



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

OCT 24 2019

Ms. Mirriah Cooper
Health, Safety & Environmental Supervisor
Archer Daniels Midland Processing - Deerfield
17700 South Highway T
Deerfield, MO 64741

RE: New Source Review Permit Amendment - Permit Number: 122017-013B
Project Number: 2019-08-045; Installation Number: 217-0043

Dear Ms. Cooper:

On August 16, 2019, the Missouri Air Pollution Control Program received your request to amend Permit No. 122017-013A to change the compliance methods used by the continuous temperature and water flow rate monitoring systems from one-hour average values to three-hour block average values. Enclosed with this letter is your amendment.

Archer Daniels Midland Company (ADM) owns and operates an installation near Deerfield (S98, T35N, R33W) that includes a soybean vegetable oil extraction plant and a biodiesel manufacturing plant. In May, 2019, Permit No. 122017-013A was issued to the installation to include hexane emissions that were not included during the initial review for Permit No. 122017-013. Special Conditions 2.A.7) and 2.B.6) allows the installation to use one-hour average values from the continuous temperature and water flow rate monitoring systems to show compliance with the temperature and water flow rate requirements for the water absorber and the biodiesel scrubber. Your installation has requested that this one hour average be changed to a three-hour block average, which is consistent with permits issued to ADM's Mexico facility. Your request is approved since the change in averaging times is not expected to adversely affect the control achieved by the control devices.

The special conditions of this amendment replace all of the Special Conditions in Permit No. 122017-013A. Although only Special Conditions 2.A.7) and 2.B.6) are affected by this project, all of the other special conditions in Permit No. 122017-013A are restated in this amendment so the installation does not have to refer to two separate documents for compliance.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the Administrative Hearing Commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the Administrative Hearing Commission within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will



Recycled paper

Ms. Mirriah Cooper
Page Two

be deemed filed on the date it is received by the Administrative Hearing Commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, MO 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.ao.mo.gov/ahc.

If you have any questions regarding this amendment, please do not hesitate to contact Chia-Wei Young at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Kendall B. Hale
Permits Section Chief

KBH:cyd

Enclosures

c: Southwest Regional Office
PAMS File: 2018-12-029

Page No.	3
Permit No.	122017-013B
Project No.	2019-08-045

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Archer Daniels Midland Processing - Deerfield
Vernon County, S9, T35N, R33W

1. Superseding Condition
The special conditions of this permit supersede all special conditions in Permit No. 122017-013A and Special Conditions No. 4.A. and No. 5.G.1) in Permit No. 122017-013.
2. Control/Recovery Device Requirements
 - A. Water Absorber
 - 1) ADM Deerfield shall recover VOC emissions from biodiesel methanol stripping and condensation, glycerin methanol stripping and condensation, and methanol rectification and condensation, and the biodiesel reaction and separation process using a water absorber.
 - 2) ADM Deerfield shall develop a site-specific operation and maintenance (O&M) procedure for the water absorber in a manner consistent with safety and good air pollution control practices for minimizing emissions. The O&M procedure shall indicate:
 - a) The maximum methanol concentration in the recirculating water, which shall be set as 110% of the average methanol concentration observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d).
 - b) The maximum absorber inlet water temperature, which shall be set as 110% of the average absorber inlet water temperature observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d).
 - c) The minimum recirculating water flow rate, which shall be set as 90% of the average recirculating water flow rate observed during the most recent measurement used to determine the

Page No.	4
Permit No.	122017-013B
Project No.	2019-08-045

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

most recent TRE index according to §63.115(d).

- 3) The water absorber shall be operated and maintained in accordance with the site-specific O&M procedure. The water absorber shall be equipped with gauges or meters that indicate the absorber inlet water temperature and the recirculating water flow rate through the recovery device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
- 4) ADM Deerfield shall determine the methanol concentration in the water absorber from representative samples analyzed by an appropriate analytical method following a standard procedure, including appropriate QA/QC provisions.
 - a) The installation is required to obtain a sample at least once every 24 hours when the process is in operation. The installation may take more than one sample, but cannot exceed four total samples for each 24-hour period. If more than one sample is taken, the average of the samples during each 24-hour period shall be used for compliance with Special Condition 2.A.2)a).
 - b) A methanol concentration (or an average if multiple samples are taken during each 24-hour period) in the recirculating water, determined in the same manner as, and greater than 110% of the methanol concentration observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d) is considered a deviation, excluding periods of start-up, shutdown, and malfunction.
 - c) ADM Deerfield shall retain records of all methanol concentration analytical results.
- 5) ADM Deerfield shall monitor and record the absorber inlet water temperature at least once every 24 hours when the process is in operation. The installation may take more than one reading, but cannot exceed four total readings for each 24-hour period. If more than one reading is taken, the average temperature from all of the samples shall be used for compliance with Special Condition 2.A.2.b).

