

To File

Linero, Alvaro

From: Nelson, Deborah
Sent: Monday, August 10, 2009 10:06 AM
To: Linero, Alvaro; Read, David
Subject: FW: Verenium

Here is the email stating that they needed to do truck traffic.

Debbie Nelson
Meteorologist
Special Projects Section
850-921-9537
deborah.nelson@dep.state.fl.us

Cover Florida, developed by Governor Charlie Crist and the Florida Legislature, gives Floridians access to more affordable health insurance options. To learn more or to sign up for email updates, visit www.CoverFloridaHealthCare.com.

From: Nelson, Deborah
Sent: Wednesday, April 29, 2009 6:26 PM
To: 'Gwinn, Patrick O'
Subject: RE: Verenium

Patrick,

After reviewing your most recent response, the Department does require that the truck traffic be modeled. Perhaps we can get guidance from the EPA Region IV regarding the process.

Thanks and please let me know if you would like me to contact EPA,

Debbie

Debbie Nelson
Meteorologist
Special Projects Section
850-921-9537
deborah.nelson@dep.state.fl.us

Cover Florida, developed by Governor Charlie Crist and the Florida Legislature, gives Floridians access to more affordable health insurance options. To learn more or to sign up for email updates, visit www.CoverFloridaHealthCare.com.

From: Nelson, Deborah
Sent: Wednesday, April 01, 2009 2:37 PM
To: 'Gwinn, Patrick O'
Subject: FW: Verenium

Please note that this data is based on 1km (new EPA guidance). I'm not sure when you get the original met data from us. You might want to verify that is 1km as well. This is recent guidance and I'm not sure how long ago I gave you the met data.

Thanks,

Debbie

Debbie Nelson
Meteorologist
Special Projects Section
850-921-9537
deborah.nelson@dep.state.fl.us

Cover Florida, developed by Governor Charlie Crist and the Florida Legislature, gives Floridians access to more affordable health insurance options. To learn more or to sign up for email updates, visit www.CoverFloridaHealthCare.com.

From: Nelson, Deborah
Sent: Monday, March 30, 2009 3:22 PM
To: 'Gwinn, Patrick O'
Subject: RE: Verenium

Patrick,

I spoke to Cleve Holladay who processed the met files. He told me to send you these files, which should explain what went into our aernet data. Please let me or Cleve (850-921-8986) know if you have any questions.

Thanks,

Debbie

Debbie Nelson
Meteorologist
Special Projects Section
850-921-9537
deborah.nelson@dep.state.fl.us



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAR 26 2009

RECEIVED

MAR 30 2009

DIVISION OF AIR
RESOURCES MANAGEMENT

Mr. Joseph Kahn, Director
Division of Air Resources Management
Florida Department of Environmental Protection
Mail Station 5500
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Kahn:

We have received a request for an applicability determination from Highlands Ethanol, LLC, an affiliate of Verenium Biofuels Corporation, concerning a new fuel-grade cellulosic ethanol production facility to be constructed in Highlands County, Florida. The company requests a determination concerning the applicability of New Source Performance Standards (NSPS) Subpart NNN – “Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations” and Subpart RRR – “Standards of Performance for VOC Emissions From SOCMI Reactor Processes.” Highlands Ethanol will produce fuel-grade ethanol by the use of fermentation (biological synthesis). We have reviewed the Highlands Ethanol request and have determined the facility will not be subject to Subparts NNN and RRR.

NSPS Subpart NNN applies to affected facilities described in Section 60.660(b) that are part of a process unit producing any of the listed chemicals in Section 60.667 as a product, co-product, by-product, or intermediate. NSPS Subpart RRR applies to affected facilities described in Section 60.700(b) that are part of a process unit producing any of the listed chemicals in Section 60.707 as a product, co-product, by-product, or intermediate. Subparts NNN and RRR both identify ethanol as a listed chemical. However, background information documents created during the development of Subparts NNN and RRR indicate the production of ethanol by biological synthesis is outside the scope of both standards. As stated on page 8-23 of the background information document for the proposed Subpart NNN standard (EPA-450/3-83-005a; December 1983) - “The scope of the distillation NSPS does not include polymers, coal tar distillation products, chemicals extracted from natural resources, or chemicals totally produced by biological synthesis.” Also, the background information document for the proposed Subpart RRR standard (EPA-450/3-90-016a; June 1990) indicates on page 3-2 that the list of chemicals included in the scope of the standard does not include polymers or chemicals produced exclusively by biological synthesis.

The U.S. Environmental Protection Agency (EPA) has previously indicated the applicability of Subparts NNN and RRR should be determined on a case-by-case basis for facilities producing ethanol by the use of a biological fermentation process. Based on a review of previous EPA determinations and background documents, we have determined the production of fuel-grade ethanol by fermentation at the Highlands Ethanol facility will not be subject to NSPS Subparts NNN and RRR.

If there are any questions regarding this determination, please contact Mr. Keith Goff of the EPA Region 4 staff at (404) 562-9137.

Sincerely,



Carol L. Kemker
Acting Director
Air, Pesticides, and Toxics
Management Division

cc: Al Linero, Florida Department of
Environmental Protection

Jeff Harrington, AMEC Earth & Environmental



RECEIVED

JUL 21 2009

July 20, 2009

Mr. Al Linero
Program Administrator
Special Projects Section
Florida Department of Environmental Protection
Bob Martinez Center
2600 Blairstone Road, MS #5505
Tallahassee, FL 32399-2400

BUREAU OF AIR REGULATION

Re: Request for Additional Information DEP File Number: 0550061-001-AC

Dear Al:

On behalf of Highlands Ethanol LLC (Highlands Ethanol), AMEC Earth & Environmental (AMEC) is providing information requested by the Florida Department of Environmental Protection (FDEP). Specifically, the results of dispersion modeling of predicted fugitive emissions from plant roadways is being provided. Our letter dated April 14, 2009, provides reasons why roadway fugitive emissions were not modeled in the initial application package filed on February 17, 2009. While we believe those reasons remain valid, Highlands Ethanol is submitting the modeling results to facilitate FDEP's review of the application package.

In the course of performing the modeling of predicted fugitive roadway emissions, AMEC discovered that the meteorological data used in the modeling had been incorrectly processed. Consequently, the modeling results and meteorological data filed with our letter dated April 14, 2009, are not accurate. The Greenwich Mean Time (GMT) settings in the AERMET meteorological data processor had been incorrectly set for both the surface and upper air observations. The GMT settings have been corrected and AMEC is providing a CDROM with this letter that includes the corrected meteorological data, the AERMET processing files, and the AERMOD dispersion model results.

The CDROM includes two sets of processed meteorological data, one based on the surface characteristics of the proposed facility site and the other based on the surface characteristics of the NWS site at West Palm Beach Airport. AMEC ran the AERMOD dispersion model for the significant impact analysis and interactive analysis using both sets of meteorological data. The originally submitted February 2009 conclusions of the dispersion modeling analysis remain unchanged as a result of this additional modeling performed with the updated meteorological data sets and predicted fugitive roadway emissions. However, the values presented in the tables have changed. The updated tables are provided in Attachment A.

The roadways were constructed in AERMOD as a series of 209 volume sources with dimensions of 10 meters long by 10 meters wide by 9 meters high. The width and length were



based on a roadway width of roughly 4 meters plus an allowance in accordance with mobile source modeling procedures of 6 meters to account for the turbulence caused by the vehicles as they move along the roads. The height was based on trucks with a height of 14.75 feet. This height was doubled in accordance with mobile source modeling procedures. The release height was assigned as the midpoint of the volume source height, or 4.5 meters above ground level. Initial dispersion dimensions were assigned by dividing each of the volume source width and height by 2.15. The volume sources were then placed along the roads with a spacing of no more than 10 meters apart to ensure no gaps between the sources. The fugitive emissions calculated for the roadways were distributed uniformly to each volume source, accounting for those portions of the roads that receive two-way traffic and those that receive one-way traffic. The two-way segments are assigned emissions twice that of the one-way segments.

The February 2009 application submittal provided emissions for unpaved road surfaces in the feedstock delivery area. Highlands Ethanol is now designing those road surfaces to be paved. Included in Attachment B are updated emission calculations for the feedstock delivery roads, which are intended to replace those provided in the February submittal.

In addition to the modeling results, AMEC is also enclosing in Attachment C both proof of publication of the public notice of application that was published in *Highlands Today* on July 4, 2009, and a full page of the newspaper issue that includes the notice.

We believe that these enclosed items will satisfy your current outstanding data requests. If you have any questions, please feel free to call me at (207) 879-4222, ext. 37.

Very truly yours,
AMEC Earth & Environmental

A handwritten signature in black ink that reads "Jeffrey R. Harrington". The signature is written in a cursive style and is followed by a horizontal line.

