

**IOWA DEPARTMENT OF NATURAL RESOURCES  
ADMINISTRATIVE CONSENT ORDER**

IN THE MATTER OF:  ARCHER-DANIELS-MIDLAND COMPANY	ADMINISTRATIVE CONSENT ORDER  NO. 2023-AQ-14
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To: Archer-Daniels-Midland Company  
Des Moines Soybean Plant  
Mike Kuntz, Plant Manager  
1935 East Euclid Avenue  
Des Moines, Iowa 50313

**I. SUMMARY**

This administrative consent order is entered into between the Iowa Department of Natural Resources (DNR) and Archer-Daniels-Midland Company (ADM) for the purpose of resolving alleged air quality violations. In the interest of avoiding litigation, the parties have agreed to enter into this administrative consent order as further described in the provisions below. ADM does not admit or deny the statement of facts and conclusions of law stated herein.

Any questions regarding this administrative consent order should be directed to:

**Relating to technical requirements:**

Brian Hutchins  
Iowa Department of Natural Resources  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319-0034  
Phone: 515-725-9550

**Relating to legal requirements:**

Anne Preziosi, Attorney for the DNR  
Iowa Department of Natural Resources  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319-0034  
Phone: 515-238-3429

**Payment of penalty to:**

Director of the Iowa DNR  
Wallace State Office Building  
502 East Ninth Street  
Des Moines, Iowa 50319-0034

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**II. JURISDICTION**

This administrative consent order is issued pursuant to the provisions of Iowa Code sections 455B.134(9) and 455B.138(1), which authorize the Director to issue any order necessary to secure compliance with or prevent a violation of Iowa Code chapter 455B, Division II (air quality), and the rules promulgated or permits issued pursuant to that part; and Iowa Code section 455B.109 and 567 Iowa Administrative Code (IAC) chapter 10, which authorize the Director to assess administrative penalties.

**III. STATEMENT OF FACTS**

1. ADM owns and operates an oilseed processing plant in Des Moines known as the ADM Des Moines, Iowa, Soybean Plant. It is located at 1935 East Euclid Avenue. This facility processes soybeans to produce soybean meal and refined vegetable oil as its primary products. The facility also maintains a coal-fired cogeneration facility for the production of process steam and electricity. As part of the process, the facility uses and emits hexane, which is a Volatile Organic Compound (VOC) and a constituent of hexane, n-hexane, which is a Hazardous Air Pollutant (HAP).

2. The DNR received a Prevention of Significant Deterioration (PSD) application from ADM on March 2, 2015. This application was a request to make modifications to the Des Moines facility in order to increase the soybean processing capacity to 180,000 bushels per day (on a rolling twelve-month average basis). The application was assigned Project Number 15-079.

3. The list of modifications included changes to the Mineral Oil Absorption System which vents to the outside atmosphere through emission point (EP) GP09A. Volatile organic compounds (VOC) are emitted from EP GP09A. Three emission units (EU) are included in the Mineral Oil Absorption System. Those units are the Extractor (EU GP09), Hexane Tanks (EU GP014) and the Desolventizer Toaster Dryer Cooler (DTDC; EU MP01).

4. ADM was issued Construction Permit No. 07-A-1078-P1 on September 22, 2015, for EP GP09A. This permit is a PSD permit that includes Best Available Control Technology (BACT) limits for VOC emissions. One of the VOC BACT limits from Condition 10a of the permit is 0.140 gal/ton of soybeans processed. This emission limit is a limit of the number of gallons of VOC lost per ton of soybeans processed, based on a twelve-month rolling average. It does not include periods of startup, shutdown, and malfunction (SSM). Another VOC BACT limit from Condition 10a of the permit is 788 tons/year of VOC emitted (including periods of SSM), based on a twelve-month rolling average.

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5. ADM has failed to comply with the limits of DNR Air Quality Construction Permit No. 07-A-1078-P1, as required. ADM's emissions, based on a twelve-month rolling average, exceeded the 0.140 gal/ton of VOCs in October 2018, November 2018, January 2019, and June 2019 thru April 2023.

6. ADM has failed to comply with the limits of DNR Air Quality Construction Permit No. 07-A-1078-P1, as required. ADM's emissions, based on a twelve-month rolling average, exceeded 788 tons/year of VOCs at various times beginning December 2019 and ending July 2021.

7. ADM reported the VOC gal/ton and ton/year emission limits exceedances in monthly excess emission reports. ADM has submitted excess emission reports to the DNR at various times beginning in November 2018.

8. On April 5, 2019, Polk County sent a request to ADM for more information. Polk County requested information regarding whether any of the excess emissions could meet the definition of "malfunction" contained in 567 IAC 20.2. ADM responded in an April 18, 2019, letter, stating that malfunctions had already been excluded from the calculations and that ADM had no additional malfunctions to report.