Page No.	5
Permit No.	122017-013B
Project No.	2019-08-045

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- a) An absorber inlet water temperature (or an average if multiple samples are taken during each 24-hour period) determined in the same manner as, and greater than 110% of the average absorber inlet water temperature observed during the most recent TRE index according to §63.115(d) is considered a deviation, excluding periods of start-up, shutdown, and malfunction.
- 6) ADM Deerfield shall monitor and record the recirculating water flow rate through the water absorber at least once every 24 hours when the process is in operation. The installation may take more than one reading, but cannot exceed four total readings for each 24-hour period. If more than one reading is taken, the average temperature from all of the samples shall be used for compliance with Special Condition 2.A.2.c).
 - a) A recirculating water flow rate (or an average if multiple samples are taken during each 24-hour period), determined in the same manner as, and less than 90% of the hourly average recirculating water flow rate observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d) is considered a deviation, excluding periods of start-up, shutdown, and malfunction.
- 7) In lieu of the absorber inlet water temperature and recirculating water flow rate monitoring requirements in Special Conditions 2.A.5) and 2.A.6), ADM Deerfield may also use continuous temperature and water flow rate monitoring systems to determine three-hour block average values for compliance with Special Conditions 2.A.2)b) and 2.A.2)c).
- 8) ADM Deerfield shall maintain onsite a copy of the water absorber's site-specific O&M procedure indicating the absorber inlet water temperature and recirculating water flow rate normal operating ranges.
- 9) ADM Deerfield shall maintain an operating and maintenance log for the water absorber which shall include the following:
 - a) Incidents of malfunction, with impact on emissions (tons), duration of even, probable cause, and corrective actions;

Page No.	6
Permit No.	122017-013B
Project No.	2019-08-045

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

- B. Biodiesel Absorber
 - 1) ADM Deerfield shall install a biodiesel absorber downstream of the water absorber to recover VOC emissions coming from the water absorber.

 - 2) ADM Deerfield shall develop a site-specific operation and maintenance (O&M) procedure for the biodiesel absorber in a manner consistent with safety and good air pollution control practice for minimizing emissions. The O&M procedure shall indicate:
 - a) The maximum average inlet biodiesel scrubbant temperature which shall be set at 110% of the hourly average inlet biodiesel scrubbant temperature observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d).
 - b) The minimum average biodiesel scrubbant flow rate which shall be set as 90% of the average biodiesel scrubbant flow rate observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d).

 - 3) The biodiesel absorber shall be operated and maintained in accordance with the site-specific O&M procedure. The biodiesel absorber shall be equipped with gauges or meters that indicate the inlet biodiesel scrubbant temperature and flow rate through the recovery device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.

 - 4) ADM Deerfield shall monitor and record the inlet biodiesel scrubbant temperature at least once every 24 hours. The installation may take more than one reading, but cannot exceed four total readings for each 24-hour period. If more than one reading is taken, the average temperature from all of the samples shall be used for compliance with Special Condition 2.B.2.a).

Page No.	7
Permit No.	122017-013B
Project No.	2019-08-045

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- a) An inlet biodiesel scrubbant temperature (or an average biodiesel scrubbant temperature if more than one reading is taken during each 24-hour period), determined in the same manner as, and greater than 110% of the average inlet biodiesel scrubbant temperature observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d) is considered a deviation, excluding periods of start-up, shutdown, and malfunction.
- 5) ADM Deerfield shall monitor and record the biodiesel scrubbant flow rate through the biodiesel absorber at least once every 24 hours when the process is in operation. The installation may take more than one reading, but cannot exceed four total readings for each 24-hour period. If more than one reading is taken, the average temperature from all of the samples shall be used for compliance with Special Condition 2.B.2.b).
 - a) An inlet biodiesel scrubbant flow rate (or an average biodiesel scrubbant flow rate if more than one reading is taken during each 24-hour period), determined in the same manner as, and less than 90% of the average inlet biodiesel scrubbant flow rate observed during the most recent measurements used to determine the most recent TRE index according to §63.115(d) is considered a deviation, excluding periods of start-up, shutdown, and malfunction.
- 6) In lieu of the inlet biodiesel scrubbant temperature and the biodiesel scrubbant flow rate monitoring and recording requirements in Special Conditions 2.B.4) and 2.B.5), ADM Deerfield may use continuous temperature and flowrate monitoring systems and use the three-hour block average values to show compliance with Special Conditions 2.B.2)a) and 2.B.2)b).
- 7) ADM Deerfield shall maintain onsite a copy of the biodiesel absorber's site-specific O&M procedure indicating the inlet biodiesel scrubbant temperature and flow rate normal operating ranges.

Page No.	8
Permit No.	122017-013B
Project No.	2019-08-045

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- 8) ADM Deerfield shall maintain an operating and maintenance log for the biodiesel absorber which shall include the following:
 - a) Incidents of malfunction with impact on emissions (tons), duration of event, probable cause, and corrective actions; and
 - b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

3. Performance Testing.
 - A. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.
 - 1) During testing required by Special Condition 5.A. of Permit No. 122017-013, ADM Deerfield shall document:
 - a) The biodiesel production rate during each performance test run.
 - b) The water absorber inlet water temperature during each measurement.
 - c) The recirculating water flow rate through the water absorber during each measurement.
 - d) The methanol concentration of the water absorber recirculating water during each measurement.
 - e) The biodiesel absorber inlet biodiesel scrubbant temperature during each measurement.
 - f) The biodiesel scrubbant flow rate through the biodiesel absorber during each measurement.