Jeffrey R. Harrington, P.E.
Senior Project Engineer

- cc: T. Eves – Highlands Ethanol
A. Smithe – Highlands Ethanol
C. Davis – Highlands Ethanol
L. Modica – AMEC
K. Jameson – AMEC

ATTACHMENT A

Updated Dispersion Modeling Summary Tables

Table 6-5. Biomass Boilers Load Analysis Modeling Results

Pollutant	Averaging Period	Maximum Predicted Concentration ($\mu\text{g}/\text{m}^3$) ^a			Maximum Load Case
		100% Load	75% Load	50% Load	
SO ₂	3-hour	104	89.0	70.5	100%
	24-hour	42.6	34.2	25.6	100%
	Annual	7.37	6.26	4.85	100%
PM ₁₀	24-hour	10.7	8.56	6.40	100%
	Annual	1.84	1.56	1.21	100%
NO ₂	Annual	3.68	3.13	2.42	100%
CO	1-hour	138	117	92.3	100%
	8-hour	74.7	63.4	49.9	100%
Pb	3-month	0.0035 ^b	0.0029 ^b	0.0022 ^b	100%

^a $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

^b based on a one month average, a conservative assumption

Table 6-6. Significant Impact Analysis Modeling Results

Pollutant (Load)	Averaging Period	Year	Date (Hr)	Receptor	AERMOD	Significant
				UTM Coordinates (km)	Predicted Conc. ($\mu\text{g}/\text{m}^3$)	Impact Levels ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	2005	01/27 (03)	494.15, 3013.45	104	25
	24-hour	2001	12/5	492.91, 3013.04	42.6	5
	Annual	2004	--	492.91, 3013.19	7.37	1
PM ₁₀	24-hour	2005	01/10	492.97, 3012.97	23.1	5
	Annual	2001	--	493.01, 3012.96	4.70	1
NO ₂	Annual	2004	--	492.91, 3013.19	3.68	1
CO	1-hour	2005	01/27 (05)	494.15, 3013.35	138	2,000
	8-hour	2001	02/17 (08)	494.15, 3013.55	74.7	500
Pb	3-month	2003	08/31	492.91, 3013.26	0.0035 ^a	0.1

^a based on a one month average, a conservative assumption

Table 6-10. PSD Class II Increment and NAAQS Analysis

Pollutant	Averaging Period	Project plus Interactive Sources ($\mu\text{g}/\text{m}^3$)	PSD Class II Increments ($\mu\text{g}/\text{m}^3$)	Background Air Quality ($\mu\text{g}/\text{m}^3$)	Modeled Impacts plus Background ($\mu\text{g}/\text{m}^3$)	FAAQS/ NAAQS ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	102	512	10.5	113	1300
	24-hour	43.9	91	7.9	51.8	365
	Annual	8.93	20	3.1	12.0	80
PM ₁₀	24-hour	23.1	30	42	65.1	150
	Annual	4.74	17	20.1	24.8	50
PM _{2.5}	24-hour	12.3	--	19.6	31.9	35
	Annual	2.45	--	9.6	12.1	15
NO ₂	Annual	7.73	25	18	25.7	100

Table 6-11. Pre-Construction Monitoring Analysis Results

Parameter	Averaging Period	AERMOD Predicted Conc. ($\mu\text{g}/\text{m}^3$)	Significant Monitoring Conc. ($\mu\text{g}/\text{m}^3$)
SO ₂	24-hour	42.6	13
PM ₁₀	24-hour	23.1	10
NO ₂	Annual	3.68	14
CO	8-hour	74.7	575
Pb ^a	3-month	0.0035 ^a	0.1

^a Modeled Pb result is based on a 1-month average, which provides a conservative comparison to the 3-month SMC.

Table 6-13. Soils and Vegetation Screening Modeling – Project Only

Parameter	Averaging Period	AERMOD Predicted Conc. ($\mu\text{g}/\text{m}^3$)	USEPA Screening Level ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hour	138	917
	3-hour	104	786
	Annual	7.37	18
NO ₂	4-hour	52.2	3760
	8-hour	37.4	3760
	1-month	7.20	564
	Annual	3.68	94

ATTACHMENT B

Updated Fugitive Emission Calculations for Feedstock Delivery Roads

**VERENIUM BIOFUELS CORP.
HIGHLANDS ETHANOL
VEHICLE FUGITIVES (PAVED ROADS)**

SOURCE DESCRIPTION

Approximately 130 trucks per day will be used to deliver feedstock and will use the feedstock roads, and an additional 100 vehicles per day will drive on the plant roads. The feedstock roads will be unpaved, consisting primarily of gravel. The plant roads will be paved with asphalt. To minimize fugitive dust (PM) emissions during dry periods, unpaved roads will be wet down with water. Because Highlands Ethanol is considering the use of supplemental biomass in its boilers, an additional 120 trucks per day are conservatively assumed for delivering the supplemental fuel. These trucks are conservatively assumed to use the unpaved feedstock roads.

OPERATING PARAMETERS

Operating Schedule	8,760 hr/yr			
<u>Vehicle Traffic</u>	<u>Vehicles/Day</u>	<u>Miles/Vehicle</u>	<u>VMT/Day</u>	<u>VMT/Year</u>
Feedstock Delivery	130	0.63	81.62	29,793
Employee Vehicles	0	0.00	0.00	0
Product Tankers	0	0.00	0.00	0
Denaturant Tankers	0	0.00	0.00	0
Fuel Delivery Trucks	120	0.63	75.35	27,501
Chemical Delivery Trucks	0	0.00	0.00	0
Ash Disposal Trucks	0	0.00	0.00	0
Process Waste Trucks	0	0.00	0.00	0
Vendors/Deliveries	0	0.00	0.00	0
Miscellaneous	0	0.00	0.00	0
TOTAL			156.97	57,294

EMISSION CALCULATIONS ¹

$$E = k (sL/2)^{0.65} * (W/3)^{1.5}$$

$$E_{est} = E (lbs/VMT) * [1-(P/4N)]$$

where:

E = particulate emission factor (lb/VMT)

	<u>PM10</u>	<u>PM2.5</u>	
k =	0.016	0.0024	particle size multiplier (Table 13.2.1-1)
sL =	0.6	0.6	road surface silt loading (g/m ² , Table 13.2.1-3)
W =	29	29	average weight of the vehicles traveling the road (tons)
P =	120	120	Days rainfall > 0.01" (Figure 13.2.1-2)
N =	365	365	days in averaging period

Emission Factor

$$E = 0.016 * (0.6/2)^{0.65} * (29/3)^{1.5}$$

0.069 lbs PM10/VMT

$$E = 0.0024 * (0.6/2)^{0.65} * (29/3)^{1.5}$$

0.010 lbs PM2.5/VMT

**VERENIUM BIOFUELS CORP.
 HIGHLANDS ETHANOL
 VEHICLE FUGITIVES (PAVED ROADS)**

Adjusted for Rainfall

$$E_{est} = 0.07 \text{ lbs/VMT} * \{1 - [120 / (4 * 365)]\}$$

0.063 lbs PM10/VMT

$$E_{est} = 0.01 \text{ lbs/VMT} * \{1 - [120 / (4 * 365)]\}$$

0.009 lbs PM2.5/VMT

Emission Calculations

*Average PM10 (Lbs/Hr) = 0.06 lbs PM10/VMT * 57,294 VMT/yr / 8,760 hrs/yr*
0.41 lb/hr PM10

*Annual PM10 (TPY) = Avg (lbs/hr) * 8,760 hrs/yr / 2,000 lbs/ton*
1.80 tpy PM10

*Average PM2.5 (Lbs/Hr) = 0.01 lbs PM10/VMT * 57,294 VMT/yr / 8,760 hrs/yr*
0.06 lb/hr PM2.5

*Annual PM2.5 (TPY) = Avg (lbs/hr) * 8,760 hrs/yr / 2,000 lbs/ton*
0.27 tpy PM2.5

Emissions Summary

<i>Pollutant</i>	<i>Average (lbs/hr)</i>	<i>Annual (TPY)</i>
PM10	0.4	1.8
PM2.5	0.06	0.3

REFERENCES/NOTES:

1 EPA, AP-42, Section 13.2.1, Paved Roads, November 2006.

ATTACHMENT C

Public Notice of Application

NOTICE OF APPLICATION
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION
DEP File No. DEP File No. 0550061-001-AC
(PSD-FL-406)
Highlands Ethanol, LLC
Cellulosic Ethanol Production Facility
Highlands County

Highlands Today and The Tampa Tribune

Published Daily

Sebring, Highlands County, Florida

The Department of Environmental Protection (Department) announces receipt of an application for an air construction permit from Highlands Ethanol, LLC. The application is to construct a cellulosic ethanol production facility located in Highlands County approximately 2 miles northeast of Brighton and north of State Road 70. The feedstocks for the facility will be dedicated energy crops, such as energy cane and forage sorghum, grown on adjacent farmland. The feedstocks will be converted to sugars that will be fermented to produce fuel ethanol. The ethanol will be subsequently denatured with gasoline to produce fuel grade ethanol/gasoline blend (E95). Residues such as stillage will be used for on-site steam generation.