9. On May 14, 2019, ADM, Polk County, and DNR participated in a conference call to discuss ADM's response to the Polk County request for information. ADM stated the excess hexane emissions were caused, in part, by a lack of residence time in the Desolventizer Toaster Dryer Cooler (DTDC), which was not expanded as part of the production expansion. ADM also stated that it plans to submit a permit application requesting to increase the VOC BACT emission limit contained in Construction Permit No. 07-A-1078-P1.

10. On July 12, 2019, ADM submitted a PSD pre-application to DNR. On August 12, 2019, DNR, Polk County, and ADM held a PSD pre-application meeting. ADM submitted a construction permit application dated October 4, 2019, requesting to increase the VOC BACT emission limit contained in Construction Permit No. 07-A-1078-P1. The application was assigned Project Number 19-343.

11. On June 4, 2021, ADM submitted a compliance plan informing DNR that ADM would submit a new construction permit application to replace the Desolventizer Toaster (DT) section of the existing DTDC. According to ADM, this project will improve the recovery of hexane from soybean meal, which is attributed to 85% of the plant's overall hexane losses. ADM termed these proposed changes as the DTDC Replacement and Upgrade Project (DRUP).

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12. On October 4, 2022, ADM submitted the construction permit application for the DRUP. This application will replace Project Number 19-343. This DRUP application was assigned Project Number 22-355. It was sent back to ADM on November 21, 2022, to allow ADM to make updates to the application. ADM resubmitted the application on November 29, 2022.

13. Polk County issued a Demand for Payment (\$7,500.00) on November 22, 2016, for alleged failure to perform weekly VE checks from March 11, 2016, to May 13, 2016. ADM paid this penalty. Also, on June 8, 2015, Polk County issued a Demand for Payment (\$6,500.00) for allegedly failing to perform semi-annual Beryllium analysis for 1<sup>st</sup> half of 2014; failing to perform VE checks on EP GP06A from April 23, 2014, to October 24, 2014; and failing to record pressure drops on EP U03 from April 23, 2014, to October 24, 2014. ADM paid this penalty.

#### **IV. CONCLUSIONS OF LAW**

1. Iowa Code section 455B.133 provides that the Environmental Protection Commission (Commission) shall establish rules governing the quality of air and emission standards. The Commission has adopted 567 IAC chapters 20-35 relating to air quality.

2. Iowa Code section 455B.134(3) provides that the Director of DNR shall grant, modify, suspend, terminate, revoke, reissue or deny permits for the construction or operation of new, modified, or existing air contaminant sources and for related control equipment.

3. 567 IAC 22.3(3) states that a permit may be issued subject to conditions which shall be specified in writing. Such conditions may include but are not limited to emission limits, operating conditions, fuel specifications, compliance testing, continuous monitoring, and excess emission reporting. As stated above, ADM has failed to comply with the VOC BACT emission limits contained in Condition 10a of Construction Permit No. 07-A-1078-P1.

#### **V. ORDER**

THEREFORE, DNR orders and ADM agrees to the following:

1. To resolve the violations referenced in Sections III and IV, upon issuance of this administrative consent order, ADM shall initiate construction and comply with the Compliance Schedule as outlined in Appendix A of this administrative consent order; and

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2. From the date this administrative consent order is signed by the director until completion of the items included in item #1, ADM shall comply with the Emissions Minimization Plan included in Appendix B of this administrative consent order; and
3. ADM shall comply with all construction permits required by Appendix A once issued, including completion of any changes required to conform with issued construction permits and achieve compliance; and shall comply with all applicable state and federal air quality requirements related to the equipment addressed in Appendix A; and
4. ADM shall submit to DNR written quarterly progress reports regarding its efforts to comply with the requirements of this administrative consent order, with the first quarterly report due by June 30, 2023, until ADM demonstrates compliance with the 0.140 gal/ton VOC emission limit based on a twelve-month rolling average; and
5. Within 90 days of the date this administrative consent order is signed by the director, ADM shall submit amended Emission Inventories for the years of 2017-2022 to correct for emissions calculation errors. The facility shall submit fees for any unreported emissions; and
6. Within 60 days of construction permit issuance for all items included in Appendix A, ADM shall submit a supplemental Title V permit application to account for all changes at the facility; and
7. ADM shall request a withdrawal of Project Number 19-343 within 30 days of the date the director signs this administrative consent order. In addition, within 30 days of the director signing this administrative consent order, ADM shall provide permit applications and related information to the Air Quality Division of the Polk County Public Works and simultaneously supply the permit applications and related information to DNR; and
8. The parties agree that an amended Compliance Schedule may be submitted for DNR approval prior to the December 31, 2024, Compliance Plan final action item deadline passing. With any proposal for an amended Compliance Plan Schedule, ADM shall provide evidence (e.g., building permit delay or supply chain issues) that can be demonstrated by purchase orders, proposals, email exchanges, or other information requested by DNR; and

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9. Within 30 days of the date this administrative consent order is signed by the director, ADM shall pay a penalty of \$10,000.00.

