



# Florida Department of Environmental Protection

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## PERMITTEE

INEOS New Planet BioEnergy  
2600 South Shore Blvd, Suite 500  
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League City, TX 77573

Authorized Representative:  
Mr. David King, President

Air Permit No. 0610096-002-AC  
Permit Expires: September 30, 2014

Indian River County BioEnergy Facility  
Minor Source Air Construction Permit  
Biomass to Ethanol Production

## PROJECT

This is the final air construction permit, which authorizes construction of a waste-to-ethanol production facility using biomass feedstock made up of vegetative yard waste and construction and demolition (C&D) debris. The new facility will be located at 925 74th Avenue in Vero Beach, Florida in Indian River County (IRC). The proposed facility is expected to produce up to 8 million gallons of ethanol per year, and although it will generate a small amount of electricity available for commercial use (about 6 megawatts gross, with 2 megawatts net exported), it will be categorized under Standard Industrial Classification Code No. 2869—Industrial Organic Chemicals, Not Elsewhere Classified. The UTM coordinates are Zone 17, 550.7 km East and 3,051.3 km North. As noted in the Final Determination provided with this final permit, no comments were received and changes were made to the draft permit.

This permit is organized into the following sections: Section 1 (General Information), Section 2 (Administrative Requirements), Section 3 (Emissions Unit Specific Conditions) and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix CF of Section 4 of this permit.

## STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C., but it is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C., for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection (Department) in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

Jeffery F. Koerner, Administrator  
Office of Permitting and Compliance  
Division of Air Resource Management

9-27-11

(Date)

**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on 9-27-11 to the persons listed below.

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Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED,**

on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Lynn Searce          September 27, 2011  
(Clerk)                                  (Date)

## SECTION I. GENERAL INFORMATION

*Changes to Permit 0610096-001-AC are indicated by double-underline (additions) and strikethrough (~~deletions~~). Only those pages from the appendices that were modified by this permitting action are included here.*

### PROPOSED PROJECT

The project is for the construction of a waste biomass-to-ethanol production facility. The primary feedstock will be biomass ~~collected by~~ from the IRC county's curbside collection program, delivered to the county's collection centers, or delivered directly to the facility by the public ~~to one of the IRC collection centers~~. On an annual average, yard waste vegetative matter will make up approximately 90 percent of the feedstock. The remainder of the biomass feedstock will consist of clean woody C&D debris, ~~currently collected by IRC in a dedicated cell at the sanitary landfill~~, and small amounts of municipal solid waste (MSW) used on a trial basis. In this permit, "MSW" refers to solid waste other than yard trash and clean debris, as those terms are defined at Rule 62-210.200, F.A.C. (see Appendix BMP).

The INEOS bio ethanol technology process will gasify the biomass feedstock. The organic material will not be directly combusted; instead, oxygen will be supplied to the gasifier which converts the feed material into a synthetic gas (syngas) consisting of carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), hydrogen (H<sub>2</sub>) and other hydrocarbons.

This syngas will not be directly combusted either. It will be cleaned and cooled and then fed into a fermentation system where proprietary bacterial metabolic action converts the syngas into ethanol. The ethanol will then be distilled, dehydrated, stored and loaded into dedicated ethanol tanker trucks. Off gases from the fermentation processes, ~~however,~~ will be treated scrubbed and then routed to a vent gas boiler for combustion. Steam from the fermentation and distillation vent gas boiler—as well as steam from waste heat recovery at the gasifiers—will be routed to a turbine to generate electricity.

This project will consist of the following emissions units (EU).

EU ID No.	Emission Unit Description
001	Materials Handling Area
002	Feedstock Dryers No. 1 and No. 2
003	Gasification, Fermentation and Distillation Systems
004	Distillation Unit Fugitive Emissions
005	<del>Desulfurization Unit Oxidation Tank</del>
006	Vent Gas Boiler
007	Tank Farm
008	Loadout Flare
009	<del>Gasifier Flare</del>
010	Syngas Flare

This permit (0610096-002-AC) supersedes and replaces the previous construction permit issued for this project (0610096-001-AC). Major changes from the original construction permit consist of the following:

- Modified materials handling area (EU-001) to reflect four smaller diesel engines instead of one large engine.
- Updated fermentation and distillation system requirements (EU-003) to reflect two scrubbers instead of a single scrubber and desulfurization unit.

## SECTION 1. GENERAL INFORMATION

- Altered the MSW trial period (EU-003) so that instead of requiring a follow-on permit application to authorize routine processing of MSW, this permit will grant authority to process MSW on a routine basis—but only at feed rates for which compliance has been demonstrated.
  - Authorized installation of a larger vent gas boiler (EU-006) and required installation of post-combustion controls (sorbent injection followed by a fabric filter).
  - Increased the authorized capacity (gallons) of the product and denaturant storage tanks (EU-007).
- Other minor changes from the original construction permit consist of typographical and administrative corrections in addition to the following:

- Updated contents and due date for the monthly operations summary.
- Added explicit definition of standard conditions (temperature and pressure).
- Clarified roadway sweeping requirement from "monthly" to "as required" (EU-001).
- Clarified that compliance tests for the feedstock dryers (EU-002) are required prior to operation permit renewal (i.e., not annually).
- Modified sorbent from lime to sodium bicarbonate for the dry gas cleaning (EU-003) and vent gas boiler (EU-006) systems.
- Modified the specifications and record keeping requirements for the loadout and syngas flares (EU-008 and EU-010).

This permit revokes the authority to construct the following EU.

<u>(Former)</u> <u>EU ID No.</u>	<u>(Inactive)</u> <u>Emission Unit Description</u>
<u>005</u>	<u>Desulfurization Unit Oxidation Tank</u>
<u>009</u>	<u>Gasifier Flare</u>

### FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400, F.A.C. (PSD).

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

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1. Permitting Authority: The Permitting Authority for this project is the Bureau of Air Regulation Office of Permitting and Compliance in the Division of Air Resource Management of the Department (2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400). ~~The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the Air Resource Section of the Department's Central District Office at: 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767. The Permitting Authority for permits to operate this facility is the Air Resource Section of the Department's Central District Office (3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767).~~
2. Compliance Authority: The Compliance Authority for this project is the Air Resource Section of the Department's Central District Office (3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767). All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Compliance Authority Air Resource Section of the Department's Central District Office at: 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767.
3. Appendices: The following Appendices are attached as a part of this permit and must be complied with by the permittee:
  - a. Appendix CF: Citation Formats, Acronyms and Glossary of Common Terms;
  - b. Appendix GC: General Conditions;
  - c. Appendix CC: Common Conditions;
  - d. Appendix CTR: Common Testing Requirements;
  - e. Appendix BMP: Best Management Practices;
  - f. Appendix LDAR: Preliminary Leak Detection and Repair (LDAR) Program;
  - g. Appendix GP: Identification of Applicable General Provisions from Title 40, Part 60 of the Code of Federal Regulation (C.F.R.) 40 C.F.R. 60;
  - h. Appendix Kb: New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels, 40 C.F.R. 60, subpart Kb;
  - i. Appendix VVa: NSPS for Equipment Leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI), 40 C.F.R. 60, Subpart VVa;
  - j. Appendix AAAA: NSPS for Small Municipal Waste Combustion Units, 40 C.F.R. 60, subpart AAAA;
  - k. Appendix IIII: NSPS for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. 60, subpart IIII; and
  - l. Appendix ZZZZ: National Emission Standards for HAP (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 C.F.R. 63, subpart ZZZZ.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S. Florida Statutes; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time.  
[Rule 62-4.080, F.A.C.]

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

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6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification.  
[Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation: At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.  
[Rule 62-212.400(12), F.A.C.]
8. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions units. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority.  
[Rules 62-4.030, 62-4.050 and 62-4.220, F.A.C. and Chapter 62-213, F.A.C.]
9. Monthly Operations Summary: By the last tenth calendar day of each month, the permittee shall record the following parameters in a written or electronic log for the previous month of operation. (For example, the monthly operations summary for June must be recorded by July 31.) The monthly operations summary shall be kept and made available to the Compliance Authority upon request.
- ~~a. Hours of operation and total heat input (MMBtu) for the vent gas boiler;~~  
~~b. Tons of feedstock processed in the gasifier by type of material (biomass and MSW);~~  
~~c. Cubic feet of syngas, natural gas and landfill gas fired in the vent gas boiler;~~  
~~d. Ethanol production and final (denatured) ethanol product loadout (gallons); and~~  
~~e. Updated 12-month rolling totals for each of these operating parameters.~~
- ~~The Monthly Operations Summary shall be kept and made available to the Compliance Authority upon request.~~
- a. Gallons of ultra low sulfur diesel fuel used in the shredder and screen engines (see Condition 3.A.11);  
b. Total combined dry tons of biomass and MSW feedstock processed in both dryers (see Condition 3.B.11);  
c. Gallons of ethanol produced (see Condition 3.C.18);  
d. Hours of operation and million British thermal units (MMBtu) of total heat input for the vent gas boiler (see Condition 3.E.13);  
e. Standard cubic feet of syngas, natural gas and landfill gas fired in the vent gas boiler (see Condition 3.E.13);  
f. Gallons of final (denatured) ethanol product loadout (see Condition 3.F.7);  
g. Standard cubic feet of displaced vapors to the loadout flare and the duration of each flare event during the month (see Condition 3.G.7);  
h. Standard cubic feet of displaced vapors to the syngas flare, the duration of each flare event during the month and the reason for flaring (see Condition 3.H.5); and