State of Florida }
County of Highlands } SS.

Before the undersigned authority personally appeared C. Pugh, who on oath says that she is the Advertising Billing Supervisor of Highlands Today & The Tampa Tribune, daily newspapers published at Sebring in Highlands County, Florida, that the attached copy of advertisement being a

The initial application was received on February 16, 2009. The most recent submittal in response to the Department's requests for additional information was received on April 17, 2009. The application is under review by the Department to determine whether it is complete. When complete, it will be processed under the rules for the Prevention of Significant Deterioration (PSD) of Air Quality, requiring adherence to Best Available Control Technology (BACT) and compliance with the National Ambient Air Quality Standards.

Legal Ads IN THE Highlands Today

In the matter of

Legal Notices

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the following Department offices:

was published in said newspaper in the issues of

Dept. of Environmental Protection
Bureau of Air Regulation
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32399-2400
Telephone: 850/414-7268 or 921-9537
Fax: 850/921-9533

07/04/2009

Dept. of Environmental Protection South
District Office - Air Program
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901-3881.
Telephone: 239/332-6975
Fax: 239/332-6969

Dept. of Environmental Protection
South District Office - Branch Office
2812 Kenilworth Boulevard
Sebring, Florida 33870
Telephone: 863/314-5975
Fax: 863/314-5979

Affiant further says that the said Highlands Today & The Tampa Tribune are newspapers published at Sebring in said Highlands County, Florida, and that the said newspapers have heretofore been continuously published in said Highlands County, Florida, each day and have been entered as second class mail matter at the post office in Sebring, in said Highlands County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

Key portions of the application and additional information can be accessed at the Department's website at:
www.dep.state.fl.us/Air/permitting/construction/highlands.htm

#6558

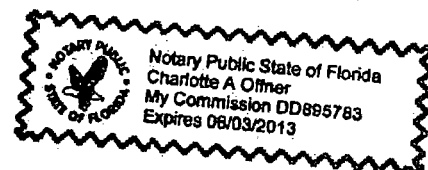
7/4/09



Sworn to and subscribed by me, this 4 day
of July, A.D. 2009

Personally Known or Produced Identification
Type of Identification Produced _____

Charlotte A. Offer



Legal Announcements

To Place An Ad Call 863-366-5876 or 1-800-952-3838 • Email classifieds@highlandstoday.com

Legal Notices

NOTICE OF APPLICATION
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION
DEP File No. DEP File No. 0550061-001-AC
(PSD-FL-406)
Highlands Ethanol, LLC
Cellulosic Ethanol Production Facility
Highlands County

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The initial application was received on February 16, 2009. The most recent submittal in response to the Department's requests for additional information was received on April 17, 2009. The application is under review by the Department to determine whether it is complete. When complete, it will be processed under the rules for the Prevention of Significant Deterioration (PSD) of Air Quality, requiring adherence to Best Available Control Technology (BACT) and compliance with the National Ambient Air Quality Standards.

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District Office - Air Program
2295 Victoria Avenue, Suite 364
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South District Office - Branch Office
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7/4/09

Legal Notices

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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
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DEP File No. DEP File No. 0550061-001-AC
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South District Office - Branch Office
2812 Kenilworth Boulevard
Sebring, Florida 33870
Telephone: 863/314-5975
Fax: 863/314-5979

Key portions of the application and additional information can be accessed at the Department's website at:
www.dep.state.fl.us/Air/permitting/construction/highlands.htm

Walker, Elizabeth (AIR)

From: Linero, Alvaro
Sent: Tuesday, March 17, 2009 8:08 PM
To: chuck.davis@verenium.com
Cc: Jameson, Kevin; Tim Eves; Nelson, Deborah; Read, David; jeff.harrington@amec.com; joe.vaccaro@amec.com; Satyal, Ajaya
Subject: RE: Completeness determination - Highlands Cellulosic Ethanol Facility
Attachments: HighlandsRAI1.pdf

Dear Mr. Davis:

Please review the attached letter as it relates to the Verenium project planned in Highlands County.

If you, your staff or the project consultant have any questions, please contact David Read at 850-414-7268 or Debbie Nelson at 850-921-9537.

Thank you.

Alvaro Linero, Program Administrator
Bureau of Air Regulation
Special Projects Section
State of Florida DEP
850-921-9523

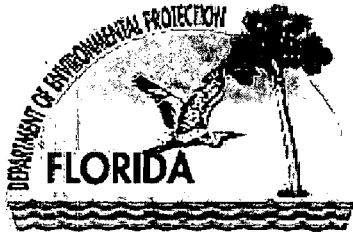
The Department of Environmental

Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and

improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of

service you received. Copy the url below to a web browser to complete the DEP

survey: <http://survey.dep.state.fl.us/?refemail=Alvaro.Linero@dep.state.fl.us> Thank you in advance for completing the survey.



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor
Jeff Kottkamp
Lt. Governor
Michael W. Sole
Secretary

March 17, 2009

Electronically Sent – Received Receipt Requested

chuck.davis@verenium.com

Mr. Charles F. Davis III,
Senior Vice President, Commercial Development
Highlands Ethanol LLC
55 Cambridge Parkway, 8th Floor
Cambridge, Massachusetts 02142

Re: Request for Additional Information
DEP File Number: 0550061-001-AC

Dear Mr. Davis:

The Department has received your application for an Air Construction Permit by hardcopy submission on February 16, 2009. After review, it has been determined that the application is incomplete. In order to continue processing your application, the Department will need the additional information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Feedstock Storage. In Section 2, page 2-2 of the air permit construction application, it is stated that there will not be a feedstock storage pile. Does this preclude a temporary storage pile? If there is a temporary storage pile, what is its expected size and how long will the feedstock be stored before it is feed into the hydrolysis process?
2. BACT Analysis Cost Analyses. In Section 5 of the permit application a Prevention of Significant Deterioration (PSD), Best Available Control Technology (BACT) analysis was performed for criterion air pollutants. However, a ranking by costs for each BACT determination was not performed. For example, a cost ranking for NO_x control by Selective Catalytic Reduction (SCR) versus Non-Selective Catalytic Reduction (SNCR) technologies was not provided. Please provide cost rankings of the different BACT determinations presented in Section 5 of the application. [Rule 62-4.070, F.A.C. Reasonable Assurance]
3. BACT Options. In Section 5 of the permit application the BACT determinations for each emissions unit at the facility are described. Please provide a discussion and summary table of the BACT utilized for similar emissions units with their permitted limits at other similar ethanol plants in the United States. [Rule 62-4.070, F.A.C. Reasonable Assurance]

4. SCR versus SNCR for NO_x Control. Please provide documentation supporting the conclusion provided in the air permit application that use of a SCR prior to the Particulate Matter (PM) control device is not practical due to the PM in the exhaust stream degrading catalyst performance. [Rule 62-4.070, F.A.C. Reasonable Assurance]
5. Biomass Boiler PM Estimates. In Table 1 on page ES-4 of the permit application, the PM emissions estimates for the two biomass boilers are 17.3 tons per year (tpy) for each boiler. However, on pages 123 and 124 of the application, the estimates of PM emissions for each biomass boiler are 86.7 tpy. Please explain this discrepancy. [Rule 62-4.070, F.A.C. Reasonable Assurance]
6. Biomass Boiler Fuel Usage. Throughout the air permit application, it is stated that the biomass boilers will be capable of firing stillage cake, biogas, natural gas, propane and Ultra-Low Sulfur Diesel (ULSD). Please provide estimates of the air emissions from the boilers when firing each of these different fuels along with the expected amount of time and percentage of total fuel usage, based on heat input rate, that each fuel type will be used. [Rule 62-4.070, F.A.C. Reasonable Assurance]
7. Backup Boiler Emissions. In the air permit application, emissions estimates for the backup boiler were not provided when firing natural gas, biogas, propane or ULSD. Please provide emissions estimates for the backup boiler when firing each of these fuel types. [Rule 62-4.070, F.A.C. Reasonable Assurance]
8. Backup Generator and Fire Pump (Emergency Engines). In section 5.3.3.3 of the air permit application, the emergency generators and fire pump proposed for the project are briefly discussed. Are the generators and fire pump models planned for use for this project available? If so, please provide this information. [Rule 62-4.070, F.A.C. Reasonable Assurance]
9. EPA Exemption Letters. In Section 4.2 of the air permit application, it is indicated Highlands Ethanol LLC has requested site-specific exemptions from the U.S. Environmental Protection Agency (EPA) Region 4 with regard to the below listed New Source Performance Standards (NSPS). What is the status of these exemption requests?
 - 40 CFR 60 Subpart NNN – Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.
 - 40 CFR 60 Subpart RRR – Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Operations.[Rule 62-4.070, F.A.C. Reasonable Assurance]
10. Commercial, Residential and Other growth. An application must include information relating to the air quality impacts of, and the nature and extent of, all general, commercial, residential and other growth which has occurred since August 7, 1977, in the area the facility or modification would affect. Please provide information to satisfy this requirement. [Rule 62-4.070, F.A.C. Reasonable Assurance]
11. Surface Characteristics. Recent modeling guidance suggests and the Department requires that AERMET surface characteristics of the facility site and the National Weather Service site be compared to ensure conservatism. Please provide a model run for each averaging

time with surface characteristics from the facility site with National Weather Service upper air to ensure that your analysis was most representative.

