

PERMIT BOOK

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 092012-007

Project Number: 2012-09-085
Installation Number: 095-2001

Parent Company: Cargill, Inc.

Parent Company Address: 15407 McGinty Road West, Wayzata, MN 55391

Installation Name: Cargill, Inc.

Installation Address: 2306 Rochester Street, Kansas City, MO 64120

Location Information: Jackson County, S28/33, T50N, R33W

Application for Authority to Construct was made for:

The installation of two (2) flakers and the replacement of two (2) cyclones. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required.*

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

SEP 21 2012

EFFECTIVE DATE

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual startup of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC 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 be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2012-09-085

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."

Cargill, Inc.
Jackson County, S28/33, T50N, R33W

1. Control Device Requirement - Cyclones
 - A. Cargill, Inc. shall control emissions from the two (2) new flakers using cyclones (EP105 and EP106) as specified in the permit application.
 - B. The cyclones shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Cargill, Inc. shall maintain an operating and maintenance log for the cyclones which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
2. Emissions Limitations and Performance Testing
 - A. Cargill, Inc. shall not emit more than 1.56 lb/hr of PM, 0.78 lb/hr of filterable PM₁₀, and 0.78 lb/hr of filterable PM_{2.5} from the stacks of the flaker cyclones (EP105 and EP106).
 - B. Cargill, Inc. shall demonstrate compliance with the emission limits in Special Condition 2.A. by performing compliance testing on one of the two flaker cyclones (EP105 or EP106). These tests shall be performed within 60 days after achieving the maximum production rate of the flakers, but not later than 180 days after initial start-up of the new flakers for commercial operations and shall be conducted in accordance with the stack test procedures outlined in Special Conditions 2.C., 2.D., 2.E. 2.F., 2.G and 2.H.

Page No.	4
Permit No.	
Project No.	2012-09-085

SPECIAL CONDITIONS:

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

- C. During the performance tests required by Special Condition 2.B., all of the flakers, including both the new and existing flakers, controlled by the cyclones shall be in operation.
- D. The operating parameters (i.e. temperature, pressure, flow rate, etc.) at which the stack tests are conducted shall be used to set the appropriate values used in actual operations of the cyclones. The operating parameters shall be determined and agreed upon by the Air Pollution Control Program's enforcement section and Cargill, Inc. before the start of the performance tests.
- E. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
- F. Two copies of a written report of the performance test results shall be submitted to the Director within 60 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
- G. 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.
- H. If the results of the performance tests show that the emissions from the flaker cyclone stack are greater than the limits in Special Condition 2.A., Cargill, Inc. shall evaluate what effect this would have on the permit applicability and submit the results of any such evaluation within 30 days of submitting the report required in Special Condition 2.F.

Page No.	5
Permit No.	
Project No.	2012-09-085

SPECIAL CONDITIONS:

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

3. Record Keeping and Reporting Requirements
 - A. Cargill, Inc. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used
 - B. Cargill, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2012-09-085
Installation ID Number: 095-2001
Permit Number:

Cargill, Inc.
2306 Rochester
Kansas City, MO 64120

Complete: August 23, 2012

Parent Company:
Cargill, Inc.
15407 McGinty Road West
Wayzata, MN 55391

Jackson County, S28/33, T50N, R33W

REVIEW SUMMARY

- Cargill, Inc. has applied for authority to install two (2) flakers and replace two (2) cyclones.
- Cargill, Inc. has asked to keep confidential the design capacities for the flaker feed conveyor and the extraction plant. This is the public version of the permit. The confidential version is issued under Project No. 2012-08-059.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation. Subpart DD, *Standards of Performance for Grain Elevators*, of the NSPS does not apply to the flakers but does apply to other equipment at the installation that handles and stores whole soybeans.
- None of the NESHAPs apply to this installation.
- MACT subpart GGGG, *National Emission Standard for Hazardous Air Pollutants: Solvent Extractions for Vegetable Oil Production* does apply to the facility. However, it only applies to the HAP emissions, and the proposed equipment does not generate HAP emissions.
- Cyclones are being used to control the particulate emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below *de minimis* levels, but above the insignificant exemption levels.
- This installation is located in Jackson County, a maintenance area for ozone and an attainment area for all other criteria pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below *de minimis* levels.
- Emissions testing are required for the equipment.
- A modification to the current Part 70 Operating Permit Renewal Application (Project 2007-07-035) or the permit itself, if issued, is required for this installation within one year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Cargill, Inc. owns and operates a soybean processing and extraction plant in Kansas City, Missouri. The soybeans are dried, dehulled, and extracted, using hexane, for oil. The flakes that have been extracted are also desolventized, dried and ground to be stored and sold as agricultural feed. The installation is major for construction permits and a Part 70 source for operating permits.