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

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- i. Updated 12-month rolling totals for each of these operating parameters.  
[Rule 62-4.070(3), F.A.C.]
10. Annual Operating Report: The Annual Operating Report for Air Pollutant Emitting Facility (DEP Form No. 62-210.900(5)) shall be completed each year and submitted to the ~~appropriate Department of Environmental Protection (DEP) division, district or DEP-approved local air pollution control program office~~ Compliance Authority by April 1 of the following year.  
[Rule 62-210.370(3), F.A.C.]
11. Reasonable Precautions to Prevent Emissions of Unconfined Particulate Matter (PM): The facility shall take the following reasonable precautions to prevent emissions of unconfined PM:
  - a. All normally traveled roads on the site shall be paved.
  - b. Access paths used exclusively for maintenance purposes may be unpaved.
  - c. Speed limit signs will be posted.
  - d. The unpaved areas of the facility shall be maintained and either sodded or landscaped as necessary.
  - e. The conveyor systems outside of the materials handling area shall be fully enclosed.
  - f. Hoods, fans, filters or similar equipment shall be used to contain, capture or vent particulate matter.
  - g. The ash shall be wetted before being stored in the ash handling roll-off bins.[Rule 62-296(4)(c), F.A.C.]
12. Objectionable Odors Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. Prior to the MSW trial period outlined in ~~Condition C.40~~ 3.C.11 of this permit, the permittee shall submit an odor control plan to the Compliance Authority that addresses how the facility will control MSW odors, such as through implementing a "first in/first out" material handling practice; storing MSW in an enclosed area; limiting on-site storage of MSW to 48 hours or less; or other procedures. After the conclusion of the MSW trial period, the permittee shall revise and resubmit the odor control plan to the Compliance Authority along with the results of any repeat testing as per Condition 3.C.11.c.  
[Rule 62-296.320(2), F.A.C. and Rule 62-4.070, F.A.C. Reasonable Assurance]
13. Standard Conditions: As used in this permit, "standard conditions" refers to a temperature of 68 °F and a pressure of 14.7 pounds per square inch absolute (psia).  
[Rule 62-210.200, F.A.C. Definition of "Standard Conditions"]
14. Dried Tons: As used in this permit, "dried tons" refers to solid material with 15 percent moisture content.  
[Rule 62-4.070, F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Materials Handling Area (EU-001)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
001	<u>Materials Handling Area:</u> Trucks deliver vegetative waste and clean woody construction debris to the tipping floor of the materials handling area. Vegetative waste is primarily yard waste <u>or land clearing debris</u> from the county's curbside collection program, <del>or yard waste or land clearing debris delivered to the county's collection centers, or delivered directly to the facility by the public.</del> The C&D debris is material diverted from a dedicated cell of the county landfill. MSW will be stored in <u>accordance with the submitted odor control plan an enclosed area.</u> Vegetative waste and C&D debris will be stored outdoors on a hard-packed gravel area <u>in windrows to provide for drying.</u> <del>The grinder is powered by a Caterpillar C-18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or equivalent.</del> <u>Feedstock preparation machinery will include two slow speed shredders (or grinders, referred to as shredders throughout this permit and associated documents) and two trommel screens.</u>

#### APPLICABLE STANDARDS AND REGULATIONS

1. NSPS for Stationary Compression Ignition Internal Combustion Engines (Appendix IIII): 40 C.F.R. part 60, subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines—applies to the diesel engines powering the grinder shredders and screens. The permittee shall comply with the requirements of the NSPS, included as Appendix IIII. [Application No. 0610096-0042-AC and ~~Rule 62-4.070(3), F.A.C. Reasonable Assurance Rule 62-296.100(3), F.A.C.~~]
2. NESHAP for Stationary RICE (Appendix ZZZZ): 40 C.F.R. part 63, subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines—applies to the diesel engines powering the grinder shredders and screens. The permittee shall comply with the requirements of the NESHAP, included as Appendix ZZZZ. [~~Rule 62-4.070(3), F.A.C. Reasonable Assurance Rule 62-296.100(3), F.A.C.~~]

#### EQUIPMENT

3. Feedstock System: The permittee is authorized to install the following major pieces of equipment for feedstock delivery, handling and processing:
  - a. Tipping floor;
  - b. Front-end loaders;
  - c. Hard-packed gravel storage area for biomass (authorized feedstock other than MSW, see Condition A.4 3.A.4 of this permit);
  - d. Paved storage area for MSW inside a building;
  - e. Conveyer systems; and
  - f. Relocateable shredding/~~grinding~~ equipment including a stationary diesel engine and screening equipment.; and
  - ~~g. Screening equipment.~~

[Application No. 0610096-0042-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### PERFORMANCE RESTRICTIONS

4. Authorized Feedstock: Vegetative matter, yard waste, land clearing debris, untreated wood and MSW is authorized to be stored in the materials handling area. For purposes of this permit, "biomass" refers to authorized feedstock other than MSW. [Application No. 0610096-001-AC; Rule 62-210.200, F.A.C. Definitions of "Yard Waste," "Land



### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Materials Handling Area (EU-001)

Clearing Debris," "Untreated Wood" and "Solid Waste"; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

5. Restricted Operation: The hours of operation of this emissions unit are not limited (8,760 hours per year).  
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
6. Restricted Fuel Use: ~~The diesel engines associated with the shredder/grinder is limited to using no more than 58,980 gallons of ultra low sulfur diesel fuel (maximum 15 ppm sulfur by weight) per year on a rolling 12-month basis powering the shredders and screens shall be fired only with ultra low sulfur diesel fuel (maximum 15 ppm sulfur by weight). Fuel use for the two shredder engines is limited to no more than a combined total of 82,368 gallons per year on a rolling 12-month basis. Fuel use for the two screen engines is limited to no more than a combined total of 16,848 gallons per year on a rolling 12-month basis.~~  
[Application No. 0610096-002-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

#### WORK PRACTICE STANDARDS

7. Feedstock Storage:
  - a. Biomass shall be delivered directly to the tipping floor unless the tipping floor cannot accommodate additional material. The tipping floor shall be designed to accommodate feedstock for up to two days (48-hour period) of operation.
  - b. Additional biomass shall be delivered to the hard-packed gravel storage area.
  - c. Storage of MSW shall be in accordance with the submitted odor control plan limited to an enclosed building.
  - d. ~~Any MSW which has been at the facility for more than 48 hours shall be returned to the county landfill.~~  
[Application No. 0610096-002-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
8. Roadways: The plant roadways shall be paved and during dry conditions wetted sufficiently to maintain surface moisture to minimize fugitive dust emissions. Roadways shall be swept ~~at least monthly as required~~ with a vacuum sweeper in good working order to prevent the buildup of dirt and silt on the roadway surfaces. ~~A record of the sweeping shall be kept and made available to the Compliance Authority upon request.~~  
[Application No. 0610096-001-AC; Rule 62-296(4)(c), F.A.C. Unconfined Emissions of Particulate Matter; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
9. Traffic Control: The feedstock delivery vehicles shall be accepted at the site on a 12 hours per day (7:00 AM to 7:00 PM), seven days per week basis. Speed limit signs shall be posted. The feedstock delivery vehicles shall be weighed on entry and exit from the site.  
[Application No. 0610096-001-AC; Rule 62-296(4)(c), F.A.C. Unconfined Emissions of Particulate Matter; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
10. Treated Wood Management Plan: To ensure that wood treated with chromated copper arsenate is not included with the C&D debris delivered to the facility for use as feedstock, the permittee shall only accept shredded or mulched C&D debris from a source complying with a treated wood management plan meeting the requirements of Rule 62-701.730(20), F.A.C. The permittee shall implement the treated wood management plan in Appendix BMP to screen any C&D debris that is to be shredded or mulched at the facility, unless the delivered C&D debris has been screened at its source as per a treated wood management plan meeting the requirements of Rule 62-701.730(20), F.A.C.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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#### A. Materials Handling Area (EU-001)

##### RECORDS AND REPORTS

11. Recordkeeping Requirements: The permittee shall maintain monthly records of ~~the amount of biomass and MSW feedstock delivered, on a tons per day, as received basis and an annual average tons per day average.~~ The permittee shall maintain monthly records of ultra low sulfur diesel fuel use ~~in the grinder,~~ and the permittee shall maintain fuel delivery receipts identifying the sulfur content of the delivered diesel fuel. These records shall be kept and made available to the Compliance Authority upon request.