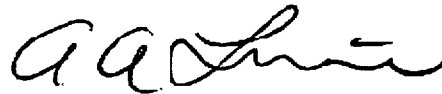
12. Class I Impact Analysis. Please provide a table with the Class I Significant Impact Analysis impacts. [Rule 62-4.070, F.A.C. Reasonable Assurance]
13. Significant Impact Area. Please provide a table or electronic spreadsheet with the list of sources used for the Increment and National Ambient Air Quality Analysis, including a list of all sources eliminated due to screening methods. Please verify that all sources within the Significant Impact Area (not including the 50 km buffer) were modeled. [Rule 62-4.070, F.A.C. Reasonable Assurance]
14. Truck Traffic. Regarding the particulate matter analyses provided to the Department, please indicate why truck traffic was not modeled. [Rule 62-4.070, F.A.C. Reasonable Assurance]

We look forward to discussing the comments directly with your staff and consultants in the near future.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C., requires that all applications for a construction permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C., now requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you should have any questions, please contact Mr. David Read at 850/414-7268 or Debbie Nelson at 850/921-9537.

Sincerely,



A.A. Linero, Program Administrator
Special Projects Section

Cc: Mr. Charles F. Davis III, Highland Ethanol LLC: chuck.davis@verenium.com
Tim Eves, Verenium: tim.eves@verenium.com
Kevin Jameson, AMEC: kevin.jameson@amec.com
Joe Vaccaro, AMEC, P.E.: joe.vaccaro@amec.com
Todd Rinck, EPA Region 4: rinck.todd@epa.gov
Heather Abrams, EPA Region 4: abrams.heather@epa.gov
Doug Neeley, EPA Region 4: neeley.doug@2epa.gov
Gregg Worley, EPA Region 4: worley.gregg@epa.gov
Katy Forney, EPA Region 4: forney.kathleen@epa.gov
Stan Krivo, EPA Region 4: krivo.stanley@epa.gov
A.J. Satyal, DEP SD: ajaya.satyal@dep.state.fl.us

Walker, Elizabeth (AIR)

From: Linero, Alvaro
Sent: Tuesday, March 17, 2009 8:28 PM
To: Walker, Elizabeth (AIR)
Subject: FW: Delivery Status Notification (Relay)
Attachments: RE: Completeness determination - Highlands Cellulosic Ethanol Facility

Elizabeth:

Re: Highlands Ethanol Project.

Can you update ARMS and save this response as receipt from responsible official?

thanks.

Al.

-----Original Message-----

From: Exchange Administrator
Sent: Tue 3/17/2009 8:08 PM
To: Linero, Alvaro
Cc:
Subject: Delivery Status Notification (Relay)

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

Tim.Eves@verenum.com
chuck.davis@verenum.com



May 22, 2009

Mr. Al Linero
Program Administrator
Special Projects Section
Florida Department of Environmental Protection
Bob Martinez Center
2600 Blainstone Road, MS #5505
Tallahassee, FL 32399-2400

RECEIVED

MAY 26 2009

BUREAU OF AIR REGULATION

Re: Request for Additional Information DEP File Number: 0550061-001-AC
Feedstock Handling and Supplemental Biomass Fuel Storage

Dear Al:

On behalf of Highlands Ethanol LLC (Highlands Ethanol), AMEC Earth & Environmental (AMEC) is providing information requested during a conference call between the Florida Department of Environmental Protection (FDEP) and representatives of Highlands Ethanol. Specifically, information is being provided that addresses feedstock handling and supplemental biomass fuel storage. As requested, we are also providing for your Sebring office an extra copy of Highlands Ethanol's application for Air Construction Permit.

Ethanol Plant Feedstock Handling

Energy cane and forage sorghum feedstocks for ethanol production will be grown on adjacent farm land. The feedstock will be freshly harvested material delivered to the plant from the adjacent fields by trucks equipped with a tipper for unloading material. Upon receipt, the feedstock will be offloaded to a live bottom bin. The live bottom bin will then transfer the feedstock to conveyors which will pass the feedstock through several washing steps prior to the hydrolysis process. Attachment 1 provides a diagram of the feedstock receiving and handling processes. Because of the feedstock's high moisture content and subsequent washing steps, fugitive emissions are not expected from this part of the process.

As much as practical material transfer points will be enclosed. Belts will be covered to keep wind and rain away from the material. All conveying will be by mechanical means and no air (such as pneumatic systems) will be used in conveying, thereby reducing potential emission points.



Supplemental Biomass Fuel Storage and Handling

Description of Supplemental Biomass Fuel

The proposed supplemental biomass fuel for the boilers will consist of varying parts of whole tree wood chips (WTC), bagasse, or energy crop material. The fuel will be sized and prepared off-site to a condition suitable for firing in the biomass boilers. All three fuels will be delivered and used in their state as produced at the source, meaning that they will not be specially processed or dried on-site. The moisture content of the supplemental biomass will be in an expected range of 35% to 65% based on total weight.

Feed Rate and Use

Supplemental biomass will be used in the biomass boilers during times when insufficient stillage is available for the biomass boilers (i.e., during times when maximum boiler capacity cannot be achieved with stillage and biogas alone). Supplemental biomass use is expected particularly during system start ups, at which time ethanol production is not in full operation and, as a consequence, stillage is not being produced. Highlands Ethanol anticipates that supplemental biomass usage would be minimal, but could occur during as many as 5 start-ups per year, with an anticipated duration of 72 hours per start-up. A supplemental biomass feed rate of 38 tons/hour would be expected under these start-up conditions. During normal operations, as much as 30 percent of the heat input to the biomass boilers could be from supplemental biomass use during short-term conditions. On an annual basis, including anticipated start-ups, supplemental biomass is estimated to account for 15 to 20 percent of the total heat input to the biomass boilers.

Handling Equipment and Operation

The supplemental biomass fuel will be delivered to the plant site in conventional tractor-trailer units or self-unloading trailers with live floors. A diagram illustrating the supplemental biomass delivery and handling is provided in Attachment 2. Conventional trailers with biomass will be unloaded using a hydraulic operated trailer dump platform. For either type of trailer, the supplemental biomass will be dumped on the ground and mobile equipment will move the material to small storage piles. A revised site plan is provided in Attachment 3 showing the truck dumper and supplemental fuel storage area just to the west of the ethanol production area. The three types of materials will be stored separately as much as possible because of their different fuel values.

When required, the stored supplemental biomass fuels will be reclaimed, again using a mobile wheel loader, and placed onto the live reclaim area from where the material will be conveyed by



belt conveyors to a scalping screen or shaker screen. These devices remove any oversize or foreign materials which may be detrimental to the boiler feed system or operation. Additional belt conveyors will transport the acceptable material to the boiler feed bin from where it will be distributed and fed into the boilers.

Particulate Matter Emissions and Control

Due to the high moisture content of the supplemental biomass, fugitive particulate matter (PM) emissions from handling and storage are expected to be minimal. As much as practical, material transfer points and chutes will be enclosed. Belt conveyors will be equipped with cleaning devices to reduce carry-over of small particles. Belts will be covered to keep wind and rain away from the material. All conveying will be by mechanical means and no air (such as pneumatic systems) will be used in conveying, thereby reducing potential emission points.

