NOTICE OF INTENT TO GRANT A PERMIT AUTHORIZING THE USE OF WATER FOR COMMERCIAL PURPOSES (ETHANOL PRODUCTION) IN DICKINSON COUNTY, IOWA

Notice is hereby given that pursuant to Iowa Code Chapter 455B, there is now on file with the Iowa Department of Natural Resources, Water Supply Engineering Section, 6200 Park Avenue, Suite “200”, Des Moines, Iowa 50321 applications as described below.

Tod Smith on behalf of Green Plains Superior Ethanol (Iowa DNR Log No. 34,258) requests a permit authorizing withdrawal of water from two existing and one proposed Cretaceous Dakota Sandstone aquifer wells: 14 inches in diameter, about 575 feet deep, on land generally described as the SW ¼ of the SE ¼ of Section 34, T100N, R35W, Dickinson County, Iowa,, in the maximum quantity of 422.0 million gallons per year at a maximum rate of 960 gallons per minute, withdrawals being throughout each year for general industrial (ethanol production)-type use on the above-described property.

The only change to the existing permit is the addition of a new Cretaceous Dakota Sandstone well, as described above, for purposes of redundancy and operational flexibility.

The Department has determined that these uses of water conform to the relevant criteria (Iowa Code Chapter 455B and Iowa Administrative Code Chapter 567) and recommends the permits be granted. Copies of the summary reports for the applications are available upon a request to the Department at the address listed above. Comments on the reports and on these uses of water must be received by March 05, 2026, and should be addressed "ATTN.: Water Supply Engineering Section" and should specify the applicant's log number. (By Michael K. Anderson, P.E.)

IOWA DEPARTMENT OF NATURAL RESOURCES
WATER USE PERMIT SUMMARY REPORT

Applicant: Superior Ethanol, LLC (aka Green Plains Renewable Energy, Inc.)

Application Log No.: 34,258

Superior Ethanol LLC, (aka Green Plains Renewable Energy, Inc.), Iowa DNR Log Number 34,258, requests one newly modified water use permit authorizing withdrawals of water from two existing and one proposed Cretaceous Dakota Sandstone aquifer wells: 14 inches in diameter, about 575 feet deep, on land generally described as the SW ¼ of the SE ¼ of Section 34, T100N, R35W, Dickinson County, Iowa,, in the maximum quantity of 422.0 million gallons per year at a maximum rate of 960 gallons per minute, withdrawals being throughout each year for general industrial (ethanol production)-type use on the above-described property of the applicant.

This proposed well, aka Well #3 is being privately funded by Green Plains Superior, LLC as a redundant backup water source capable of producing -900 GPM. It adds to the operational flexibility of the plant.

1. The source of water and the land in question are located just north and west of the town of Superior in Superior Township in Dickinson County. The wells providing the source of water for the plant are situated in the Cretaceous Dakota Sandstone aquifer formation, each with 14-inch casing. The water in question is to be used for general plant service, and general cooling, and ethanol production uses. A proposed breakdown of water usage as provided by the applicant shows ~ 252.5 gallons per minute (gpm) for cooling tower evaporation, 126.3 gpm for cooling tower blowdown, 1999.9 gpm for reverse osmosis reject water, 131.0 gpm for ethanol process and boiler water, and 20.8 gpm for filter backwash and water softener sludge. Iowa DNR anticipates no substantial impacts on water availability in the aquifer as a result of the Applicant's proposed withdrawal, pursuant to the test pumping as described below and its analysis.

2. A 14-inch diameter test well (aka "Production Well No. 1") was drilled in November of 2007. Its approximate location is given as the SE ¼ of Section 34 north of State of Iowa highway #9. The driller was Layne Christensen Well Drilling Company (Kansas City, Kansas). A well log of this test well was submitted to the Department. The well is screened from 495 feet to 575 feet below the ground surface. One existing test well was used as an observation well to monitor changes in the potentiometric surface during the aquifer test. This existing 6-inch test well was located onsite, about 45 feet from the Production well itself.