[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Feedstock Dryers No. 1 and No. 2 (EU-002)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
002	<p><u>Feedstock Dryers No. 1 and No. 2:</u></p> <p>The two feedstock dryers (Carrier Model QAD-3660S-20'-6"-5 HP or equivalent) receive feedstock from the storage piles and use low-pressure steam, provided by the boiler and heat recovery systems, to reduce the feedstock moisture to around 15 percent. The dryers use 8,960 pounds per hour of the steam to heat the inlet to about 250 °F. Flue gas from the dryers is vented to the atmosphere through a dust control system. PM emissions from the dryer exhaust are controlled with a baghouse. The dried feedstock is then sent to the gasifiers by way of a covered conveyor system.</p>

#### EQUIPMENT

1. Feedstock dryers: The permittee is authorized to install two vibrating fluidized bed dryers that use low-pressure steam to reduce the feedstock moisture to approximately 15 percent.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
2. Air Pollution Control Equipment: To comply with the emission standards of this permit, the permittee shall install the following air pollution control equipment on each feedstock dryer.
  - a. Baghouse: The permittee shall install a baghouse to remove PM emissions from the dryer exhaust. The baghouse shall be designed to achieve a PM emissions rate of 0.005 grains per dry standard cubic meter (~~gr/dsem~~).
  - b. VOC control: The permittee is authorized to vent the dryer exhaust to a VOC control device, if necessary, to meet the VOC emission limit in ~~B.7~~ Condition 3.B.7. The choice and design of the control device, if needed, will be made after the initial compliance test data are available. The permittee shall submit the recommended design for a VOC control device to the Permitting Authority prior to installation.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
3. Enclosed Conveyor System: The permittee shall install an enclosed conveyor system to transport dried feedstock from the dryers to the gasification system.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### PERFORMANCE RESTRICTIONS

4. Permitted Capacity: ~~The total maximum permitted capacity for both dryers combined is 365 dried tons per day (15% moisture content) on an annual average basis. Feedstock drying for both dryers combined is limited to an annual average throughput of no more than 425 tons per day (27 percent moisture content) on a rolling 12-month basis.~~  
[Application No. 0610096-002-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]  
*{Permitting Note: 425 tons per day at 27 percent moisture is equivalent to 365 tons per day at 15 percent moisture.}*
5. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).  
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

**B. Feedstock Dryers No. 1 and No. 2 (EU-002)**

**EMISSIONS STANDARDS**

6. Visible Emission PM Standard: Visible PM emissions from each feedstock dryer shall not exceed 5 percent opacity ~~0.005 gr/dsem~~.  
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
7. VOC Standard: VOC emissions from each feedstock dryer shall not exceed 3.8 pounds per hour (lbs/hr).  
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

**TESTING REQUIREMENTS**

8. Initial Compliance Tests: Each feedstock dryer stack shall be tested to demonstrate initial compliance with the ~~emissions~~ standards for visible emissions PM and VOC. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rules 62-4.070(3), F.A.C. Reasonable Assurance and Rule 62-297.310(7)(a)1., F.A.C.]
9. ~~Annual Compliance Tests~~: ~~Prior to obtaining a renewed operation permit, each feedstock dryer stack shall be tested to demonstrate compliance for PM and VOC.~~  
~~[Rule 62-4.070(3), F.A.C. Reasonable Assurance and Rule 62-297.310(7)(a)3., F.A.C.]~~
10. ~~Waiver of Annual PM Test~~: ~~The requirement to conduct an annual PM test is waived provided each feedstock dryer meets an alternative visible emissions standard of 5% opacity. In place of the annual PM test, the permittee shall conduct a visible emissions evaluation for each feedstock dryer stack.~~  
~~[Rule 62-297.620(4), F.A.C.]~~
9. Compliance Tests Prior to Permit Renewal: Prior to obtaining a renewed operation permit, each feedstock dryer stack shall be tested to demonstrate compliance with the visible emissions and VOC emission limits in Conditions 3.B.6 and 3.B.7.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance and Rule 62-297.310(7)(a)3., F.A.C.]
10. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
5	<del>Determination of Particulate Emissions</del>
9	Visual Determination of the Opacity of Emissions from Stationary Sources.
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

The above methods are described in Appendix A of 40 C.F.R. 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other method may be used unless prior written approval is received from the Department.

[Rules 62-204.800 and 62-297.100, F.A.C. and Appendix A of 40 C.F.R. 60]

**RECORDS AND REPORTS**

11. Recordkeeping Requirements: The permittee shall maintain records of the amount of total combined biomass and MSW feedstock processed in both dryers on a ~~dry~~ tons per day basis and an annual average ~~dry~~ tons per day, rolling 12-month basis (27 percent ~~45%~~ moisture content). These records shall be kept and made available to the Compliance Authority upon request.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### C. Gasification, Fermentation and Distillation Systems (EU-003)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
003	<u>Gasification, Fermentation and Distillation Systems:</u> Two gasifiers heat feedstock through starved-air pyrolysis to produce syngas, a mixture of CO, CO <sub>2</sub> , H <sub>2</sub> and other hydrocarbons. The syngas is cleaned and bubbled through the fermentation system. The distillation system extracts ethanol from the filtered fermentation broth. This emissions unit also includes equipment to accomplish waste heat recovery; dry gas cleaning; syngas quench and compression; <u>and</u> vent gas scrubbing <u>and sulfur removal</u> .

#### APPLICABLE STANDARDS AND REGULATIONS

1. NSPS for Equipment Leaks of VOC (Appendix VVa): 40 C.F.R. part 60, subpart VVa—Standards of Performance for Equipment Leaks of VOC in the ~~Synthetic Organic Chemicals Manufacturing Industry~~ SOCMI for Which Construction, Reconstruction or Modification Commenced After November 7, 2006—applies to each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, flange or other connector that contains or contacts a process fluid that is at least 10 percent VOC by weight. It also applies to any devices or systems that it requires to be installed. The permittee shall comply with the requirements of the NSPS, included as Appendix VVa, for all subject equipment.  
[Application No. 0610096-001-AC and Rule 62-296.100(3), F.A.C.]
2. Closed Vent Systems and Control Devices: During normal operation, off-gas from the fermentation and distillation systems shall be collected and routed via closed vent systems to ~~vent gas scrubbing and sulfur removal scrubbers~~ scrubbers (the process vent gas scrubber or distillation overhead scrubber, respectively) prior to being routed to a control device. The control device for these streams shall be the vent gas boiler (EU-006).  
[Application No. 0610096-00+2-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
3. Temporary Preliminary LDAR Program: Because the final list of subject equipment will not be known until the facility's design is complete, the permittee shall implement the preliminary LDAR program contained in Appendix LDAR until a final LDAR program is submitted to the Compliance Authority. The permittee shall submit the final LDAR plan and otherwise demonstrate compliance with the NSPS, included as Appendix VVa, within 180 days of initial startup.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### EQUIPMENT

4. Gasifiers: The permittee is authorized to install two gasifiers, each consisting of a two-stage, upper and lower gasification zone with a dedicated ram feeder to feed the dried feedstock. The gasifiers shall be equipped with emergency vent valves that can route syngas to the syngas flare (EU-010) in the event of emergencies such as a failure of the electrical supply to the plant or high pressure in the system caused by the blockage of downstream equipment. The permittee is authorized to install ancillary equipment to cool the syngas and to recover waste heat through the boiler feed water preheater.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
5. Dry Gas Cleanup Packages: The permittee is authorized to install a two dry gas cleanup packages, each of which consists of ~~lime and~~ activated carbon and sodium bicarbonate injection followed immediately by a fabric filter. Exhaust from the fabric filter is not emitted to the atmosphere, but is routed to syngas quench and compression.  
[Application No. 0610096-00+2-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### C. Gasification, Fermentation and Distillation Systems (EU-003)

6. Syngas Quench and Compression: The permittee is authorized to install a quench tower to further cool the cleaned and filtered syngas, an electrical driven gas compression system and ancillary equipment including a cooled water heat exchanger and a knock-out drum.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
7. Fermentation and Distillation System: The permittee is authorized to install a fermentation and distillation system consisting of fermentation vessels, distillation feed tank, distillation tower, reflux drum and dehydration system.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
8. Vent Gas Scrubbing: The permittee is required to install a vent scrubber column to remove residual ethanol from the fermentation off-gas process vent gas scrubber for the fermentation off-gases. Emergency release from the process vent gas scrubber shall be routed to the syngas flare (EU-010).  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
9. Desulfurization Unit Distillation Overhead Scrubbing: The permittee is required to install a desulfurization unit that uses an iron chelate solution to remove hydrogen sulfide (H<sub>2</sub>S) from the vent gas prior to combustion in the vent gas boiler distillation overhead scrubber for the distillation and dehydration system off-gases. Emergency release from the process distillation area overhead scrubber shall be routed to the syngas flare (EU-010). Emergency release from the distillation system emergency relief valves may be vented to the atmosphere.  
[Application No. 0610096-004-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### PERFORMANCE RESTRICTIONS