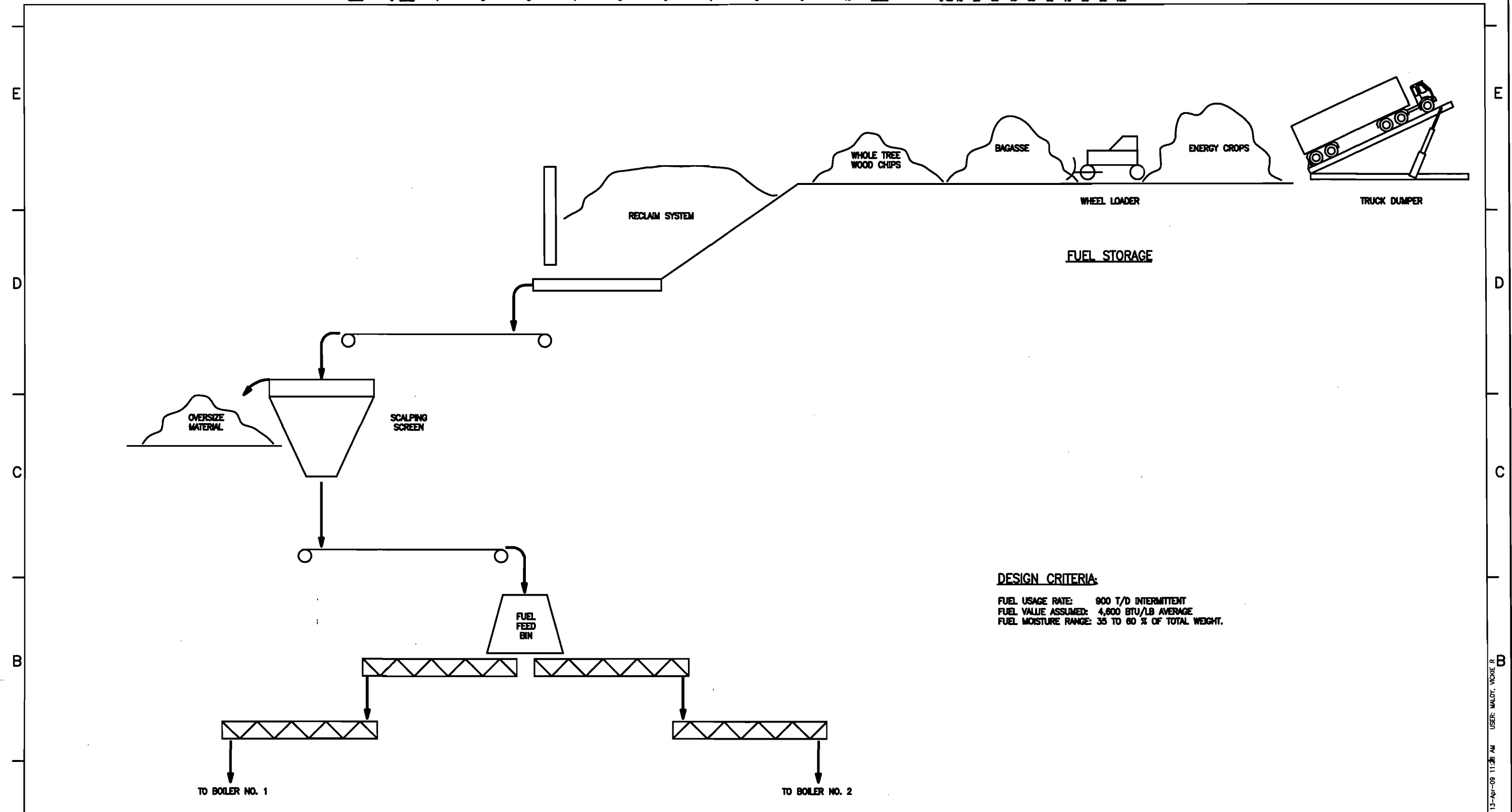
We believe that these responses will satisfy your data requests. If you have any questions, please feel free to call me at (207) 879-4222, ext. 37.

Very truly yours,
AMEC Earth & Environmental

A handwritten signature in black ink that reads "Jeffrey R. Harrington". The signature is written in a cursive style and is followed by a horizontal line.

Jeffrey R. Harrington, P.E.
Senior Project Engineer

- cc: T. Eves – Highlands Ethanol
A. Smithe – Highlands Ethanol
C. Davis – Highlands Ethanol
L. Modica – AMEC
K. Jameson – AMEC



DESIGN CRITERIA:
 FUEL USAGE RATE: 900 T/D INTERMITTENT
 FUEL VALUE ASSUMED: 4,600 BTU/LB AVERAGE
 FUEL MOISTURE RANGE: 35 TO 60 % OF TOTAL WEIGHT.

REV	DATE	DESCRIPTION	BY	CHK	APP	APP	APP	APP	APP	REV	DATE	DESCRIPTION	BY	CHK	APP	APP	APP	APP	REF	TITLE
8										7									1	
6										5									2	

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FLORIDA COA NO.: 6370

APPROVED FOR	CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT NO. 180400	ACTIVITY NO.	BY	DATE
SCALE: NTS	PACKAGE CODE	CHK	APP

amec 400 EXECUTIVE CENTER DR. SUITE 200 GREENVILLE, SC 29615

PROCESS SUPPLEMENTAL BIOMASS SYSTEM BOILER FUEL BLOCK FLOW DIAGRAM

VERENIUM
 THE FUTURE OF ENERGY
 BIOMASS TO ETHANOL COMMERCIAL PLANT NO. 1

CLIENT DWS. NO. ATTACHMENT 2
 DRAWING NO. D-0000-N-0300
 REV. A

CAD FILE: C:\TEMP\D-0000-N-0300.DWG

USER: MALOY, WICKIE R
 PLOTTED: 13-Apr-09 11:28 AM
 SWED: 13-Apr-09 10:26 AM

HIGHLANDS COUNTY
(SPECIAL USE PERMIT 08-1)
PRELIMINARY SITE ARRANGEMENT INFORMATION

- TOTAL SITE AREA (ACRES): 95.71
- IMPERVIOUS AREA (%): MAX 25%
- WATER SUPPLY: POTABLE WATER WELL AND NON-POTABLE WATER WELL
- SETBACKS: 25 FEET PER HIGHLANDS COUNTY LAND DEVELOPMENT REGULATIONS (SECTION 12.05.200 AU AGRICULTURAL: 1. MINIMUM YARD REQUIREMENTS)
- BASE FLOOD ELEVATION: 33.08 NAVD 88 AS DETERMINED BY AMEC E&C (HIGHLANDS COUNTY APPROVAL PENDING)
- MINIMUM FINISHED FLOOR ELEVATION: 35.50 NAVD 88
- PARKING SPACES: 50
- FUTURE LAND USE: AU-AGRICULTURAL
- ZONING DISTRICT: AU-AGRICULTURAL
- OFFICE SQ. FOOTAGE APPROX 31,000 SF
- FLOOR AREA RATIO: 5.6%



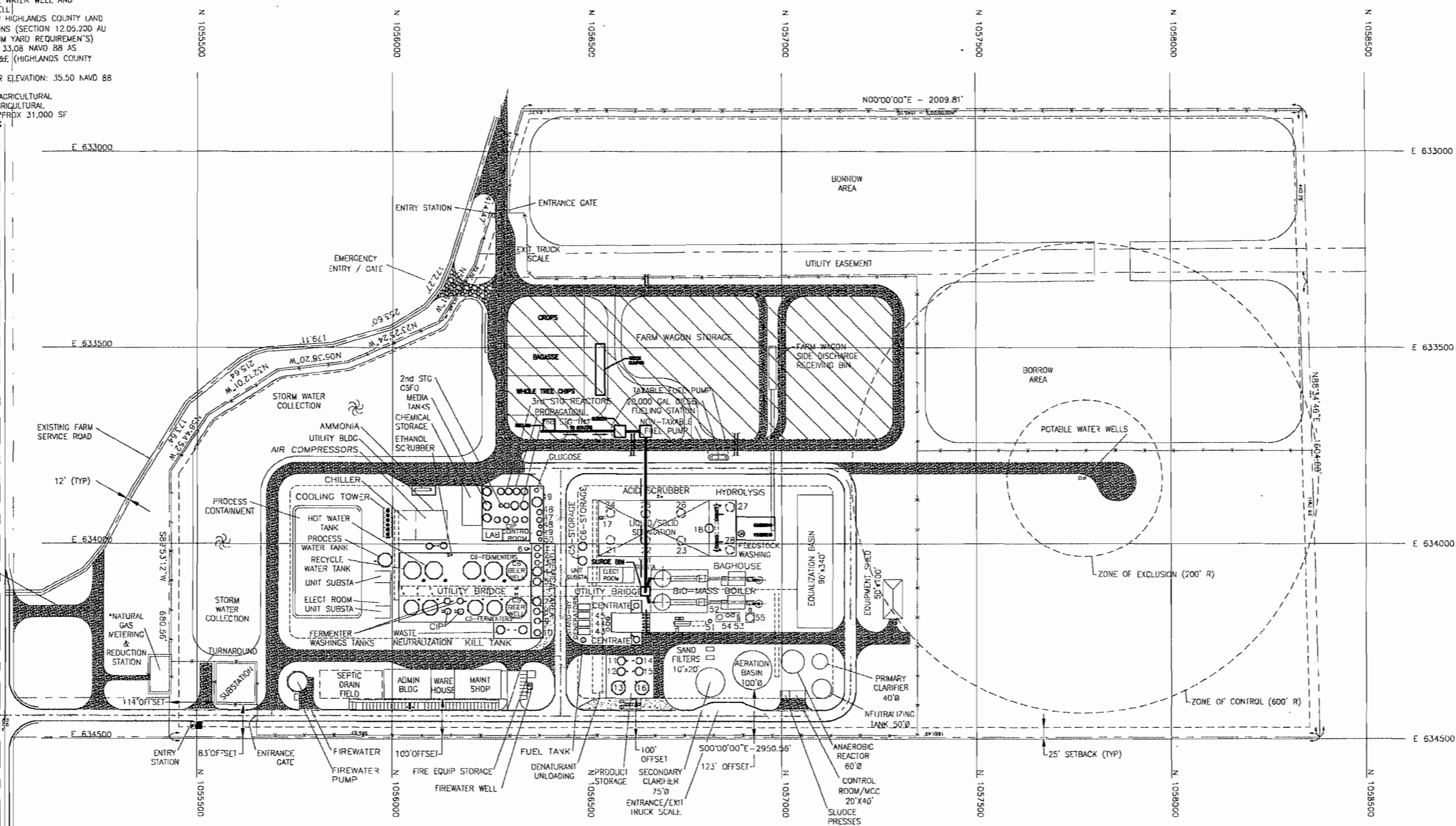
- LEGEND
- FENCE
 - PROPERTY LINE
 - ASPHALT PAVEMENT
 - GRAVEL SURFACE
 - CONCRETE SURFACE