3. The newly drilled well was test pumped from December 7-8, 2007. Changes in the potentiometric surface were monitored at the pumping well and at the observation well. The constant rate test was performed at 394 gpm. The test gave a good representation of the aquifer locally and potential effects on nearby users. Calculated site-specific aquifer parameters were used to develop an estimate of the long-term pumping level, using the Cooper-Jacob non-equilibrium analysis. Hydrogeologic calculations are available with the file; they are not repeated herein for reasons of brevity. Transmissivity is about 6350 square feet per day, for a 200-foot-thick aquifer. The storage coefficient of the aquifer at this location is 0.0002 (dimensionless), which is typical for a leaky confined aquifer like this one. The Cooper-Jacob analysis indicates that there is sufficient capacity to support one well pumping at 960 gpm or two wells pumping at 500 gpm, with no interference on neighboring users.

4. Observation wells do not appear to be significantly impacted by the Superior test well. Based on the high pumping rate and the relatively low drawdown, the test pumping ended at the standard 24-hour period. Based on the December pump test, there appears to be sufficient water for the proposed Superior usage.

5. The nearest neighbor who holds a water allocation permit is a Hallett Materials Sand and Gravel pit near Estherville, about 5.5 miles southeast. No problems were observed from the test pump, as expected due to the lack of proximity of the quarry to the ethanol plant site. In any case, this type of topography, characterized by significantly productive sands and gravel's, wherein the neighboring user is located at a distance from the

Applicant, precludes the possibility of adverse impacts upon the Hallett water allocation resulting from the Applicant's proposed use of water.

6. The next nearest withdrawal site, wherein withdrawals are sufficient to require a water use permit, is a similar City of Estherville well operation, Water Use Permit # 6104). This operation is located approximately 6.0 miles south and east of the Applicant's withdrawal site. The Department anticipates no impacts upon the City of Estherville's municipal production operation resulting from the Applicant's proposed use of water for the same reasons as stated above, as well as the fact that Estherville utilizes Cambrian Jordan Sandstone wells which are a different and deeper aquifer formation.

7. A comprehensive well survey was submitted by the applicant at the end of February (refer to the document contained within the file -> "an inventory of water wells within 2 miles of the facility production wells in support of the water use permit application". The document is not repeated herein for reasons of brevity, but meets the requirements contained at subrule 567-52.4 "a" (455B) of the Iowa Administrative Code (IAC) for applicants who wish to utilize new Dakota Sandstone wells. Based upon this document and upon the amount of maximum annual water allowance and pumping rate as requested by this permittee and the plenitude of water associated with the Dakota formation in this area, it is unlikely that any private domestic or agricultural wells associated with the near vicinity of the applicant will be adversely affected by the proposed increase in withdrawals. In any event, the interests of individuals using water for domestic purposes, as well as those persons benefiting from the permits mentioned above, are amply protected, in the event of substantial injury, pursuant to Section 455B.271, Code of Iowa.

8. Any permit issued pursuant to this application should not be construed as an authorization to discharge water into the West Fork Des Moines River or to any other waters or lands. An NPDES Permit authorizing such discharges must first be obtained from the Department. Summary details of the NPDES permit application are contained within the file, and not repeated herein for reasons of brevity.

9. The applicant is able to devote a reasonable amount of water to a beneficial use (commercial production of ethanol). Production of ethanol is conducive to the growth and resiliency of Iowa's economy. There is no evidence that the use of water pursuant to a permit granted in accordance with the conclusions contained herein will constitute a waste of the water resources of the State, will be incompatible with the state comprehensive plan for water resources, will impair the effect of pollution control laws of this State or the navigability of and navigable watercourse, or will be detrimental to the public interest or to the interests of property owners with prior or superior rights who might be affected.

THEREFORE:

The requested use of water conforms to the relevant criteria in Division III, Part 4, Chapter 455B, Code of Iowa and Chapter 52 of Part 567, Iowa Administrative Code. No adverse effect upon other water users is foreseen at this time. Following publication of notice and subject to revisions in response to comments that may be submitted, the attached draft permit should be issued for a period of ten years.