10. Primary Authorized Feedstock: Vegetative matter, yard waste, land clearing debris and untreated wood is authorized to be used as feedstock to the gasification system. Feedstock processing for both gasifiers combined is limited to an annual average throughput of no more than ~~483 dry~~ 365 dried tons per day (15% moisture content) per gasifier, 365 dry tons per day (15% moisture content) total on a rolling 12-month basis.  
[Application No. 0610096-001-AC; Rule 62-210.200, F.A.C. Definitions of "Biomass," "Yard Waste," "Untreated Wood" and "Solid Waste"; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
11. MSW Trial Period: During an MSW trial period not to exceed 120 continuous days, MSW is authorized to be used as a feedstock, alone or in combination with biomass, subject to the following requirements.
  - a. Feedstock: The permittee may fire MSW alone or in combination with the biomass feedstock. MSW processing is limited to no more than ~~483~~ 365 dry tons per day for both gasifiers combined (15% moisture content) per gasifier. A maximum of 10,950 dry tons of MSW (15% moisture content) is authorized to be processed during the MSW trial period.
  - b. Notification: The permittee shall notify the Compliance Authority at least 30 days prior to commencement of the MSW trial period.
  - c. Testing: The permittee shall conduct stack tests at the vent gas boiler stack (EU-006), ~~following~~ using the methods and procedures specified in Appendix AAAA, for the following pollutants: PM, lead, mercury, hydrogen chloride (HCl) and cadmium. ~~These tests shall be conducted while processing MSW in the gasifiers at the maximum anticipated rate for the trial period. If the MSW processing rate later exceeds the rate during the testing, the stack tests do not have to be repeated.~~ The permittee may repeat this testing during or after the MSW trial period so as to demonstrate compliance at different MSW feed rates.
  - d. Report: As part of any permit application to authorize the routine processing of MSW in the gasifiers, the permittee shall include a report that uses available monitor and stack test data to evaluate the impact of processing MSW on emissions of the following pollutants: NO<sub>x</sub>, CO, SO<sub>2</sub>, PM, lead, mercury, HCl and cadmium. Prior to initiating routine processing of MSW in the

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### C. Gasification, Fermentation and Distillation Systems (EU-003)

gasifiers as authorized by Condition 3.C.12, the permittee shall submit a report to the Compliance Authority that uses available monitor and stack test data to evaluate the impact of processing MSW on emissions of the following pollutants: nitrogen oxides (NO<sub>x</sub>), CO, sulfur dioxide (SO<sub>2</sub>), PM, lead, mercury, HCl and cadmium.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

12. MSW Feedstock: After submitting the report specified in Condition 3.C.11.d, MSW is authorized to be used as feedstock to the gasification system. MSW processing for both gasifiers combined is limited to a 12-month rolling annual average throughput of no more than 110 percent of the dried tons per day achieved for both gasifiers combined during the most recent testing conducted pursuant to Condition 3.C.11.c.

[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

13. Authorized Fuels: Natural gas and landfill gas are authorized to be fed to the gasifier bottom chamber start-up burners in order to bring the system up to temperature until the solid feed is started. During normal operation, butanol from the distillation system is authorized to be fed to the gasifier burners.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

14. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).

[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

15. Ethanol Production Rate: Ethanol production is limited to 8.00 million gallons per year on a rolling 12-month basis.

[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

*{Permitting Note: The final product with the addition of a denaturant is limited to 8.42 million gallons per year.}*

16. Ethanol Capture, Fermentation System: The process vent gas scrubber shall be designed to remove 95 percent of the residual ethanol from the gas stream fermentation system off-gases.

[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

16. ~~Sulfur Removal: The desulfurization unit shall be designed to reduce H<sub>2</sub>S to 50 parts per million by volume (ppmv) or less at the desulfurization unit exit.~~

~~[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]~~

17. Ethanol Capture, Distillation and Dehydration System: The distillation overhead scrubber shall be designed to remove 95 percent of the residual ethanol from the distillation and dehydration system off-gases.

[Application No. 0610096-002-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

#### RECORDS AND REPORTS

18. Recordkeeping Requirements: The permittee shall maintain records of the amount of ethanol produced (gallons per year) on a rolling 12-month basis. These records shall be kept and made available to the Compliance Authority upon request.

[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

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**C. Gasification, Fermentation and Distillation Systems (EU-003)**

19. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix CTR of this permit.  
[Rule 62-297.310(8), F.A.C.]



### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### D. Distillation Unit Fugitive Emissions (EU-004)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
004	<u>Distillation Unit Fugitive Emissions:</u> Process vents from the fermentation, distillation and dehydration system are collected, and emissions are routed through closed vent systems to a control device (the vent gas boiler, EU-006). There will be some fugitive VOC emissions from the distillation unit, however, that are not captured and routed to control.

#### EQUIPMENT

1. Fermentation and Distillation System: The permittee is authorized to install a fermentation and distillation system (EU-003) as specified in Section 3.C of this permit for EU-003.  
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### PERFORMANCE RESTRICTIONS

2. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).  
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
3. Ethanol Production Rate: Ethanol production is limited to 8.00 million gallons per year on a rolling 12-month basis.  
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

*{Permitting Note: The final product with the addition of a denaturant is limited to 8.42 million gallons per year. Controlled VOC emissions from distillation are assumed to be 0.1161 lb VOC per 1000 gallons of ethanol produced. At 95 percent control and 8 million gallons per year of ethanol, this equates to 0.46 tons of fugitive VOC—primarily ethanol and butanol.}*

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

E. Desulfurization Unit Oxidation Tank (EU-005)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
005	<del>Desulfurization Unit Oxidation Tank:</del> <del>The iron chelate solution used to capture H<sub>2</sub>S in the syngas stream may also capture VOC and then release those VOC from the oxidation tank during the air sparging process.</del>

**EQUIPMENT**

- ~~1. **Desulfurization Unit:** The permittee is required to install a desulfurization unit that uses an iron chelate solution to remove H<sub>2</sub>S from the vent gas prior to combustion in the vent gas boiler, as specified in Section 3.C of this permit for EU-003.  
[Application No. 0610096-001 AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]~~

**PERFORMANCE RESTRICTIONS**

- ~~2. **Restricted Operation:** The hours of operation of this emission unit are not limited (8,760 hours per year).  
[Application No. 0610096-001 AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]~~
- ~~3. **Ethanol Production Rate:** Ethanol production is limited to 8.00 million gallons per year.  
[Application No. 0610096-001 AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]~~

*{Permitting Note: The final product with the addition of a denaturant will be limited to 8.42 million gallons per year. The VOC anticipated in the process gas stream will be mostly ethanol and butanol. The vent gas scrubber, which precedes the desulfurization unit, is designed to capture 95 percent of the ethanol from the vent gas streams from the fermentation and distillation processes. Though not designed to capture butanol, the scrubber is expected to remove at least 95 percent of butanol and other heavier compounds. In the worst case scenario, all VOC following the vent gas scrubber would be captured in the iron chelate catalyst medium of the desulfurization unit and would be subsequently released with the air used to sparge the oxidation tank. In this case, the ethanol production rate limitation would limit potential emissions of VOC from the desulfurization unit oxidation tank to 33.9 tons per year.}*

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

**E. F. Vent Gas Boiler (EU-006)**

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
006	<p><b>Vent Gas Boiler:</b>  <del>The vent gas boiler is a CB Nebraska D Type industrial watertube boiler, Model NB 301D 65, or equivalent boiler with a nominal maximum heat input rate of 53.2 million British thermal units per hour (MMBtu/hr).</del>  <i>Fuels:</i> During startup, the vent gas boiler fires landfill gas supplemented with natural gas. During normal operation, the boiler fires the vent gases collected from fermentation, distillation and dehydration. Vent gases are scrubbed <del>and sent through desulfurization</del> prior to combustion in the vent gas boiler. The vent gases may be supplemented with <del>desulfurized</del> landfill gases during normal operation.  <i>Control Devices:</i> The vent gas boiler is equipped with low-nitrogen-oxide (NO<sub>x</sub>) burners <del>and flue gas recirculation. The vent gases and landfill gases routed to the boiler undergo significant cleaning prior to being combusted. There are no add-on air pollution control devices on the boiler exhaust. Following combustion, sodium bicarbonate is injected into the flue gas immediately prior to a fabric filter.</del>  <i>Stack Parameters:</i> The vent gas boiler exhaust stack is <del>450</del> <u>80</u> feet tall and 2.5 feet in diameter. Flow rate at the vent gas boiler stack exit is approximately <del>18,000</del> <u>15,500</u> dry standard cubic feet per minute (<del>dscfm</del>) at <u>7% percent</u> oxygen (O<sub>2</sub>). Exit velocity <u>corresponding to this flow rate</u> at the vent gas boiler stack is estimated to be <u>61</u> <del>52.5</del> feet per second (<del>ft/see</del>).</p>

**APPLICABLE STANDARDS AND REGULATIONS**

1. NSPS for Small Municipal Waste Combustion Units (Appendix AAAA): Each ~~gasification-to-vent gas boiler equipment train~~ equipment train (from gasifier to vent gas boiler) is a separate new municipal waste combustion unit for purposes of 40 C.F.R. part 60, subpart AAAA—Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 31, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001. The permittee shall comply with the requirements of the NSPS, included as Appendix AAAA. The following requirements and specifications are relevant to NSPS applicability.
    - a. The word "combust" in reference to the NSPS refers to the pyrolysis reaction in the gasifiers.
    - b. Each municipal waste combustion unit (gasifier-to-vent gas boiler equipment train) has a capacity of greater than 35 but less than 250 tons per day of MSW.
    - c. The municipal waste combustion units are "Class I Units" because the aggregate plant combustion capacity is 365 tons per day of MSW, which is greater than 250 tons per day.
    - d. The municipal waste combustion units use activated carbon (in the dry gas cleanup packages) to control emissions of dioxin/furan and mercury.
    - e. The NSPS emissions limits will apply at the vent gas boiler exhaust stack.
    - f. Continuous monitors required by the NSPS will be located at the vent gas boiler exhaust stack.
    - g. The municipal waste combustion units generate steam.
    - h. With respect to NSPS-required monitoring of flue gas temperature, the inlets to the dry gas cleaning fabric filters are deemed to be the inlets to the PM air pollution control device.
    - i. The municipal waste combustion units are deemed to be modular starved-air and excess air units.
- [Application No. 0610096-001-AC; Rule 62-296.100(3), F.A.C.; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### E. F. Vent Gas Boiler (EU-006)

2. NSPS for Equipment Leaks of VOC (Appendix VVa): The vent gas boiler is an enclosed combustion device for purposes of 40 C.F.R. part 60, subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry SOCM I for Which Construction, Reconstruction or Modification Commenced After November 7, 2006. The permittee shall comply with the requirements of the NSPS, included as Appendix VVa. [Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance Rule 62-296.100(3), F.A.C.]

#### EQUIPMENT

3. Vent Gas Boiler: The permittee is authorized to construct a nominal ~~53.2~~ 84.5 MMBtu/hr per hour watertube boiler for steam generation. The boiler will include low NO<sub>x</sub> burners and flue gas recirculation technology, as well as a feed water heat exchanger, steam drum, turbine, stack and other ancillary equipment. The vent gas boiler shall be designed and operated to one of the following specifications:
- Reduce VOC emissions vented to the boiler with an efficiency of 95 percent or greater. ~~For the fermentation system vent gas, the uncontrolled inlet is specified to be upstream of the vent gas scrubber. The uncontrolled inlets are specified to be upstream of the process vent gas scrubber for the fermentation off-gases and upstream of the distillation overhead scrubber for the distillation and dehydration system off-gases.~~
  - Reduce VOC emissions vented to the boiler to an exit concentration of 20 ~~ppmv~~ parts per million by volume (ppmv) on a dry basis corrected to 3% percent O<sub>2</sub>.
  - Provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

[Application No. 0610096-001-AC; Appendix VVa; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

4. Sorbent Injection and Fabric Filter: The permittee is required to install a system to inject sodium bicarbonate into the flue gas. The permittee is required to install a fabric filter to collect PM and spent bicarbonate. [Application No. 0610096-002-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

#### PERFORMANCE RESTRICTIONS

5. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year). [Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
6. Authorized Fuels: The vent gas boiler is authorized to fire the following fuels: syngas, natural gas and landfill gas ~~that has been treated in the sulfur removal equipment~~. For purposes of this section of the permit (Section 3.FE), the term "syngas" includes the mixture of CO, CO<sub>2</sub>, H<sub>2</sub> and other hydrocarbons resulting from the starved-air pyrolysis in the gasifiers as well as the off-gases from the fermentation and distillation systems. [Application No. 0610096-001-AC]
7. Circumvention of Air Pollution Control Equipment: The permittee shall not circumvent any air pollution control equipment or allow the emission of air pollutants without the applicable air pollution equipment operating properly. Syngas shall not be routed to the vent gas boiler for combustion except through the gasifier-to-vent gas boiler equipment train, including dry gas cleaning (~~the~~ sodium bicarbonate and activated carbon injection followed by fabric filtration); and vent gas scrubbing, ~~and sulfur removal~~. If all or part of the gasifier-to-vent gas boiler equipment train is

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

**E. F. Vent Gas Boiler (EU-006)**

inoperative, then syngas shall be routed to the syngas flare (EU-010) instead of the vent gas boiler.  
[Rule 62-210.650, F.A.C.]

8. Operation and Maintenance: The permittee shall monitor the vent gas boiler to ensure that it is operated and maintained in conformance with its design.  
[Paragraph 60.482-10a(e), Appendix VVa]

**EMISSIONS STANDARDS**

9. Emissions Standards: The NSPS for small municipal waste combustion units (Appendix AAAA) specifies emissions standards for the following pollutants: dioxins/furans, cadmium, lead, mercury, PM, HCl, NO<sub>x</sub>, sulfur dioxide (SO<sub>2</sub>) and CO. This NSPS also limits visible emissions. The permittee shall comply with the NSPS limits when the vent gas boiler is combusting any authorized fuel, including syngas generated from the gasification of C&D debris.  
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
10. Continuous Monitoring Requirements: The permittee shall install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS), a continuous opacity monitoring system (COMS) and a diluent monitor (either O<sub>2</sub> or CO<sub>2</sub> monitor) to measure and record the emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO and opacity from the vent gas boiler stack in the manner prescribed by the NSPS for small municipal waste combustion units (Appendix AAAA). Within one working day of discovering emissions in excess of a SO<sub>2</sub>, NO<sub>x</sub> or CO standard (and subject to the specified averaging period), the permittee shall notify the Compliance Authority.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

**TESTING REQUIREMENTS**

11. Initial and Annual Stack Tests: The permittee shall conduct initial and annual stack testing as specified by the NSPS for small municipal waste combustion units (Appendix AAAA).  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]
12. Initial and Annual VOC Performance Check: No later than 180 days after initial operation and annually during each federal fiscal year (October 1 to September 30) thereafter, the permittee shall determine compliance with Condition F.3.a, F.3.b or F.3.e 3.E.3.a, 3.E.3.b or 3.E.3.c. Any VOC stack testing performed pursuant to this condition shall be performed in accordance with the following reference test method.

Method	Description of Method and Comments
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

The above method is described in Appendix A of 40 C.F.R. 60 and is adopted by reference in Rule 62-204.800, F.A.C. No other method may be used unless prior written approval is received from the Department.  
[Rules 62-4.070(3), 62-204.800, 62-297.100 and 62-297.310(7)(a)3., F.A.C. and Appendix A of 40 C.F.R. 60]

**RECORDS AND REPORTS**

13. Recordkeeping Requirements: The permittee shall record the hours of operation and MMBtu of total heat input for the vent gas boiler. The permittee shall record the standard cubic feet of syngas, natural gas and landfill gas fired in the vent gas boiler. These records shall be kept and made available to the Compliance Authority upon request.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

**SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

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**E. F. Vent Gas Boiler (EU-006)**

14. Stack Test Reports: In addition to the information required in Appendix CTR, each stack test report shall also include the following information: heat input rate (MMBtu/hour), calculated authorized fuels firing rate by fuel type (cubic feet per minute), emissions rate (in the units of the applicable standard) and approximate gasifier feed rates by feedstock type, in dry tons per hour (~~15% moisture content~~).

[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### F. G. Tank Farm (EU-007)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
007	<p><u>Tank Farm:</u></p> <ul style="list-style-type: none"><li>• <u>Product Storage Tank:</u> <del>65,455</del> <u>94,755</u>-gallon ethanol storage tank. The maximum true vapor pressure of ethanol at 32.4 °C (maximum monthly average temperature for Vero Beach) is <del>1.72 pounds per square inch, absolute (psia).</del></li><li>• <u>Denaturant Storage Tank:</u> <del>18,006</del> <u>19,800</u>-gallon denaturant storage tank. The denaturant is gasoline with a nominal Reid vapor pressure of 9 psia.</li></ul>

#### APPLICABLE STANDARDS AND REGULATIONS

1. NSPS for Volatile Organic Liquid Storage Vessels (Appendix Kb): The product storage tank and the denaturant storage tank are subject to 40 C.F.R. part 60, subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction or Modification Commenced After July 23, 1984. The permittee shall comply with the requirements of the NSPS, included as Appendix Kb. [Application No. 0610096-001-AC and Rule 62-296.100(3), F.A.C.]