CP-1 Tank List

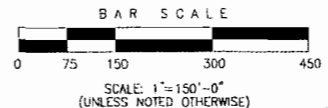
CP-1 Tank List	HT	
1	20% Caustic Tank	28'
2	Sodium Thiosulfate	14'
3	Sodium Hypochlorite Storage Tank	14'
4	Corn Steep Storage Tank	30'
5	50% Caustic Soda Tank	26'
6	Clean Caustic Tank	14'
7	Slaked Lime System	100'
8	3% Sulfuric Acid Tank	28'
9	Phosphoric Acid Tank	18'
10	98% Sulfuric Acid Tank	28'
11	Shift Product Tank 1	24'
12	Shift Product Tank 2	24'
13	Product Storage Tank 1	40'
14	Denaturant Storage Tank	20'
15	Recycle Tank	24'
16	Product Storage Tank 2	40'
17	C5 Neutralization Tank	25'
18	Blow Tank	25'
19	Dry Whey Bin	52'-7"
20	Expansion Tank	30'
21	Washer Feed Tank 1	25'
22	Washer Feed Tank 2	25'
23	Washer Feed Tank 3	25'
24	Washer Filtrate Tank 1	25'
25	Washer Filtrate Tank 2	25'
26	Washer Filtrate Tank 3	25'
27	Pressed Bagass Storage Tank 1	20'
28	Pressed Bagass Storage Tank 2	20'

ITEMS 29-42 RESERVED

43	Stripper Rectifier	8'
44	C5 Beer Stripper	60'
45	C6 Beer Stripper	60'
46	Sodium Phosphate	36'
47	Soy Flour	32'
48	Ammonia Sulfate	30'
49	Potassium Phosphate	24'
50	Urea	20'
51	Urea	20'
52	Limestone	50'
53	Sand	29'
54	Sodium Bicarbonate	29'
55	Ash Silo	25'
56	Biomass Boiler Stacks	220'



NOTE:
* PROPERTY CUTS DE PARCEL LIMITS, NOT UNDER OWNERSHIP CONTROL OF VERENIUM



REV	DATE	ISSUED FOR INFORMATION	DRN	CHK	APP	APP	APP	APP	APP	REV	DATE	ISSUED FOR INFORMATION	DRN	CHK	APP	APP	APP	APP	APP	
B	05NOV08	REVISED																		
A	29OCT08	ISSUED FOR INFORMATION																		

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APPROVED FOR _____

CLIENT PROJECT MGR. DEPARTMENT MGR. PROJECT MGR.

STAMP/SEAL

PRELIMINARY

FLO RDA COA NO.: 8379

PROJECT NO.	ACTIVITY NO.	BY	DDMMYY	SUBJECT
		DSN	27OCT08	
		DRN	27OCT08	
		CHK		
		APP	JFD	27OCT08

amec

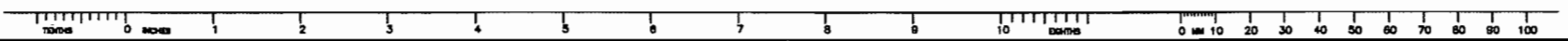
PRELIMINARY
SITE GENERAL ARRANGEMENT

VERENIUM
THE NATURE OF ENERGY™

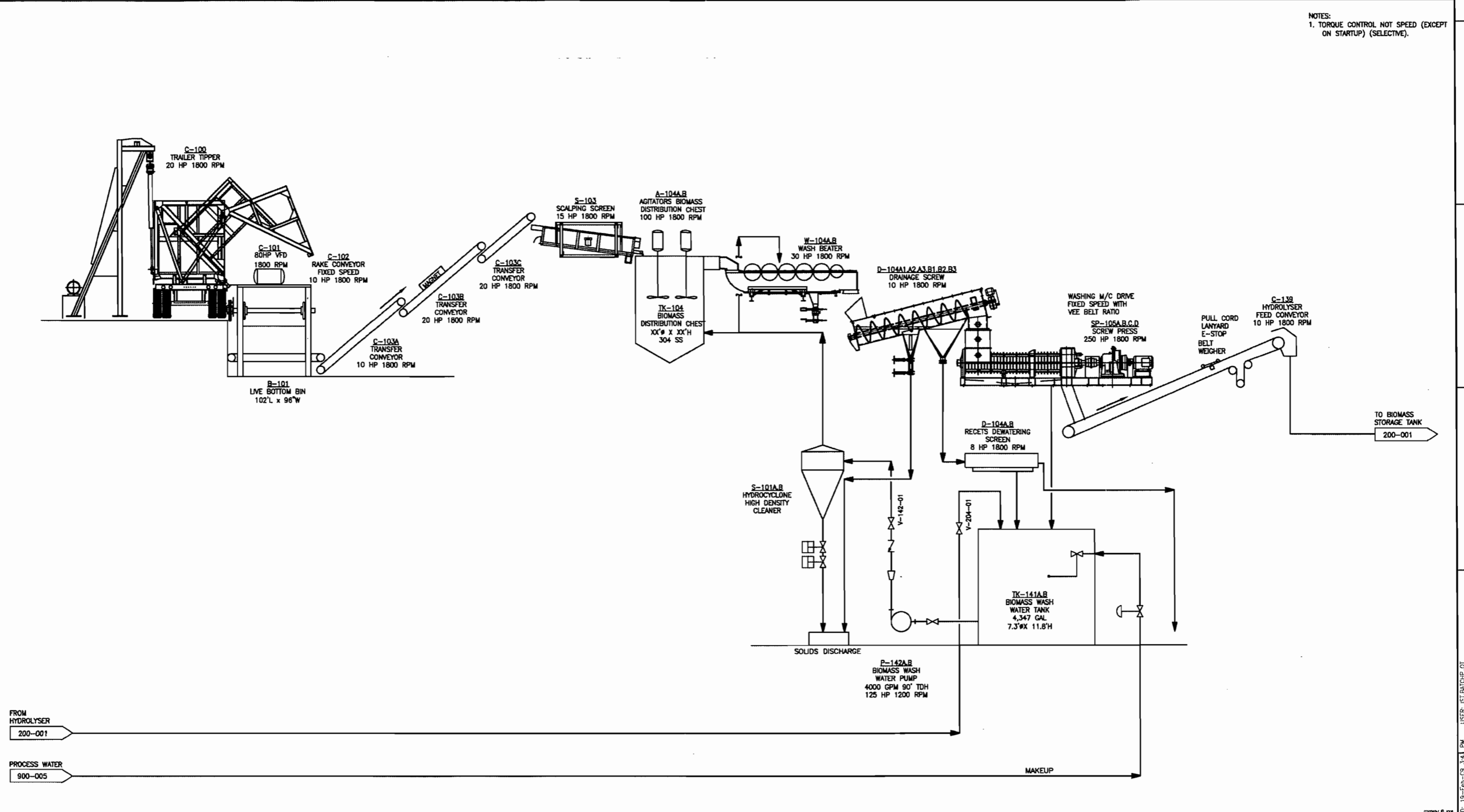
CLIENT DWG. NO.
DRAWING 3

DRAWING NO.
D-000-C-SK-0004

REV. B



NOTES:
1. TORQUE CONTROL NOT SPEED (EXCEPT ON STARTUP) (SELECTIVE).



REV ID/M/Y	REVISION	DRN	CHK	APP	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE
22	34													

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STAMP/SEAL

APPROVED FOR CONSTRUCTION

CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT PHASE	AIR PERMITTING	
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
157727		
SCALE	DRN. DSN.	BY
NTS		D/M/Y

amec 400 EXECUTIVE CENTER DR. SUITE 200 GREENVILLE, SC 29615

AREA 100 FEEDSTOCK HANDLING

SUBJECT BIOMASS HANDLING LINE A CP-1 COMMERCIAL PLANT 36 MG Y

VERENIUM THE NATURE OF ENERGY
HIGHLANDS ETHANOL
HIGHLANDS COUNTY, FL

CLIENT DWG. NO. ATTACHMENT 1
DRAWING NO. D-157727-PFD-100-001
REV. A

CADD FILE ADDRESS
P:\10-CA0111-PRC\FFD-TD-BASEPROCESS\D-157727-PFD-100-001

P:\10-CA0111-PRC\FFD-TD-BASEPROCESS\D-157727-PFD-100-001.dwg, 2/19/2009 3:43:04 PM, GVL-2J.p3, JERRY.KYZER\GVL-F31900160396, GREENVILLE

USER: IST.BATCHPLOT USER: IST.BATCHPLOT PLOTTED: 19-FEB-09 3:41 PM



July 20, 2009

Mr. Al Linero
Program Administrator
Special Projects Section
Florida Department of Environmental Protection
Bob Martinez Center
2600 Blainstone Road, MS #5505
Tallahassee, FL 32399-2400

RECEIVED

JUL 21 2009

BUREAU OF AIR REGULATION

Re: Request for Additional Information DEP File Number: 0550061-001-AC

Dear Al:

On behalf of Highlands Ethanol LLC (Highlands Ethanol), AMEC Earth & Environmental (AMEC) is providing information requested by the Florida Department of Environmental Protection (FDEP). Specifically, the results of dispersion modeling of predicted fugitive emissions from plant roadways is being provided. Our letter dated April 14, 2009, provides reasons why roadway fugitive emissions were not modeled in the initial application package filed on February 17, 2009. While we believe those reasons remain valid, Highlands Ethanol is submitting the modeling results to facilitate FDEP's review of the application package.

In the course of performing the modeling of predicted fugitive roadway emissions, AMEC discovered that the meteorological data used in the modeling had been incorrectly processed. Consequently, the modeling results and meteorological data filed with our letter dated April 14, 2009, are not accurate. The Greenwich Mean Time (GMT) settings in the AERMET meteorological data processor had been incorrectly set for both the surface and upper air observations. The GMT settings have been corrected and AMEC is providing a CDROM with this letter that includes the corrected meteorological data, the AERMET processing files, and the AERMOD dispersion model results.

The CDROM includes two sets of processed meteorological data, one based on the surface characteristics of the proposed facility site and the other based on the surface characteristics of the NWS site at West Palm Beach Airport. AMEC ran the AERMOD dispersion model for the significant impact analysis and interactive analysis using both sets of meteorological data. The originally submitted February 2009 conclusions of the dispersion modeling analysis remain unchanged as a result of this additional modeling performed with the updated meteorological data sets and predicted fugitive roadway emissions. However, the values presented in the tables have changed. The updated tables are provided in Attachment A.

The roadways were constructed in AERMOD as a series of 209 volume sources with dimensions of 10 meters long by 10 meters wide by 9 meters high. The width and length were

AMEC Earth & Environmental, Inc.
15 Franklin Street
Portland, ME 04101
Tel (207) 879-4222
Fax (207) 879-4223

www.amec.com



based on a roadway width of roughly 4 meters plus an allowance in accordance with mobile source modeling procedures of 6 meters to account for the turbulence caused by the vehicles as they move along the roads. The height was based on trucks with a height of 14.75 feet. This height was doubled in accordance with mobile source modeling procedures. The release height was assigned as the midpoint of the volume source height, or 4.5 meters above ground level. Initial dispersion dimensions were assigned by dividing each of the volume source width and height by 2.15. The volume sources were then placed along the roads with a spacing of no more than 10 meters apart to ensure no gaps between the sources. The fugitive emissions calculated for the roadways were distributed uniformly to each volume source, accounting for those portions of the roads that receive two-way traffic and those that receive one-way traffic. The two-way segments are assigned emissions twice that of the one-way segments.

The February 2009 application submittal provided emissions for unpaved road surfaces in the feedstock delivery area. Highlands Ethanol is now designing those road surfaces to be paved. Included in Attachment B are updated emission calculations for the feedstock delivery roads, which are intended to replace those provided in the February submittal.

In addition to the modeling results, AMEC is also enclosing in Attachment C both proof of publication of the public notice of application that was published in *Highlands Today* on July 4, 2009, and a full page of the newspaper issue that includes the notice.

We believe that these enclosed items will satisfy your current outstanding data requests. If you have any questions, please feel free to call me at (207) 879-4222, ext. 37.

Very truly yours,
AMEC Earth & Environmental

A handwritten signature in black ink that reads "Jeffrey R. Harrington". The signature is written in a cursive style and is underlined with a horizontal line.

Jeffrey R. Harrington, P.E.
Senior Project Engineer

cc: T. Eves – Highlands Ethanol
A. Smithe – Highlands Ethanol
C. Davis – Highlands Ethanol
L. Modica – AMEC
K. Jameson – AMEC

ATTACHMENT A

Updated Dispersion Modeling Summary Tables

Table 6-5. Biomass Boilers Load Analysis Modeling Results

Pollutant	Averaging Period	Maximum Predicted Concentration ($\mu\text{g}/\text{m}^3$) ^a			Maximum Load Case
		100% Load	75% Load	50% Load	
SO ₂	3-hour	104	89.0	70.5	100%
	24-hour	42.6	34.2	25.6	100%
	Annual	7.37	6.26	4.85	100%
PM ₁₀	24-hour	10.7	8.56	6.40	100%
	Annual	1.84	1.56	1.21	100%
NO ₂	Annual	3.68	3.13	2.42	100%
CO	1-hour	138	117	92.3	100%
	8-hour	74.7	63.4	49.9	100%
Pb	3-month	0.0035 ^b	0.0029 ^b	0.0022 ^b	100%

^a $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

^b based on a one month average, a conservative assumption

Table 6-6. Significant Impact Analysis Modeling Results

Pollutant (Load)	Averaging			Receptor UTM Coordinates (km)	AERMOD	Significant
	Period	Year	Date (Hr)		Predicted Conc. ($\mu\text{g}/\text{m}^3$)	Impact Levels ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	2005	01/27 (03)	494.15, 3013.45	104	25
	24-hour	2001	12/5	492.91, 3013.04	42.6	5
	Annual	2004	--	492.91, 3013.19	7.37	1
PM ₁₀	24-hour	2005	01/10	492.97, 3012.97	23.1	5
	Annual	2001	--	493.01, 3012.96	4.70	1
NO ₂	Annual	2004	--	492.91, 3013.19	3.68	1
CO	1-hour	2005	01/27 (05)	494.15, 3013.35	138	2,000
	8-hour	2001	02/17 (08)	494.15, 3013.55	74.7	500
Pb	3-month	2003	08/31	492.91, 3013.26	0.0035 ^a	0.1

^a based on a one month average, a conservative assumption

Table 6-10. PSD Class II Increment and NAAQS Analysis

Pollutant	Averaging Period	Project plus Interactive Sources ($\mu\text{g}/\text{m}^3$)	PSD Class II Increments ($\mu\text{g}/\text{m}^3$)	Background Quality ($\mu\text{g}/\text{m}^3$)	Modeled Impacts plus Background ($\mu\text{g}/\text{m}^3$)	FAAQS/NAAQS ($\mu\text{g}/\text{m}^3$)
SO ₂	3-hour	102	512	10.5	113	1300
	24-hour	43.9	91	7.9	51.8	365
	Annual	8.93	20	3.1	12.0	80
PM ₁₀	24-hour	23.1	30	42	65.1	150
	Annual	4.74	17	20.1	24.8	50
PM _{2.5}	24-hour	12.3	--	19.6	31.9	35
	Annual	2.45	--	9.6	12.1	15
NO ₂	Annual	7.73	25	18	25.7	100

Table 6-11. Pre-Construction Monitoring Analysis Results

Parameter	Averaging Period	AERMOD Predicted Conc. ($\mu\text{g}/\text{m}^3$)	Significant Monitoring Conc. ($\mu\text{g}/\text{m}^3$)
SO ₂	24-hour	42.6	13
PM ₁₀	24-hour	23.1	10
NO ₂	Annual	3.68	14
CO	8-hour	74.7	575
Pb ^a	3-month	0.0035 ^a	0.1

^a Modeled Pb result is based on a 1-month average, which provides a conservative comparison to the 3-month SMC.

