Bakery not constituting a new major source or major modification pursuant to Title I of the Clean Air Act, specifically the Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 Ill. Adm. Code Part 203. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the volatile organic material (VOM) emissions from the source below the levels that would trigger the applicability of these rules.

b. Operation of the equipment listed above is allowed under this permit until final action is taken on the Federally Enforceable State Operating Permit (FESOP) application for this source.

c. The operation of Tunnel Oven 4 under this construction permit shall not begin until construction of any air pollution control equipment is complete and reasonable measures short of actual operation have been taken to verify proper operation.

d. This permit is effective only upon the withdrawal of Permit Appeal PCB 2010-032.

e. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

3a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.

b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

c. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).

4. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.

5a. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G shall apply only to photochemically reactive material.

b. Pursuant to 35 Ill. Adm. Code 218.302(a), emissions of organic material in excess of those permitted by 35 Ill. Adm. Code 218.301 are allowable if such emissions are controlled by flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water.

6. Pursuant to 35 Ill. Adm. Code 218.980(f), the control requirements in 35 Ill. Adm. Code 218 Subpart TT shall not apply to bakeries.

7a. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.

b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the catalytic oxidizer such that the catalytic oxidizer is kept in proper

working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.

c. The catalytic oxidizer's combustion chamber shall be preheated to at least the manufacturer's recommended temperature but no less than the temperature at which compliance was demonstrated in the most recent compliance test, or 600°F in the absence of a compliance test. This temperature shall be maintained during operation.

d. All baking ovens (including Deck Oven, Rack Oven, and Tunnel Oven 4) shall only be operated with natural gas as the fuel. The use of any other fuel in the baking ovens requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.

8a. The total emissions of VOM other than emissions from natural gas combustion from heating the ovens, (including ethanol emissions from all 26 baking ovens including Deck Oven, Rack Oven, and Tunnel Oven 4) shall not exceed 12.0 tons/month and 96.0 tons/year. These limits are based on the production rates, emission factors of 4.66 lb/ton for loaves and 5.85 lb/ton for buns, rolls and French rolls, and 90% overall control efficiency for the catalytic oxidizer on the four tunnel ovens when in use.

b. The limits on the emissions of VOM (ethanol) from the baking ovens at this source are based on the maximum production rates and maximum actual VOM emissions calculated from the following equation:

$$E = \Sigma(P_i \times EF_i)/2{,}000$$

Where:
E - VOM emissions (tons);

P_i - Product i production rate (tons);

EF_i - Product i Emission Factor (lbs/ton);

Where:
Emissions Factor EF_i shall be calculated using the formula given by AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources (Section 9.9.6, Supplement C, February 1997):

$$EF = 0.95Y_i + 0.19t_i - 0.51Y_S - 0.86t_s + 1.90,$$

Where:
EF - Emission Factor Emission Factor (pounds of VOM emissions per ton of baked product);

Y_i - Initial baker's percent of yeast (yeast percentage with a reference to flour in the dough);

t_i - Total fermentation time (hours);

Y_S - Second baker's percent of yeast (if applicable); and

t_s - Fermentation Time for Second Yeast Percentage (if applicable).

c. Emission and operation of all natural gas combustion units at this source shall not exceed the following limits:

i. Natural Gas Usage: 33.8 mmscf/month, 338.0 mmscf/year

ii. Emissions from the combustion of natural gas:

Pollutant	Emission Factor (lb/mmscf)	Emissions (Tons/Mo)	Emissions (Tons/Yr)
Carbon Monoxide (CO)	84	1.42	14.20
Nitrogen Oxide (NO_x)	100	1.69	16.90
Particulate Matter (PM)	7.6	0.13	1.28
Sulfur Dioxide (SO_2)	0.6	0.01	0.10
Volatile Organic Material (VOM)	5.5	0.10	0.93

These limits are based on the maximum firing rate, 8,760 hours/year of operation and standard emission factors (Tables 1.4-1, 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

d. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

e. The above limitations are being established in this permit pursuant to Title I of the Clean Air Act, specifically 35 Ill. Adm. Code Part 203, Major Stationary Sources Construction and Modification. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the VOM emissions from the Bread & Roll Bakery below the levels that would trigger the applicability of these rules, consistent with the information provided in the above-referenced construction permit application.

9a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:

i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing.

Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.

ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.

b. Testing required by Conditions 10, 11, and 12 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.

10. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.

11a. Pursuant to 35 Ill. Adm. Code 218.105(d)(1), the control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified in 35 Ill. Adm. Code 218.105(f).

b. Pursuant to 35 Ill. Adm. Code 218.105(e)(1), the overall efficiency of the emission control system shall be determined as the product of the capture system efficiency and the control device efficiency or by the liquid/liquid test protocol as specified in 40 CFR 60.433, for each solvent recovery system. In those cases in which the overall efficiency is being determined for an entire line, the capture efficiency used to calculate the product of the capture and control efficiency is the total capture efficiency over the entire line.

c. Pursuant to 35 Ill. Adm. Code 218.105(f), the methods in 40 CFR Part 60, Appendix A, delineated below shall be used to determine control device efficiencies.

i. 40 CFR Part 60, Appendix A, Method 1 or 1A, shall be used for sample and velocity traverses.

ii. 40 CFR Part 60, Appendix A, Method 2, 2A, 2C or 2D, shall be used for velocity and volumetric flow rates.

iii. 40 CFR Part 60, Appendix A, Method 3, shall be used for gas analysis.

iv. 40 CFR Part 60, Appendix A, Method 4, shall be used for stack gas moisture.

v. 40 CFR Part 60, Appendix A, Methods 2, 2A, 2C, 2D, 3 and 4, shall be performed, as applicable, at least twice during each test run.

vi. Use of an adaptation to any of the test methods specified in 35 Ill. Adm. Code 218.105(f)(1), (2), (3), (4), (5) and (6) may not be used unless approved by the Illinois EPA and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Illinois EPA and the USEPA to find that the test methods specified in 35 Ill. Adm. Code 218.105(f)(1), (2), (3), (4), (5) and (6) will yield inaccurate results and that the proposed adaptation is appropriate.

12a. Within 90 days of startup of the catalytic oxidizer associated with the Tunnel Ovens, the VOM emissions from the tunnel ovens shall be measured by an approved testing service during conditions which are representative of maximum emissions. These tests shall determine the VOM emissions destruction, capture and overall control efficiency to demonstrate compliance with Condition 8(a) of this permit.

b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: Refer to 40 CFR Part 60, Appendix A and 40 CFR Part 61, Appendix B for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Volatile Organic Material	USEPA Method 25, 25A if outlet VOM cont. <50 ppmv as C Non CH_4

c. At least 30 days prior to the actual date of testing, the Permittee shall submit a written test plan to the Illinois EPA, Compliance Section. This plan shall include at a minimum:

i. The name (or other identification) of the emission unit(s) to be tested and the name and address of the facility at which they are located;

ii. The name and address of the independent testing service(s) performing the tests, with the names of the individuals who may be performing sampling and analysis and their experience with similar tests;

iii. The specific determinations of emissions and/or performance which are intended to be made, including the site(s) in the ductwork or stack at which sampling will occur;

iv. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum emissions, minimum control performance, the levels of operating parameters for the emission unit, including associated control equipment, at or within which compliance is intended to be shown, and the means by which the operating parameters will be determined;

v. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods. The specific sampling, analytical and quality control procedures which will be used with an identification of the standard methods upon which they are based;

vi. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification;

vii. Any proposed use of an alternative test method, with detailed justification; and

viii. The format and content of the Source Test Report.

d. The Permittee shall provide the Illinois EPA with written notification of testing at least thirty (30) days prior to testing to enable the Illinois EPA to have an observer present. This notification shall include the name of emission unit(s) to be tested, scheduled date and time, and contact person with telephone number.

e. If testing is delayed, the Permittee shall promptly notify the Illinois EPA by facsimile, at least 5 days prior to the scheduled date of testing or immediately, if the delay occurs in the 5 days prior to the scheduled date. This notification shall also include the new date and time for testing, if set, or a separate notification shall be sent with this information when it is set.

f. The Permittee shall submit the Final Test Report(s) for these tests accompanied by a cover letter stating whether or not compliance was shown, to the Illinois EPA without delay, within 30 days after the test results are compiled, but no later than 60 days after the date of testing or sampling. The Final Test Report shall include as a minimum:

i. General information describing the test, including the name and identification of the emission source which was tested, date of testing, names of personnel performing the tests, and Illinois EPA observers, if any;

ii. A summary of results;

iii. Description of test procedures and method(s), including description and map of emission units and sampling points, sampling train, testing and analysis equipment, and test schedule;

iv. Detailed description of test conditions, including:

A. List and description of the equipment (including serial numbers or other equipment specific identifiers) tested and process information (i.e., mode(s) of operation, process rate/throughput, fuel or raw material consumption rate, and heat content of the fuels);

B. Control equipment information (i.e., equipment condition and operating parameters) during testing; and

C. A discussion of any preparatory actions taken (i.e., inspections, maintenance and repair).

v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration. Identification of the applicable regulatory standards that the testing was performed to demonstrate compliance with, a comparison of the test results to the applicable regulatory standards, and a statement whether the test(s) demonstrated compliance with the applicable standards;

vi. An explanation of any discrepancies among individual tests, failed tests or anomalous data;

vii. The results and discussion of all quality control evaluation data, including a copy of all quality control data; and

viii. The applicable operating parameters of the pollution control device(s) during testing (temperature, pressure drop, scrubbant flow rate, etc.), if any.

g. Satisfactory completion of this test so as to demonstrate compliance with applicable emission standards is a prerequisite to issuance of an operating permit, pursuant to 35 Ill. Adm. Code 201.160(a), (b) and (c).

13a. Pursuant to 35 Ill. Adm. Code 218.105(d)(2)(A)(ii), an owner or operator that uses an afterburner or carbon adsorber to comply with any Section of 35 Ill. Adm. Code Part 218 shall use Illinois EPA and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use except as provided in 35 Ill. Adm. Code 218.105(d)(3). The continuous monitoring equipment must monitor for each afterburner which has a catalyst bed, commonly known as a catalytic afterburner, the temperature rise across each catalytic afterburner bed or VOM concentration of exhaust.

b. Pursuant to 35 Ill. Adm. Code 218.105(d)(2)(B), an owner or operator must install, calibrate, operate and maintain, in accordance with manufacturer’s specifications, a continuous recorder on the temperature monitoring device, such as a strip chart, recorder or computer, having an accuracy of ± 1 percent of the temperature measured in degrees Celsius or ± 0.5° C, whichever is greater.

14. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.

15a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:

i. Records addressing use of good operating practices for the catalytic oxidizer associated with the Tunnel Ovens:

A. Records for periodic inspection of the catalytic oxidizer, individual performing the inspection, and nature of inspection;

B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair;

C. Catalytic oxidizer combustion chamber monitoring data;

D. A log of operating time for the catalytic oxidizer, monitoring device, and the associated emission unit(s); and

E. A maintenance log for the catalytic oxidizer and monitoring device detailing all routine and non-routine maintenance performed including dates and duration of any outages.

ii. Total combined baked product from all Deck and Rack Ovens (tons/month and tons/year) for each of the following:

A. Loaves;

B. Total Combined Rolls, Buns, and French Rolls; and

C. Any other products (separated by type, if emission factors are different).

iii. Total combined baked product from all Tunnel Ovens (tons/month and tons/year) for each of the following while the Catalytic Oxidizer was in service:

A. Loaves;

B. Total Combined Rolls, Buns, and French Rolls; and

C. Any other products (separated by type, if emission factors are different).

iv. Total combined baked product from all Tunnel Ovens (tons/month and tons/year) for each of the following, while the Catalytic Oxidizer was not in service.

A. Loaves;

B. Total Combined Rolls, Buns, and French Rolls; and

C. Any other products (separated by type, if emission factors are different).

v. VOM emission factor for each product with supporting calculations (lb/ton);

vi. Natural gas usage (mmscf/month and mmscf/year); and

vii. Monthly and aggregate annual CO, NO_x, PM, SO_2, and VOM emissions from the source with supporting calculations (tons/month and tons/year).

b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

16. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.

17a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.

b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

<u>and</u> one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency

Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

This permit has been revised to incorporate changes to emission limits, recordkeeping and the catalytic oxidizer's operating temperature as requested by the Permittee.

If you have any questions on this permit, please contact Jocelyn Stakely at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed:_____

ECB:JRS:jws

cc: Region 1