#### EQUIPMENT

2. Storage Tanks: The permittee is authorized to install a nominal ~~18,006~~ 19,800-gallon denaturant storage tank and a nominal ~~65,455~~ 94,755-gallon tank to store the final ethanol product. The final ethanol product shall be a mixture of ethanol and 2 to 5 percent denaturant. The denaturant shall be gasoline with a nominal Reid vapor pressure of 9 psia. [Application No. 0610096-002-AC]
3. Internal Floating Roofs: The storage tanks shall be equipped with fixed roofs in combination with internal floating roofs meeting the requirements of the NSPS, included as Appendix Kb. [Application No. 0610096-001-AC]

#### PERFORMANCE RESTRICTIONS

4. Ethanol Throughput: Throughput of final ethanol product is limited to 8.42 million gallons per year on a rolling 12-month basis. [Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
5. Denaturant Throughput: Throughput of denaturant is limited to 0.42 million gallons per year on a rolling 12-month basis. [Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
6. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year). [Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

#### RECORDS AND REPORTS

7. Recordkeeping Requirements: The permittee shall maintain records of the amount of final (denatured) ethanol product throughput (gallons per year) on a rolling 12-month basis. These records shall be kept and made available to the Compliance Authority upon request. [Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

G. H. Loadout Flare (EU-008)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
008	<p>Loadout Flare:</p> <p>Up to <del>128</del> <u>200</u> gallons of denatured ethanol per minute will be transferred to ethanol tanker trucks. Displaced vapor from the 8,000 gallon, dedicated ethanol tank trucks will be routed to the loadout flare.</p>

EQUIPMENT

1. Loading Rack: The permittee is authorized to construct a product loading and metering system equipped with a loading rack designed to transfer ~~128~~ a nominal 200 gallons per minute of denatured ethanol product to nominal 8,000 gallon, ethanol-dedicated tank trucks.  
[Application No. 0610096-00+2-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
2. Loadout Flare: The permittee is required to construct an enclosed flare system ~~to capture and destroy vapors displaced during truck loadout with a continuous natural gas pilot flame. The loadout flare shall be used to capture and destroy vapors displaced during truck loadout. The flare used to comply with this permit shall comply~~ loadout flare shall comply with the requirements of 40 C.F.R. 60.18, included in Appendix GP.  
[Application No. 0610096-00+2-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

3. Restricted Operation: The hours of operation of the pilot flame for the flare system are not limited (8,760 hours per year). ~~Operation of the flare is limited to 3,120 hours per year. Air flow routed to the flare is limited to 1.123 million standard cubic feet per year on a rolling 12-month basis.~~ The flare shall be operated at all times when truck loading operations are taking place.  
[Application No. 0610096-00+2-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]  
  
*{Permitting Note: 1.123 million standard cubic feet of displaced vapors per year result from the loading of 8.42 million gallons per year of ethanol product into the tank trucks. With the loadout flare design provided by the permittee, the flare will operate at maximum loading less than 700 hours per year at the maximum design flow rate. The truck loading and gas flow rates to the flare may vary.}*
4. Approximate Capacities: The flare system shall be designed to combust vapors displaced from the trucks during the loading of the denatured ethanol product. The trucks are assumed to be in dedicated denatured ethanol product service (i.e., only denatured ethanol product vapors will be displaced). The product loadout flare shall have a nominal rated capacity of ~~6~~ 3.4 MMBtu per hour. Natural gas will be used as the fuel for the pilot, which shall have a nominal rated capacity of 0.17 MMBtu per hour.  
[Application No. 0610096-00+2-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

TESTING AND MONITORING REQUIREMENTS

5. Visible Emission Compliance Tests: The flare system exhaust shall be tested to demonstrate initial compliance with the visible emission standard specified in 40 C.F.R. 60.18 no later than 180 days after initial operation and during each federal fiscal year (October 1 to September 30) thereafter. Testing shall be conducted as specified in 40 C.F.R. 60.18(f). Testing shall be conducted while tank trucks are being loaded.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]



### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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#### G. H. Loadout Flare (EU-008)

6. Operation and Maintenance: The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design. The permittee shall monitor the flow rate of displaced vapors to the flare.  
[Application No. 0610096-002-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### **RECORDS AND REPORTS**

7. Records: The permittee shall record in a written or electronic log the monthly flow rate of displaced vapors to the flare, the duration of each flare event and the reason for flaring. These records shall be kept and made available to the Compliance Authority upon request.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

I. Gasifier Flare (EU-009)

This section of the permit addresses the following emissions unit:

ID No.	Emission Unit Description
009	<p><u>Gasifier Flare:</u>            The emergency gasifier flare is an enclosed flare with a natural gas fueled pilot light. Crude syngas is sent to the flare through an emergency vent valve when there is downstream blockage in the gasifier or when the power supply to the plant fails.</p>

**EQUIPMENT**

- 1. Gasifier Flare: The permittee is authorized to construct an enclosed flare system with a continuous natural gas pilot flame. The flare used to comply with this permit shall comply with the requirements of 40 C.F.R. 60.18, included in Appendix GP. [Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

**PERFORMANCE RESTRICTIONS**

- 2. Restricted Operation: The emergency gasifier flare is limited to 100 hours of operation per year. [Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

**TESTING AND MONITORING REQUIREMENTS**

- 3. Visible Emission Compliance Tests: The flare system exhaust shall be tested to demonstrate initial compliance with the visible emission standard specified in 40 C.F.R. 60.18 no later than 180 days after initial operation and during each federal fiscal year (October 1 to September 30) thereafter. Testing shall be conducted as specified in 40 C.F.R. 60.18(f). Testing shall be conducted while venting syngas to the flare, if practical. [Rule 62-4.070(3), F.A.C. Reasonable Assurance]
- 4. Operation and Maintenance: The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design. [Rule 62-4.070(3), F.A.C. Reasonable Assurance]

**RECORDS AND REPORTS**

- 5. Records: The permittee shall record in a written or electronic log the duration of each flare event and the reason for flaring. These records shall be kept and made available to the Compliance Authority upon request. [Rule 62-4.070(3), F.A.C. Reasonable Assurance]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### H. J. Syngas Flare (EU-010)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
010	<p><u>Syngas Flare:</u></p> <p>The <del>emergency</del> syngas flare is <u>only</u> used to control vent gas emissions during system malfunctions when the vent gas boiler is unavailable. It has a natural gas fueled pilot light that operates continuously. <del>The largest streams that are routed to the flare are from syngas exiting the waste heat recovery, dry gas cleaning and desulfurization systems. The fermentation, distillation and dehydration systems also have emergency valves that can route to the flare.</del> <u>The syngas flare also accepts vent gases from the gasifiers, syngas compression, dry gas cleaning, waste heat recovery and vent gas scrubbing.</u></p>

#### EQUIPMENT

1. Syngas Flare: The permittee is authorized to construct an enclosed ground flare system with a continuous natural gas pilot flame. The syngas flare ~~used to comply with this permit~~ shall comply with the requirements of 40 C.F.R. 60.18, included in Appendix GP.  
[Application No. 0610096-00+2-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### PERFORMANCE RESTRICTIONS

2. Restricted Operation: ~~The emergency syngas flare is limited to 300 hours of operation per year.~~ Air flow routed to the syngas flare shall not exceed 232.6 million standard cubic feet per year on a rolling 12-month basis.  
[Application No. 0610096-00+2-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]  
*{Permitting Note: 232.6 million standard cubic feet per year flow corresponds to approximately 300 hours per year of operation at the design maximum flow rate.}*

#### TESTING AND MONITORING REQUIREMENTS

3. Visible Emission Compliance Tests: The flare system exhaust shall be tested to demonstrate initial compliance with the visible emission standard specified in 40 C.F.R. 60.18 no later than 180 days after initial operation and during each federal fiscal year (October 1 to September 30) thereafter. Testing shall be conducted as specified in 40 C.F.R. 60.18(f). Testing shall be conducted while venting syngas to the flare, if practical.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]
4. Operation and Maintenance: The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design. The permittee shall monitor the flow rate of displaced vapors to the flare.  
[Application No. 0610096-002-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

#### RECORDS AND REPORTS

5. Records: The permittee shall record in a written or electronic log the monthly flow rate of displaced vapors to the flare, the duration of each flare event and the reason for flaring. These records shall be kept and made available to the Compliance Authority upon request.  
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

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**SECTION 4. APPENDIX BMP**  
**BEST MANAGEMENT PRACTICES**

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**Introduction**

As per Condition A.4 of the permit, authorized feedstock for the INEOS New Planet BioEnergy (INPB) facility in Indian River County (IRC) consists of vegetative matter, yard waste, land clearing debris, untreated wood and municipal solid waste (MSW). These terms are defined in Rule 62-210.200, F.A.C.

- "Biomass" – Vegetative matter and untreated wood.
- "Yard Waste" – Vegetative matter resulting from landscaping and yard maintenance operations and other such routine property clean-up activities. It includes materials such as leaves, shrub trimmings, grass clippings, palm fronds, and brush.
- "Land Clearing Debris" – Uprooted or cleared vegetation resulting from a land clearing operation, including any untreated wood generated by the land clearing operation (e.g., untreated fence posts).
- "Untreated Wood" – Wood (including lighter pine, tree trunks, limbs and stumps, shrubs, and lumber) which is free of paint, glue, filler, pentachlorophenol, creosote, tar, asphalt, chromated copper arsenate (CCA), and other wood preservatives or treatments.
- "Solid Waste" – Includes garbage, refuse, yard trash, clean debris, white goods, special waste, ashes, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.