Water Supply Engineering Section _____

January 27, 2026

IOWA DEPARTMENT OF NATURAL RESOURCES

WATER USE PERMIT

Permit issued to:	**Permit Number:**	9325-M2
GREEN PLAINS SUPERIOR LLC EHSS MANAGER PO BOX 138 SUPERIOR IA 51363-0138	**Effective:** **Expires:**	xxx xxx

The permittee is authorized to:

withdraw water from two existing and one proposed Cretaceous Dakota Sandstone aquifer wells: 14 inches in diameter, about 575 feet deep, on land generally described as the SW ¼ of the SE ¼ of Section 34, T100N, R35W, Dickinson County, Iowa,, in the maximum quantity of 422.0 million gallons per year at a maximum rate of 960 gallons per minute, withdrawals being throughout each year for general industrial (ethanol production)-type use on the above-described property.

This authorization to withdraw water has been granted pursuant to the provisions of Part 4 of Division III of Chapter 455B, Code of Iowa, and Chapter 50 of Part 567, Iowa Administrative Code, and is further subject to the general permit conditions within this permit.

Conditions of this permit may be appealed as provided in rule 567--50.9, Iowa Administrative Code. Appeal must be in writing and must be received at the Iowa Department of Natural Resources, Water Supply Engineering Section, 6200 Park Avenue, Suite “200” Des Moines, IA 50321, within thirty days of the date of the certification of the mailing of the permit.

FOR THE DIRECTOR:

By: _____ Date Executed: _____

(mka)

cc: Field Office No. 3 – Spencer
File CON 3-9, Permit No. 9325

CERTIFICATE OF MAILING

On the date shown below, a copy of the foregoing permit was mailed to the Permittee and to each person entitled to receive a copy as provided by rule 567--50.8(2), Iowa Administrative Code.

Certified by (initials): Date:

GENERAL PERMIT CONDITIONS

1. Permittee shall maintain accurate and up-to-date records of water use from said sources and submit them annually to the department. Additional records on pumping rates from said sources and other data related to the regulation of this use of water shall be maintained and submitted as directed by the department.

2. Permittee shall be responsible for securing such other permits or approvals as may be required by this department, federal, or local governmental agencies for the operation of said quarry or the discharge of water or other materials due to this operation.

3. Permittee is responsible for compliance with all applicable provisions of State law and the rules and regulations of this department and of federal and local health and water pollution control agencies in the operation of the aquifer remediation process, and in the disposal of its wastes.

4. Water withdrawn pursuant to this permit shall be discharged into the (West Fork) Des Moines River and shall be so discharged as to prevent flooding erosion, or other adverse effects and shall be of suitable quality.

5. Permittee shall construct, maintain, and monitor observation wells, as directed by the department, to define the effects of permittee's water withdrawals on groundwater resources or on other water users who might be affected by the withdrawals authorized herein.

6. Once each spring prior to March 31, the permittee shall be responsible for accurately measuring the distance(s) to water (static water level) from the access port in all permitted wells. The distance to water shall be submitted to the department annually as part of the records of water use.

7. Existing wells shall not be replaced without notifying the Iowa Department of Natural Resources. Changes to the location, depth, source aquifer, or other physical features of said wells may require that this permit be modified to accommodate the changes.

8. With respect to each proposed or replacement well authorized as a source of water in this permit, withdrawals of water may be made only after the permittee has made the following information available to the Iowa Geological Survey: well location, well log, casing and grouting schedule, results of yield tests, and cutting samples.

9. Permittee shall submit to the department within 90 days of being notified by the department, or no later than the expiration date of this permit, whichever first occurs, a plan for implementing routine day-to-day water conservation measures and for implementing emergency water conservation measures during periods of water shortage. Until such a plan has been submitted to and approved by the department, permittee shall implement those emergency water conservation measures determined to be necessary by the department pursuant to Iowa Code Sections 455B.265 and 455B.266.

10. This permit supersedes Water Use Permit No. 9325-R1.

CAVEAT

Permittee is advised that pursuant to Section 455B.271, Code of Iowa, the authority to withdraw water provided by this permit may be modified, canceled or suspended in case of any breach of the terms or conditions herein, in case of any violation of state law pertaining to the permit, or if found necessary to prevent substantial injury to private or public interests.

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