**VI. PENALTY**

Pursuant to the provisions of Iowa Code section 455B.109 and 567 IAC chapter 10, which authorize the Director to assess administrative penalties, a penalty of \$10,000.00 is assessed by this administrative consent order. The penalty must be paid within 30 days of the date this administrative consent order is signed by the Director. The administrative penalty is determined as follows:

Iowa Code section 455B.146 authorizes the assessment of civil penalties of up to \$10,000.00 per day of violation for the air quality violations involved in this matter. More serious criminal sanctions are also available pursuant to Iowa Code section 455B.146A.

Iowa Code section 455B.109 authorizes the Commission to establish by rule a schedule of civil penalties up to \$10,000.00 that may be assessed administratively. The Commission has adopted this schedule with procedures and criteria for assessment of penalties through 567 IAC chapter 10. Pursuant to this rule, DNR has determined that the most effective and efficient means of addressing the above-cited violations is the issuance of an administrative consent order with a penalty. The administrative penalty assessed by this administrative consent order is determined as follows:

Economic Benefit –567 IAC Chapter 10 requires that the DNR consider the costs saved or likely to be saved by noncompliance. 567 IAC 10.2(1) states that “where the violator received an economic benefit through the violation or by not taking timely compliance or corrective measures, the department shall take enforcement action which includes penalties which at least offset the economic benefit.” 567 IAC 10.2(1) further states, “reasonable estimates of economic benefit should be made where clear data are not available.” ADM has gained an economic benefit by continuing to produce product while exceeding the VOC emission limit. ADM stated that the excess emissions may be from lack of residence time in the Desolventizer Toaster Dryer Cooler (EU MP01). The Desolventizer Toaster Dryer Cooler was not updated as part of the production increase project that included the issuance of Construction Permit No. 07-A-1078-P1.

For these reasons, \$4,000.00 is assessed for economic benefit

Gravity of the Violation – One of the factors to be considered in determining the gravity of a violation is the amount of penalty authorized by the Iowa Code for that type of violation. As indicated above, substantial civil penalties are authorized

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by statute. Despite the high penalties authorized, the DNR has decided to handle the violations administratively at this time, as the most equitable and efficient means of resolving the matter. By failing to comply with the PSD construction permit VOC BACT limit, ADM has caused excess emissions. The VOC being emitted is hexane that is used in the oil extraction process. The EPA classifies hexane as a HAP.

ADM's failure to comply in a timely manner has forced the DNR and Polk County to spend additional time and resources in an effort to assist the facility in attempting to comply. Thus, this violation threatens the integrity of the DNR's air quality program.

For these reasons \$3,000.00 is assessed for this factor.

Culpability – ADM has been out of compliance with the cited emission limits during the times described in Section III, paragraphs 5, 6 and 7 since October 2018. Although ADM has attempted to identify operational problems with meeting the permitted limit, it continues to exceed the emission limit.

For this reason, \$3,000.00 is assessed for culpability.

**VII. WAIVER OF APPEAL RIGHTS**

This administrative consent order is entered into knowingly and with the consent of ADM. For that reason, ADM waives its right to appeal this administrative consent order or any part thereof.

**VIII. NONCOMPLIANCE**

Failure to comply with this administrative consent order, including failure to timely pay any penalty, may result in the imposition of further administrative penalties or referral to the attorney general to obtain injunctive relief and civil penalties pursuant to Iowa Code section 455B.146. Compliance with Section "V. Order" of this administrative consent order constitutes full satisfaction of all

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requirements pertaining to the specific violations described in Section "IV. Conclusions of Law" of this administrative consent order.

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Kayla Lyon, Director  
Iowa Department of Natural Resources

  
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Archer-Daniels-Midland Company

Dated this 24<sup>th</sup> day of  
May, 2023.