This Appendix BMP contains best management practices related to materials separation, quality control and dust minimization. In this Appendix BMP, "feedstock" refers to any authorized feedstock at the facility; "vegetative matter" refers to yard waste and land clearing debris other than untreated wood; "construction and demolition (C&D) debris" refers to untreated wood other than yard waste and land clearing debris; and "MSW" refers to solid waste other than yard trash and clean debris. As such, the three non-overlapping categories of authorized feedstock are vegetative matter, C&D debris and MSW.

**Limited Use of MSW**

~~The routine feedstock for the INPB IRC facility consists of vegetative matter and C&D debris, blended together in varying ratios depending upon availability. On an annual average basis, the blend is approximately 90 percent vegetative matter with the remainder made up of C&D debris or MSW. The permit authorizes up to 100 percent use of MSW, but limits total MSW use to a maximum of 10,950 dry tons of MSW (15 percent moisture content). This represents the equivalent of 30 days of 100 percent MSW use.~~

Any material delivered to the facility that is not authorized by the permit as feedstock shall be collected and delivered to IRC Solid Waste Disposal District (SWDD) or to another disposal facility.

**Vegetative Matter**

Source: The vegetative matter is primarily yard waste from the IRC SWDD curbside collection program, supplemented by additional yard waste and land clearing debris delivered by the public directly to the county's customer convenience centers. Some vegetative matter may be delivered by the public to the INPB IRC facility.

Screening Prior to Shredding: Shredding may be performed either by the county before the vegetative matter is delivered to the facility or by the facility following delivery. Vegetative matter shall not be processed at the INPB IRC facility, however, unless it was collected under the following conditions:

- Personnel at scale houses or other receiving areas have been trained to prevent significant quantities of undesirable waste (more than 1 percent plastic, metal or other non-vegetative matter) from being disposed of in the vegetative matter stream.
- The public providing the yard waste have been educated in reducing the amount of plastic and garbage that is discarded with the yard waste through outreach activities such as posting signs at drop off areas.

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## SECTION 4. APPENDIX BMP

### BEST MANAGEMENT PRACTICES

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Alternate Disposal: The permit authorizes a tipping floor, designed to accommodate a 48-hour period of operation (730 tons), with an additional hard-packed gravel overflow storage area for vegetative matter and C&D debris. The INPB IRC facility shall have the necessary agreements, logistics and procedures in place for at least one alternative disposal location should the storage capacity of the site be exceeded.

#### C&D Debris

Source: The C&D debris is primarily waste accepted by the IRC SWDD for disposal ~~in a dedicated cell in their landfill~~. Some C&D debris may be delivered by the public to the INPB IRC facility.

Screening Prior to Shredding: Shredding may be performed either by the county before the C&D debris is delivered to the facility or by the facility following delivery. To ensure that wood treated with chromated copper arsenate (CCA) is not included in the feedstock, C&D debris shall be processed at the facility under the following conditions:

- The C&D debris delivered from the county landfill shall be pre-screened under a wood management plan in compliance with Rule 62-701.730, F.A.C.
- Prior to on-site shredding, the C&D debris delivered directly to the INPB IRC facility shall be pre-screened under the Florida DEP "Guidance for the Management and Disposal of CCA-Treated Wood," August 10, 2005 draft or subsequent final version (attached).

Alternate Disposal: The permit authorizes a tipping floor, designed to accommodate a 48-hour period of operation (730 tons), with an additional hard-packed gravel overflow storage area for vegetative matter and C&D debris. The INPB IRC facility shall have the necessary agreements, logistics and procedures in place for at least one alternative disposal location should the storage capacity of the site be exceeded.

#### Municipal Solid Waste

Source: MSW to be used as feedstock will be waste diverted from the IRC SWDD Class I landfill or material delivered pre-shredded from a waste-to-energy facility. No MSW shall be delivered by the public to the INPB IRC facility.

Screening Prior to Shredding: Shredding may be performed either before the MSW is delivered to the facility or by the facility following delivery. Prior to on-site shredding, the INPB IRC facility shall develop and implement a detailed feedstock management plan to ensure removal of hazardous materials such as propane tanks from the waste.

~~Alternate Disposal: The permit authorizes a tipping floor, designed to accommodate a 48-hour period of operation (730 tons), with an additional enclosed, paved storage area for MSW, designed to accommodate two days of operation (730 tons). MSW shall be stored in the enclosed paved area, and any MSW which has been at the INPB IRC facility for more than 48 hours shall be returned to the county landfill.~~

#### Best Management Practices

In addition to the reasonable precautions to prevent emissions of unconfined particulate matter (PM) specified in the permit, the facility shall implement the following best management practices:

- The feedstock shall be delivered directly to the tipping floor.
- The feedstock shall not be sprayed with water to control dust emissions, unless water-spraying proves necessary to prevent emissions of unconfined PM.
- The feedstock piles shall be managed by front end loaders.
- Unnecessary movement of the piles shall be avoided to minimize fugitive emissions.
- The front end loaders shall feed the biomass or MSW to a conveyor system connected to the dryers.

## SECTION 4. APPENDIX Kb

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### NSPS, SUBPART KB – STANDARDS OF PERFORMANCE FOR VOLATILE ORGANIC LIQUID STORAGE VESSELS

Two tanks at the facility are subject to 40 C.F.R. part 60, subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. The NSPS applies to any storage tank with a capacity greater than or equal to 10,300 gallons that is used to store volatile organic liquids. The two tanks have a capacity greater than or equal to 40,000 gallons (nominal 72,727 gallons each) and store a liquid with a maximum true vapor pressure greater than 3.5 kilopascals (kPa). Consequently, the two tanks (product storage tank and denaturant storage tank) are subject to 40 C.F.R. part 60, subpart A (general provisions) as well as subpart Kb (storage vessels).

40 C.F.R. part 60, subpart Kb applies to each storage vessel with a capacity greater than or equal to 75 cubic meters (m<sup>3</sup>) (19,800 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction or modification is commenced after July 23, 1984. This subpart does not apply, however, to the following:

- Storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> (39,900 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) (0.51 pounds per square inch absolute, psia), or
- with a capacity greater than or equal to 75 m<sup>3</sup> (19,800 gallons) but less than 151 m<sup>3</sup> (39,900 gallons) storing a liquid with a maximum true vapor pressure less than 15.0 kPa (2.18 psia).

The product storage tank will have a capacity of 94,755 gallons, and it will store material with vapor pressure greater than 0.51 psia, so it is subject to subpart Kb. The denaturant storage tank will have a capacity of 19,800 gallons, and it will store material with a vapor pressure greater than 2.18 psia, so it is also subject to subpart Kb. The other storage tanks at the INPB IRC facility are not subject to subpart Kb.

The complete provisions of subparts A and Kb may be provided in full upon request and are also available from the following links:

[Link to Subpart A](#)

[Link to Subpart Kb](#)

#### SECTION 4. APPENDIX IIII

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##### NSPS, SUBPART IIII - STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

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The feedstock grinder/shredder will be powered by a new Caterpillar C18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or an equivalent engine from another manufacturer.

In the materials handling area (EU-001), the two shredders will be powered by model year 2011 Mercedes Benz OM 460 LA diesel-fired engines, or equivalent engines with respect to engine power output rating and emission rates. The two trammel screens will be powered by model year 2011 Daimler-Chrysler OM 904 LA diesel-fired engines, or equivalent engines with respect to engine power output rating and emission rates.

~~This engine is~~ These new engines are subject to the applicable requirements of 40 C.F.R. part 60, subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. The provisions of this subpart may be provided in full upon request and are also available at the following link:

[Link to Subpart IIII](#)

## SECTION 4. APPENDIX ZZZZ

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### NESHAP, SUBPART ZZZZ – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

The feedstock grinder/shredder will be powered by a new Caterpillar C18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or an equivalent engine from another manufacturer.

In the materials handling area (EU-001), the two shredders will be powered by model year 2011 Mercedes Benz OM 460 LA diesel-fired engines, or equivalent engines with respect to engine power output rating and emission rates. The two trammel screens will be powered by model year 2011 Daimler-Chrysler OM 904 LA diesel-fired engines, or equivalent engines with respect to engine power output rating and emission rates. The emergency generator for the facility is an existing (1989 model year) Caterpillar 3412 diesel-powered unit, rated for approximately 500 kilowatts at about 750 horsepower.

