**STAFF SUMMARY**
**Method 2A Application Mid America Agri Products/Wheatland, LLC dba MABE, Madrid, Nebraska Plant, Corn Ethanol**
**(Pathway Codes: ETHC110 and ETHC111)**

Deemed Complete Date: August 31, 2015
Posted for Comment Date: November 05, 2015
Certified Date: November 16, 2015

## Plant Summary

Mid America Agri Products/Wheatland, LLC ("MABE") produces ethanol from corn at its dry mill facility located in Madrid, Nebraska. The plant currently produces about 45 million gallons of undenatured corn ethanol per year, and the applicant plans to sell about 19 million gallons of corn ethanol to California. The MABE plant produces wet distiller's grains with solubles (WDGS) as a co-product. The plant is not capable of producing modified or dried distiller's grains with solubles (MDGS, DDGS), as it lacks the drying capacity. The plant also produces corn oil as a livestock feed supplement, and the amount produced is small and considered negligible by the applicant.

The Applicant has applied for two pathways. The first pathway includes the Midwest, WDGS pathway, with the default lime use for corn feedstock, while the second includes the Midwest, WDGS pathway, with no lime use for corn feedstock. The carbon intensity (CI) values of both pathways reflect the plant's specific energy use for the period from November 2012 to October 2014. The GHG emissions associated with the electricity used at the plant are estimated using the Midwest grid electricity energy mix from CA-GREET 1.8b. Ethanol produced from the MABE plant will be shipped by rail to California.

## Carbon Intensity of Ethanol Produced

Proposed Method 2A pathways must be evaluated against reference pathways from the LCFS Lookup table. Although a Method 2A pathway must be very similar to its reference pathway, it must achieve at least a five gCO2e/MJ CI improvement over the reference pathway.[1] The reference pathway for the MABE's proposed Method 2A (with default agricultural applied lime use) is the Midwest dry mill, wet DGS, natural gas pathway (ETHC008) with a CI of 90.10 $gCO_2e/MJ$. The MABE pathway improves upon its reference pathway CI by more than the requisite five $gCO_2e/MJ$. There is no

[1] In the LCFS regulation, this 5 $gCO_2e/MJ$ threshold is referred to as the "substantiality requirement."

reference pathway for the no-lime use WDGS pathway. As shown in the table below, the applicant is applying for two pathway CIs.

The applicant is attesting that a portion of the corn they purchase is from farms that do not require the use of lime in their fields. In support, the applicant has provided confidential letters from the cooperative supplying corn to the plant and from agricultural extension educators stating that little or no lime is used in Perkins County, Nebraska to grow corn. The "sorghum belt soil acidity information CONFIDENTIAL 14Apr14" letter is also included with the application materials. This letter is part of the supporting package to provide information that there is little lime used in the sorghum producing areas in several states.

**Proposed Lookup Table Entries**

| Fuel | Pathway Identifier | Pathway Description | Carbon Intensity Values (gCO2e/MJ) | | |
|---|---|---|---|---|---|
| | | | Direct Emission | Land Use | Total |
| Ethanol from Corn | ETHC110 | 2A Application*: Default Lime Use, Midwest; Dry Mill; 100% Wet DGS; NG | 52.76 | 30 | 82.76 |
| Ethanol from Corn | ETHC111 | 2A Application*: No-Lime Use, Midwest; Dry Mill; 100% Wet DGS; NG | 48.68 | 30 | 78.68 |

* Specific Conditions Apply

## Operating Conditions

Operations at the plant will be subject to the following conditions designed to ensure that the CIs of the MABE pathways will remain at or below the values appearing in the table above. These conditions must be met for every gallon sold in California:

1. No conditions are placed on the amounts of electricity and natural gas consumed and the ethanol yield at MABE, as long as the CIs reported in the above table are not exceeded. For purposes of determining compliance with this operating condition, the plant's CI will be calculated based on data from the most recent 12 months of operation, excluding periods of abnormal operations, such as planned maintenance or unpredictable, unavoidable, and uncontrollable force

majeure events. The plant's thermal and electrical energy use and ethanol yield values are classified by the applicant as confidential business information.

2. As long as both pathway CIs (82.76 and 78.68 $gCO_2e/MJ$) are not exceeded, fuel pathway codes (FPCs) ETHC110 and ETHC111 may be used to report transactions involving volumes from the MABE plant.
3. The applicant attests that the corn purchased as feedstock from the surrounding area, within 50 miles trucking distance, shall be grown on fields that no lime ($CaCO_3$) has been applied. If corn is purchased outside of the local area, the applicant shall report to ARB that the ethanol was produced from corn with unknown origin that may have lime use and the applicant shall use ETHC110 to sell their ethanol in the CA market.

**Staff Analysis and Recommendations**

Staff has reviewed the MABE Method 2A application and finds the following:

• Staff has replicated, using the CA-GREET1.8b spreadsheet, the carbon intensity values calculated by the applicant;

• Staff has concluded that the plant's actual energy consumption is not likely to exceed the energy consumption level specified in the MABE's Method 2A application; and

• Staff has concluded that MABE is capable of operating the plant in a manner such that the ethanol yields are equal to or greater than the corresponding values specified in the MABE Method 2A application, and that compliance with the operating conditions above can be maintained.

Based on these findings, staff recommends that the MABE application for two Method 2A pathways be certified.