DNR Field Office 5; Polk County Air Program; Anne Preziosi



Appendix A: ADM Des Moines – Compliance Plan and Schedule

Equipment Changes*	Emission Unit	Current Status	Required Changes	Completion Date
Coal boiler and material handling permanent shutdown	C01-C05	Coal boiler & material handling equipment	Cease Operation	6/30/2023 contingent on gas boiler start of construction.
Haul Roads Silt Level Limit Reduction	U08	10.0 g/m2	Request revised limit of 1.0 g/m2	Revised limit request included in DTDC application submitted on 11/23/2022. Limit already met in practice.
Extraction Cooling Tower	GP019_1-4	3,000 ppmw TDS	Request revised limit of 1,500 ppmw TDS & replace drift eliminators for four cells	Revised TDS limit request and new drift eliminator modification included in DTDC application submitted on 11/23/2022. TDS limit already met in practice.  Total of four individual cells require replacement with new drift eliminators. 1-cell will be replaced by 12/31/2023 and 3 -cells by 12/31/2024.
Flakers	GP06A	Cyclone	Baghouse	New baghouse and request for stack modifications included in DTDC application submitted on 11/23/2022. Installation will be completed 06/30/2024. Baghouse lead time is 10 months. Baghouse was ordered on 04/06/2023.
DTDC Project	MP01	4 Cyclones	6 cyclones	This project requires building permits. Based on current estimates the installation will be completed by 10/31/2024.
Conveying to Process	GP04A	22'	80'	These stacks will all require building permits and additional structure to extend the height. Based on current estimates the installation will be completed by 10/31/2024.
Secondary Aspiration	HR01A	85'	110'	
Pellet Cooler	HR03	70'	120'	
DTDC	MP01	75'	120' & relocate	
Meal Grinding	MP02A	60'	120'	

<b>Equipment Changes*</b>	<b>Emission Unit</b>	<b>Current Status</b>	<b>Required Changes</b>	<b>Completion Date</b>
<b>Meal Rail Loadout</b>	MP07A	40'	90'	
<b>Conveyor to Extractor</b>	GP07	65.5'	95'	10/31/2023 – requires plant shutdown.
<b>Emergency Fire Pump</b>	GP018	8'	20' - Vertical	10/31/2023
<b>Emergency Fire Pump</b>	R08	8'	20' - Vertical	
<b>Standby Boiler (Murray)</b>	C09	Fuel Oil backup	Remove fuel oil supply train	12/1/2023 – Decommission fuel oil system. 6/1/2023 – Submit Construction Permit applications to IDNR for the two emission points.

\*The Construction Permit for Emergency Generator C012 is required to be modified to correctly represent the current operating status of the stack as unobstructed.

## **ATTACHMENT B: Emissions Minimization Plan**

- (1) Until such time that the DTDC Project is fully operational, ADM shall do the following to minimize VOC emissions from the Oilseed Extraction Process:
  - a. Complete monthly sampling and testing of hexane content in representative samples of the meal, oil and wastewater. Results shall be compared to the prior 12-month average. For samples that vary by more than two standard deviations, ADM shall conduct a review as to the cause of variation and take actions as appropriate. These actions shall include, but are not limited to:
    - i. If excess hexane is found in the meal, as appropriate, ADM should adjust the sparge steam, check the deck levels to verify the proper level, and potentially adjust production levels.
    - ii. If excess hexane is found in the oil, as appropriate, ADM should check the temperature, pressure and vacuums of the distillation system, adjust the sparge steam, and check heat exchangers for leaks.
    - iii. If excess hexane is found in the wastewater, as appropriate, ADM should adjust the temperature on the separation tank and the wastewater evaporator, and check the heat exchanger for any leaks.
  - b. For the mineral oil heat exchanger system:
    - i. Continuously monitor temperature on the cold mineral oil, except during periods of monitor malfunctions.
    - ii. If the temperature exceeds 100° F for more than 24 consecutive hours, the heat exchanger(s) shall be scheduled for cleaning during the next planned, short shutdown (1/2 – 1 day).
  - c. Maintain one of three weirs closed to improve hexane drainage from the extractor to the DT. The increase in drainage from the extractor helps reduce the amount of hexane entering the DT, meaning that there is less to remove through desolventizing the meal. The closed weir shall remain locked and verified monthly that it remains closed. Records of the monthly verification shall be maintained.
  - d. Operate with a level setpoint of at least 50% of the #1 (the top) Hollow Staybolt Deck of the DT to maximize residence time during normal operations. The process controls system shall be modified to automatically reset the level setpoint to at least 50% if level changes are detected.

- e. For any individual month when solvent loss exceeds 22,995 gallons of hexane, ADM shall:
  - i. Conduct leak detection monitoring of the extraction process area through use of a FLIR camera within 45-days from the end of that month. Camera indicated leaks (e.g., visible FLIR plume) shall have first attempt at repair within 15 days. A reading of <10,000 ppm measured by a Flame Ionization Detector (FID) or no visible FLIR Plume indicates that a leak is repaired. Leaks that cannot be repaired within 15 days shall be reported to IDNR along with a plan to address the leak.
  - ii. Sample and test hexane content in representative samples of the meal, oil and wastewater. Such testing is in addition to the sampling described in Item 5.a. above. Results of the sampling shall be reviewed as to the cause of any variation. Appropriate actions shall be taken to minimize hexane loss.