The following New Source Review permits have been issued to Cargill, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
607	Soybean processing and extraction plant.
848	Truck receiving pit.
818	Truck dumping.
942	Fuel oil limits.
986	Solvent change.
1025	Hammermill and conveyors.
1118	Add equipment.
¹ NA	Solvent Change
1140	New soybean processing and extraction plant.
1296	New dust collector
032012-012	Temporary boiler.

Note 1: Local permit number not available (NA)

PROJECT DESCRIPTION

Cargill, Inc. proposes to modify the current flaker system by adding two (2) new flakers. The project will increase the total number of flakers from ten (10) to twelve (12). Cargill, Inc. also proposes to replace the two (2) existing cyclones that serve the existing flakers with two (2) new cyclones. Each new cyclone will control emissions from five (5) existing flakers and one (1) new flaker. The maximum air flow through both new cyclones is 18,235 dscfm. The project is designed to produce flakes that are thinner and have more surface area for extraction, allowing the facility to

produce more oil from the same amount of soybeans. There will be no increase in the amount of solvent used to extract the oil. Because more oil is taken out of the soybean, there will be a decrease in the weight of the meal produced from the extracted flakes.

This project is not expected to debottleneck any equipment upstream of the flaker. The first flaker feed conveyor is sized for [redacted] tons of soybeans per day and the extraction plant is sized at [redacted] tons per day. Neither of these numbers will change. The same maximum amount of soybeans can be processed by the facility. Some equipment downstream of the flakers, such as the extractor and the distillation column, will be debottlenecked due to the processing of more oil.

EMISSIONS/CONTROLS EVALUATION

Normally, for process modifications, the project emissions are the post-project potential emissions minus the two-year average Baseline Actual Emissions (BAE). However, the post-project potential emissions were calculated to be less than *de minimis* levels by themselves. Therefore, using the BAE is not necessary and the emissions increase from the project was assumed to be the potential emissions of the proposed equipment. The potential emissions from the flaker cyclones were calculated using the grain loading (in gr/dscf) provided by the company – 0.005 gr/dscf of PM_{2.5}, 0.005 gr/dscf of PM₁₀ and 0.01 gr/dscf of PM. The installation will have to perform stack tests to ensure that these limits are not exceeded (see Special Condition No. 2). The facility has a limit in its previous permit (No. 1140) that limits its solvent loss to 0.140 gallons of solvent per ton of soybean processed on a twelve (12) months rolling basis, so there should be no emissions increase from solvent loss. Fugitive VOC emissions from oil storage should be negligible. Emissions from the meal dryers/coolers, handling and storage will not increase because the amount of meals produced will be decreasing.

The following table provides an emissions summary for this project. Existing actual emissions were taken from the installation's 2011 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	<major	N/D	6.85	N/A
PM ₁₀	15.0	<major	13.57	3.42	N/A
PM _{2.5}	10.0	<major	12.04	3.42	N/A
SO _x	40.0	<major	0.00	N/A	N/A
NO _x	40.0	<major	0.00	N/A	N/A
VOC	40.0	>major	177.71	N/A	N/A
CO	100.0	<major	0.00	N/A	N/A
HAPs	10.0/25.0	>major	N/D	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Cargill, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Chia-Wei Young
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- *The Application for Authority to Construct form, dated August 22, 2012, received August 23, 2012, designating Cargill, Inc. as the owner and operator of the installation.*

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	
CFR	Code of Federal Regulations	National Emissions Standards for Hazardous Air Pollutants
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	NSPS	New Source Performance Standards
CO_{2e}	carbon dioxide equivalent	NSR	New Source Review
COMS	Continuous Opacity Monitoring System	PM	particulate matter
CSR	Code of State Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
dscf	dry standard cubic feet	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
EQ	Emission Inventory Questionnaire	ppm	parts per million
EP	Emission Point	PSD	Prevention of Significant Deterioration
EPA	Environmental Protection Agency	PTE	potential to emit
EU	Emission Unit	RACT	Reasonable Available Control Technology
fps	feet per second	RAL	Risk Assessment Level
ft	feet	SCC	Source Classification Code
GACT	Generally Available Control Technology	scfm	standard cubic feet per minute
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. James Alfieri
Plant Manager
Cargill, Inc.
2306 Rochester
Kansas City, MO 64120

RE: New Source Review Permit - Project Number: 2012-09-085

Dear Mr. Alfieri:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

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

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:cyl

Enclosures

c: Kansas City Regional Office
PAMS File: 2012-09-085
Permit Number: