

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Incobrasa Industries, Ltd.
Attn: Kerry Fogarty
540 East U.S. 24
Gilman, Illinois 60938

Application No.: 06050042

I.D. No.: 075810AAB

Applicant's Designation:

Date Received: May 11, 2006

Subject: Biodiesel Plant

Date Issued: July 25, 2006

Location: 540 East U. S. 24, Gilman, Iroquois County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a Biodiesel plant including the emission units listed in Attachment A and other ancillary operations, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

Section 1: Plant-Wide Conditions

- 1.1 This permit authorizes construction of a biodiesel plant with a nominal design capacity of 30 million gallons/year adjacent to the Permittee's existing soybean oil extraction plant, which will provide certain support facilities for the new plant, including steam and product loadout.
- 1.2
 - a. This Biodiesel plant shall process not more than 110,000 tons per year of vegetable oil.
 - b. This permit does not authorize any increase in production at the existing soybean oil extraction plant.
- 1.3
 - a. At all times, the Permittee shall maintain and operate the Biodiesel plant and associated emission control system in a manner consistent with good air pollution control practice for minimizing emissions.
 - b. In the event that the operation of the Biodiesel plant results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to process changes or enhancement of controls or stacks, in order to eliminate the odor nuisance.
- 1.4
 - a. This permit is issued based on minimal increases in emissions at the existing plant due to the steam consumption of the Biodiesel plant, which is designed to use a maximum of 2,000 pounds of steam/hour.

Note: The Permittee expects a reduction in combustion emissions due to a net reduction in steam consumption, from the elimination of the deodorization step needed for producing edible oil.

- b. This permit is issued based on minimal emissions of PM attributable to the Biodiesel plant.
 - c. Compliance with annual limits in this permit shall be determined from a running total of 12 months of data.
- 1.5 All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) 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 request for records during the course of a source inspection.
- 1.6 a. Reports of exceedances or deviations from NSPS and NESHAP requirements shall be submitted in accordance with applicable provisions of the NSPS and NESHAP.
- b. If there is an exceedance of or deviation from the requirements of this permit that is not addressed by reporting required by the NSPS or NESHAP, the Permittee shall submit a report to the Illinois EPA within 30 days after the exceedance/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.
- 1.7 Two 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

Telephone: 217/782-5811 Facsimile: 217/524-4710

and one 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
2009 Mall Street
Collinsville, Illinois 62234

Telephone: 618/346-5120 Facsimile: 618/346-5155

- 1.8 The Permittee is allowed to operate the Biodiesel plant under this construction permit until the CAAPP Permit is next revised to address this plant.

Section 2: Unit-Specific Conditions

2.1 Process Equipment Venting to a Control Device

2.1.1 Description

The Biodiesel Plant consists of reactors, tanks, distillation columns, condensers, piping, and other components assembled for the purpose of transesterification of soybean oil, using alcohol (methanol) to produce fuel for Diesel engines and glycerol, as a co-product. The soybean oil and both products have very low vapor pressure, leaving the alcohol as the only material that has a potential for emissions. All of the process equipment in this plant that contains alcohol is vented to a multi-stage control train consisting of two oil adsorbers and one water absorber. The control train generates product streams that serve as input to other parts of the process.

- 2.1.2 a. i. The distillation units in the Biodiesel plant are affected facilities subject to the New Source Performance Standards (NSPS), 40 CFR 60, Subpart NNN, Standards of Performance of Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.
- ii. For these affected facilities the Permittee shall comply with all applicable provisions of 40 CFR 60, Subpart NNN and related requirements in 40 CFR 60, Subpart A, General Provisions.

Note: Pursuant to 40 CFR 60.660(c)(6), an affected facility operated with a vent stream flow rate less than 0.008 scm/min (0.2825 scfm) is exempt from all provisions of Subpart NNN except for the test method and procedure and the recordkeeping and reporting requirements in 40 CFR 60.664(g) and 60.665(i), (l)(5) and (o).

- b. The miscellaneous organic chemical manufacturing process units (MCPU) in the Biodiesel plant, as defined by 40 CFR 63.2550, are affected sources subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing, 40 CFR 63 Subpart FFFF, for which the compliance date is November 11, 2006.

- 2.1.3 This permit is issued based on the reactors in the Biodiesel plant not being subject to 40 CFR 60, Subpart RRR, Standards of

Performance for Volatile Organic Emissions for Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes, because the provisions of this subpart apply to each affected facility including each reactor process not discharging its vent stream into a recovery system, pursuant to 40 CFR 60.700(b)(1).

- 2.1.4 a. All storage tanks, settling tanks, reactors, and equipment containing methanol, mixtures of other materials with methanol or in contact with methanol in the Biodiesel plant shall be vented to the central VOM/HAP emission control system.
- b. The VOM/HAP control system shall achieve at least 98 percent control for emissions of HAPs and VOM.

2.1.5 The stack emissions of volatile organic material (VOM) from the Biodiesel plant shall not exceed 1.0 pounds/hour and 4.4 tons/year. These limits are based on maximum production rates and at least 98% control by the emission control system.

- 2.1.6 a. Within 180 days of initial startup, the stack VOM and HAP (hexane and methanol) emissions of the Biodiesel plant (control system stack) shall be measured during conditions which are representative of maximum emissions.
- b. The following methods and procedures shall be used for testing of emissions, unless the Illinois EPA approves use of other USEPA Reference method: Refer to 40 CFR 60, Appendix A, 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
VOM and HAPs	USEAP Method 18 and Method 25 or 25A (if outlet VOM cont. < 50 ppmv as C Non CH4)

- c. At least 60 days prior to the actual date of testing, a written test plan shall be submitted to the Illinois EPA. This plan shall describe the specific procedures for testing, including as a minimum:
 - i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating

parameters for the emission unit and any control equipment will be determined.

- iii. The specific determinations of emissions and operation, which are intended to be made, including sampling and monitoring locations.
 - iv. The test method(s), which will be used, with the specific analysis method, if the method can be used with different analysis methods.
 - v. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - vi. The format and content of the Source Test Report.
- d. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of thirty days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.
- e. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized. The Final Report shall include as a minimum:
- i. A summary of results.
 - ii. General information.
 - iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.
 - iv. Detailed description of test conditions, including:
 - A. Process information, i.e., mode(s) of operation, process rate, e.g. fuel or raw material consumption; and
 - B. Control equipment information, i.e., equipment condition and operating parameters during testing.

- v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

2.1.7 The Permittee shall monitor (i.e., measure and automatically record) the following information for each scrubber in the control system:

- a. Scrubbant flow rate (gallons/minute, hourly average); and
- b. Pressure drop.

2.1.8 a. The Permittee shall fulfill applicable recordkeeping requirements of the NESHAP and NSPS.

- b. The Permittee shall keep a file with the design information and engineering calculations for the efficiency of the control system for VOM and HAP (methanol) emissions.

c. The Permittee shall maintain logs of inspection, maintenance, and repairs for the Biodiesel plant and associated control system that, at a minimum shall identify measures taken as good air pollution control practice.

d. The Permittee shall maintain records of the following items:

- i. Amount of vegetable oil used (tons/month and tons/year);
- ii. Amount of alcohol (methanol) used (tons/month and tons/year);
- iii. HAP content of vegetable oil (% by weight); and
- iv. VOM and HAP emissions with supporting calculations (tons/month and tons/year).

2.1.9 a. The Permittee shall fulfill all applicable notification and reporting requirements of the NESHAP and NSPS for the units in the Biodiesel plant.

2.2 Valves, Pumps and Other Components

2.2.1 The Biodiesel plant includes pumps, valves, flanges and other components that emit VOM when they leak. These emissions are minimized by design and routine maintenance of such components and by a formal Leak Detection and Repair Program.