These engines are subject to the applicable requirements of 40 C.F.R. part 63, subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The complete provisions of subpart ZZZZ may be provided in full upon request and are also available at the following link:


[Link to Subpart ZZZZ](#)

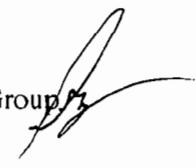


Florida Department of  
Environmental Protection

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**Memorandum**

To: Jeff Koerner, Program Administrator, Office of Permitting and Compliance 

From: Greg DeAngelo, Office of Permitting and Compliance, Chemicals and Combustion Group 

Date: September 28, 2011

Subject: Final Air Permit No. 0610096-002-AC  
INEOS New Planet BioEnergy—Indian River County BioEnergy Facility

The facility will produce approximately 8 million gallons per year of ethanol from a biomass feedstock consisting of vegetative yard waste, clean woody construction and demolition debris and municipal solid waste. Construction of the facility has commenced, and the applicant has requested adjustments to the construction permit to reflect proposed changes in the facility's design. This project consists of modifications to the construction permit to reflect the current plans for how the facility will be built. The applicant has requested certain limitations on operation and emission levels so as to avoid Prevention of Significant Deterioration. A determination of best available control technology was therefore not required.

The attached Final Determination summarizes the publication and comment process. There are no pending petitions for administrative hearings or extensions of time in which to file a petition for an administrative hearing. I recommend your approval of the attached Final Permit for this project.

The Final Permit for this project is attached for your approval and signature. Day 90 of the permitting time clock is November 25, 2011.

Attachments

## **FINAL DETERMINATION**

Air Construction Permit  
INEOS New Planet BioEnergy—Indian River County BioEnergy Facility  
Air Permit No. 0610096-002-AC

### **PERMITTEE**

INEOS New Planet BioEnergy (INPB)  
2600 South Shore Blvd, Suite 500  
Marina View Building  
League City, TX 77573

Authorized Representative:  
Mr. David King, President

### **PERMITTING AUTHORITY**

Florida Department of Environmental Protection (Department)  
Division of Air Resource Management  
Office of Permitting and Compliance  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida 32399-2400

### **PROJECT**

Air Permit No. 0610096-002-AC  
Indian River County BioEnergy Facility

The facility will produce approximately 8 million gallons per year of ethanol from a biomass feedstock consisting of vegetative yard waste, clean woody construction and demolition debris and municipal solid waste (MSW). It will also generate a small amount of electricity available for commercial use (about 2 megawatts). Construction of the facility has commenced, and INPB has requested adjustments to the construction permit to reflect proposed changes in the facility's design.

This project consists of modifications to the construction permit to reflect the current plans for how the facility will be built. Other than clarifications and minor corrections, the major changes in this project consist of the following:

- Modified the materials handling area to reflect four smaller diesel engines instead of one large engine.
- Updated the fermentation and distillation system requirements to reflect two scrubbers instead of a single scrubber and desulfurization unit.
- Altered the MSW trial period so that instead of requiring a follow-on permit application to authorize routine processing of MSW, the permit will grant authority to process MSW on a routine basis at feed rates for which compliance has been demonstrated.
- Authorized the installation of a larger vent gas boiler and required installation of post-combustion controls (sorbent injection followed by a fabric filter).
- Increased the authorized capacity (gallons) of the product and denaturant storage tanks.
- Eliminated the desulfurization unit and its associated oxidation tank, and replaced two flares (gasifier flare and syngas flare) with a single, larger flaring system (syngas flare).

### **NOTICES AND PUBLICATION**

The Department received the application for an air pollution construction permit on July 23, 2011. On August 31, 2011, the Permitting Authority gave notice of its intent to issue an air permit to the applicant for

the described project. The applicant published the Public Notice of Intent to Issue Air Permit for this project on September 12, 2011 in the Indian River Press Journal.

The complete project file including the application, draft permit, technical evaluation and preliminary determination and key correspondence are available at the following web link:

[http://www.dep.state.fl.us/air/emission/bioenergy/indian\\_river.htm](http://www.dep.state.fl.us/air/emission/bioenergy/indian_river.htm)

**COMMENTS ON THE DRAFT PERMIT**

No comments were received from the public and no comments were received from INPB on the draft permit.

**CONCLUSION**

The final action of the Department is to issue the permit without any changes to the draft permit.

## Scearce, Lynn

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**From:** Scearce, Lynn  
**Sent:** Tuesday, September 27, 2011 2:30 PM  
**To:** 'david.king@ineos.com'  
**Cc:** DeAngelo, Gregory; 'dan.cummings@ineos.com'; 'mark.niederschulte@ineos.com'; 'currojp@cdm.com'; 'hibbardcs@cdm.com'; 'janssenge@cdm.com'; Shine, Caroline; 'abrams.heather@epa.gov'; Friday, Barbara; Scearce, Lynn  
**Subject:** 0610096-002-AC, INEOS New Planet BioEnergy, Final Permit  
**Attachments:** 0610096-002-AC, INEOS New Planet BioEnergy signature page.pdf

Tracking:	Recipient	Delivery	Read
	'david.king@ineos.com'		
	DeAngelo, Gregory	Delivered: 9/27/2011 2:30 PM	Read: 9/27/2011 2:42 PM
	'dan.cummings@ineos.com'		
	'mark.niederschulte@ineos.com'		
	'currojp@cdm.com'		
	'hibbardcs@cdm.com'		
	'janssenge@cdm.com'		
	Shine, Caroline	Delivered: 9/27/2011 2:30 PM	
	'abrams.heather@epa.gov'		
	Friday, Barbara	Delivered: 9/27/2011 2:30 PM	Read: 9/27/2011 2:33 PM
	Scearce, Lynn	Delivered: 9/27/2011 2:30 PM	Read: 9/27/2011 2:30 PM

Dear Mr. King:

Attached is the official **Notice of Final Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

Owner/Company Name: INEOS NEW PLANET BIOENERGY  
Facility Name: INPB IRC FACILITY  
Project Number: 0610096-002-AC  
Permit Status: FINAL  
Permit Activity: CONSTRUCTION  
Facility County: INDIAN RIVER

Click on the following link to access the permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0610096.002.AC.F\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0610096.002.AC.F_pdf.zip)

The Office of Permitting and Compliance is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "Air Permit Documents Search" website at <http://www.dep.state.fl.us/air/emission/apds/default.asp>.

Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Office of Permitting and Compliance.

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <<http://www.adobe.com/products/acrobat/readstep.html>> .

Regards,

**Lynn Searce**

Office of Permitting and Compliance (OPC)

Division of Air Resources Management

850-717-9025

**Scearce, Lynn**

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**From:** Curro, Joseph [CurroJP@cdm.com]  
**To:** Scearce, Lynn  
**Sent:** Tuesday, September 27, 2011 2:38 PM  
**Subject:** Read: 0610096-002-AC, INEOS New Planet BioEnergy, Final Permit

Your message was read on Tuesday, September 27, 2011 2:38:29 PM (GMT-05:00) Eastern Time (US & Canada).

## Scearce, Lynn

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**From:** david.king@ineos.com  
**Sent:** Thursday, September 29, 2011 11:08 AM  
**To:** Scearce, Lynn.  
**Subject:** Re: 0610096-002-AC, INEOS New Planet BioEnergy, Draft Permit

Confirming access to the File.  
Best regards,  
David King

From: "Scearce, Lynn" <Lynn.Scearce@dep.state.fl.us>  
To: David King/US/BIO/INEOS@INEOS  
Cc: Dan Cummings/US/BIO/INEOS@INEOS, Mark Niederschulte/US/BIO/INEOS@INEOS, "curroj@cdm.com" <curroj@cdm.com>, "hibbardcs@cdm.com" <hibbardcs@cdm.com>, "hibbardcs@cdm.com" <hibbardcs@cdm.com>, "janssenge@cdm.com" <janssenge@cdm.com>, "Shine, Caroline" <Caroline.Shine@dep.state.fl.us>, "abrams.heather@epa.gov" <abrams.heather@epa.gov>, "Scearce, Lynn" <Lynn.Scearce@dep.state.fl.us>, "Friday, Barbara" <Barbara.Friday@dep.state.fl.us>, "hopeforcleanwater@yahoo.com" <hopeforcleanwater@yahoo.com>  
Date: 09/06/2011 03:22 PM  
Subject: 0610096-002-AC, INEOS New Planet BioEnergy, Draft Permit

---

Dear Mr. King:

Attached is the official **Notice of Draft Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

Attention:

Owner/Company Name: INEOS NEW PLANET BIOENERGY  
Facility Name: INPB IRC FACILITY  
Project Number: 0610096-002-AC  
Permit Status: DRAFT  
Permit Activity: CONSTRUCTION  
Facility County: INDIAN RIVER

Click on the following link to access the permit project documents:

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0610096.002.AC.D\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0610096.002.AC.D_pdf.zip)

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Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Office of Permitting and Compliance.

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <<http://www.adobe.com/products/acrobat/readstep.html>> .

Regards,

**Lynn Searce**

Office of Permitting and Compliance (OPC)

Division of Air Resources Management

850-717-9025

*Please take a few minutes to share your comments on the service you received from the department by clicking on this link. [DEP Customer Survey](#). [attachment "0610096-002-AC, INEOS New Planet BioEnergy signature page 9-6-2011.pdf" deleted by David King/US/BIO/INEOS]*