Table 6-13. Soils and Vegetation Screening Modeling – Project Only

Parameter	Averaging Period	AERMOD Predicted Conc. ($\mu\text{g}/\text{m}^3$)	USEPA Screening Level ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hour	138	917
	3-hour	104	786
	Annual	7.37	18
NO ₂	4-hour	52.2	3760
	8-hour	37.4	3760
	1-month	7.20	564
	Annual	3.68	94

ATTACHMENT B

Updated Fugitive Emission Calculations for Feedstock Delivery Roads

**VERENIUM BIOFUELS CORP.
HIGHLANDS ETHANOL
VEHICLE FUGITIVES (PAVED ROADS)**

SOURCE DESCRIPTION

Approximately 130 trucks per day will be used to deliver feedstock and will use the feedstock roads, and an additional 100 vehicles per day will drive on the plant roads. The feedstock roads will be unpaved, consisting primarily of gravel. The plant roads will be paved with asphalt. To minimize fugitive dust (PM) emissions during dry periods, unpaved roads will be wet down with water. Because Highlands Ethanol is considering the use of supplemental biomass in its boilers, an additional 120 trucks per day are conservatively assumed for delivering the supplemental fuel. These trucks are conservatively assumed to use the unpaved feedstock roads.

OPERATING PARAMETERS

Operating Schedule	8,760 hr/yr			
<u>Vehicle Traffic</u>	<u>Vehicles/Day</u>	<u>Miles/Vehicle</u>	<u>VMT/Day</u>	<u>VMT/Year</u>
Feedstock Delivery	130	0.63	81.62	29,793
Employee Vehicles	0	0.00	0.00	0
Product Tankers	0	0.00	0.00	0
Denaturant Tankers	0	0.00	0.00	0
Fuel Delivery Trucks	120	0.63	75.35	27,501
Chemical Delivery Trucks	0	0.00	0.00	0
Ash Disposal Trucks	0	0.00	0.00	0
Process Waste Trucks	0	0.00	0.00	0
Vendors/Deliveries	0	0.00	0.00	0
Miscellaneous	0	0.00	0.00	0
TOTAL			156.97	57,294

EMISSION CALCULATIONS ¹

$$E = k (sL/2)^{0.65} * (W/3)^{1.5}$$

$$E_{est} = E (lbs/VMT) * [1-(P/4N)]$$

where:

E = particulate emission factor (lb/VMT)

	<u>PM10</u>	<u>PM2.5</u>	
k =	0.016	0.0024	particle size multiplier (Table 13.2.1-1)
sL =	0.6	0.6	road surface silt loading (g/m ² , Table 13.2.1-3)
W =	29	29	average weight of the vehicles traveling the road (tons)
P =	120	120	Days rainfall > 0.01" (Figure 13.2.1-2)
N =	365	365	days in averaging period

Emission Factor

$$E = 0.016 * (0.6/2)^{0.65} * (29/3)^{1.5}$$

0.069 lbs PM10/VMT

$$E = 0.0024 * (0.6/2)^{0.65} * (29/3)^{1.5}$$

0.010 lbs PM2.5/VMT

**VERENIUM BIOFUELS CORP.
HIGHLANDS ETHANOL
VEHICLE FUGITIVES (PAVED ROADS)**

Adjusted for Rainfall

$$E_{est} = 0.07 \text{ lbs/VMT} * \{1 - [120 / (4 * 365)]\}$$

0.063 lbs PM10/VMT

$$E_{est} = 0.01 \text{ lbs/VMT} * \{1 - [120 / (4 * 365)]\}$$

0.009 lbs PM2.5/VMT

Emission Calculations

$$\text{Average PM}_{10} \text{ (Lbs/Hr)} = 0.06 \text{ lbs PM}_{10}/\text{VMT} * 57,294 \text{ VMT/yr} / 8,760 \text{ hrs/yr}$$

0.41 lb/hr PM10

$$\text{Annual PM}_{10} \text{ (TPY)} = \text{Avg (lbs/hr)} * 8,760 \text{ hrs/yr} / 2,000 \text{ lbs/ton}$$

1.80 tpy PM10

$$\text{Average PM}_{2.5} \text{ (Lbs/Hr)} = 0.01 \text{ lbs PM}_{2.5}/\text{VMT} * 57,294 \text{ VMT/yr} / 8,760 \text{ hrs/yr}$$

0.06 lb/hr PM2.5

$$\text{Annual PM}_{2.5} \text{ (TPY)} = \text{Avg (lbs/hr)} * 8,760 \text{ hrs/yr} / 2,000 \text{ lbs/ton}$$

0.27 tpy PM2.5

Emissions Summary

<i>Pollutant</i>	<i>Average (lbs/hr)</i>	<i>Annual (TPY)</i>
PM10	0.4	1.8
PM2.5	0.06	0.3

REFERENCES/NOTES:

1 EPA, AP-42, Section 13.2.1, Paved Roads, November 2006.

ATTACHMENT C

Public Notice of Application

NOTICE OF APPLICATION
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION
DEP File No. DEP File No. 0550061-001-A0
(PSD-FL-406)
Highlands Ethanol, LLC
Cellulosic Ethanol Production Facility
Highlands County

Highlands Today and The Tampa Tribune

Published Daily

Sebring, Highlands County, Florida

The Department of Environmental Protection (Department) announces receipt of an application for an air construction permit from Highlands Ethanol, LLC. The application is to construct a cellulosic ethanol production facility located in Highlands County approximately 2 miles northeast of Brighton and north of State Road 70. The feedstocks for the facility will be dedicated energy crops, such as energy cane and forage sorghum, grown on adjacent farmland. The feedstocks will be converted to sugars that will be fermented to produce fuel ethanol. The ethanol will be subsequently denatured with gasoline to produce fuel grade ethanol/gasoline blend (E95). Residues such as stillage will be used for on-site steam generation.

State of Florida }
County of Highlands } SS.

Before the undersigned authority personally appeared C. Pugh, who on oath says that she is the Advertising Billing Supervisor of Highlands Today & The Tampa Tribune, daily newspapers published at Sebring in Highlands County, Florida, that the attached copy of advertisement being a

The initial application was received on February 16, 2009. The most recent submittal in response to the Department's requests for additional information was received on April 17, 2009. The application is under review by the Department to determine whether it is complete. When complete, it will be processed under the rules for the Prevention of Significant Deterioration (PSD) of Air Quality, requiring adherence to Best Available Control Technology (BACT) and compliance with the National Ambient Air Quality Standards.

Legal Ads IN THE Highlands Today

In the matter of Legal Notices

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the following Department offices:

was published in said newspaper in the issues of

Dept. of Environmental Protection
Bureau of Air Regulation
111 South Magnolia Drive, Suite 4
Tallahassee, Florida 32399-2400
Telephone: 850/414-7268 or 921-9537
Fax: 850/921-9533

07/04/2009

Dept. of Environmental Protection South
District Office - Air Program
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901-3881.
Telephone: 239/332-6975
Fax: 239/332-6969

Dept. of Environmental Protection
South District Office - Branch Office
2812 Kenilworth Boulevard
Sebring, Florida 33870
Telephone: 863/314-5975
Fax: 863/314-5979

Affiant further says that the said Highlands Today & The Tampa Tribune are newspapers published at Sebring in said Highlands County, Florida, and that the said newspapers have heretofore been continuously published in said Highlands County, Florida, each day and have been entered as second class mail matter at the post office in Sebring, in said Highlands County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.

Key portions of the application and additional information can be accessed at the Department's website at:
www.dep.state.fl.us/Air/permitting/construction/highlands.htm

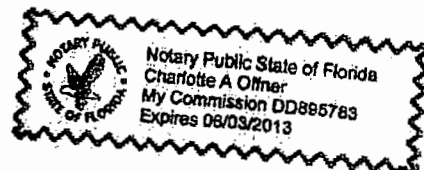
#6558

7/4/09

Sworn to and subscribed by me, this 4 day
of July, A.D. 2009

Personally Known or Produced Identification
Type of Identification Produced _____

Charlotte A. Ofler



Legal Announcements

Legal Notices

NOTICE OF APPLICATION
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL
PROTECTION
 DEP. File No. DEP File No. 0550061-001-AC
 (PSD-FL-406)
 Highlands Ethanol, LLC
 Cellulosic Ethanol Production Facility
 Highlands County

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Dept. of Environmental Protection
 Bureau of Air Regulation
 111 South Magnolia Drive, Suite 400
 Tallahassee, Florida 32399-2400
 Telephone: 850/414-7268 or 921-9537
 Fax: 850/921-9533

Dept. of Environmental Protection South
 District Office - Air Program
 2295 Victoria Avenue, Suite 364
 Fort Myers, Florida 33901-3681
 Telephone: 239/337-6975
 Fax: 239/337-6969

Dept. of Environmental Protection
 South District Office - Branch Office
 2812 Kenilworth Boulevard
 Sebring, Florida 33870
 Telephone: 863/314-5975
 Fax: 863/314-5979

Key portions of the application and additional information can be accessed at the Department's website at:
www.dep.state.fl.us/air/permitting/construction/highlands.htm

#6559

7/4/09