- 2.2.2 a. The group of equipment, as defined by 40 CFR 60.481, in the Biodiesel plant is an affected facility subject to 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in Synthetic Organic Chemicals Manufacturing Industry.
- b. The Permittee shall comply with the applicable provisions of the National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing 40 CFR 63.2480 for equipment leaks.

2.2.3 This permit is issued based on negligible emissions of VOM from the Biodiesel plant other than stack emissions. For this purpose, emissions from all equipment together shall not exceed nominal emission rates of 0.44 tons/year, total.

2.2.4 Recordkeeping Requirements

The Permittee shall maintain the following records related to leaking components:

- a. The Permittee shall fulfill applicable recordkeeping requirements of the NSPS, including maintain the following records:
 - i. Records identifying units that are subject to the NSPS, i.e., are in VOC service.
 - ii. Records identifying subject units that are not in heavy liquid service.
 - iii. Records documenting performance of required leak monitoring.
 - iv. Records for other leaks, which are identified by means other than monitoring.
 - v. Records documenting timely repair of leaks and performance of follow-up monitoring.
 - vi. Records on at least an annual basis of the VOM and HAP emissions attributable to affected components, with supporting documentation and calculations.

2.2.5 Reporting Requirements

The Permittee shall fulfill all applicable notification and reporting requirements of the NSPS for the affected components.

2.2.6 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to repair and replace components without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102.

2.3 Support Equipment

2.3.1 Description

The Biodiesel plant utilizes support equipment, such as tanks storing acid and alkali, a mixer, a centrifuge, and glycerol and water distillation units that handle low-vapor pressure materials, which are not vented to the control system.

2.3.2 If the acid tank were used for sulfuric acid, the tank would be subject to 35 IAC 214.303, which provides that, no person using sulfuric acid shall cause or allow the emission of sulfuric acid and/or sulfur trioxide from all other similar emission sources at a plant or premises to exceed 0.10 pounds in any one hour period for sulfuric acid usage less than 1,300 tons/year; of 0.50 pounds per ton of acid used for sulfuric acid usage greater than or equal to 1,300 tons/year.

2.3.3 At all times, the Permittee shall maintain and operate all support equipment in a manner consistent with good air pollution control practice for minimizing emissions.

2.3.4 This permit is issued based on negligible emissions from each piece of support equipment. For this purpose, emissions shall not exceed nominal emission rates of 0.4 tons/year.

If you have any questions on this, please call Kevin Hecht at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:KTH:psj

cc: Region 3

ATTACHMENT A

Listing of Identified Emission Units in the Biodiesel Plant

Operation	Emission Unit/Process Equipment	Emission Control Equipment
Process Equipment and Tanks	Reactors MX-4030, HM-4030, MX-404, HM-4040	Control Train Oil Adsorber (Scrubber) OA-4020 Oil Adsorber (Scrubber) OA-4010 Water Adsorber (Scrubber) WA-4200
	Methanol Condenser CD-4220B, CD-4220C, CD-4220D	
	Methanol Rectification Column CR-4220	
	Crude Glycerin Storage Tank TK-4130	
	Neutral Glycerin Tank TK-4160	
	Dried Methanol Tank TK-4240	
	Methanol Storage Tanks TK-4230A, TK-4230B, TK-4230C, TK-4230D	
	Ester Wash TK-4050, TK-4060	
	Decanter SE-4030, SE-4040A, SE-4040B, SE-4070	
	Catalyst Tank TK-4300	
Piping Components	Pumps, Valves, and Flanges	Leak Detection and Repair
Support Equipment	Acid Storage Tank	Vapor Entrainment Basin
	Alkali Storage Tank	
	Mixer MX-4090	None
	Centrifuge CE-4090	
	Glycerin Distillation CR-2220	
Water Distillation CR-4170		

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