

STATE OF MISSOURI

PERMIT BOOK



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: 112011-001 Project Number: 2011-06-001
Installation Number: 119-0017

Parent Company: Simmons Foods, Inc.

Parent Company Address: P.O. Box 430, Siloam Springs, AR 72761

Installation Name: Simmons Feed Ingredients, Inc.

Installation Address: 10700 South State Highway 43, Southwest City, MO 64863

Location Information: McDonald County, S21, T21N, R23W

Application for Authority to Construct was made for:

Modifications to the plant that concern the following alternate operating scenarios: 1) The use of a new packed bed scrubber (EP-12 PC b) when #1 Thermal Oxidizer (EU-12 PC) is not in use, and 2) the use of a new centrifuge (EU-6b PC) as a back-up to press (EU-6 PC). This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

NOV - 2 2011

EFFECTIVE DATE

Wendy Vit for Kyrle L. Moore

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 Departments' Air Pollution Control Program of the anticipated date of start up 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 start up 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.

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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."

Simmons Feed Ingredients, Inc.
McDonald County, S21, T21N, R23W

1. **Superseding Condition**
The conditions of this permit supersede Special Condition 3 and 4 found in the previously issued construction permit No. 052005-026 issued by the Air Pollution Control Program.
2. **Control Device Requirements – Thermal Oxidizer and Scrubber**
 - A. Simmons Feed Ingredients, Inc. shall control emissions from the PROCAL work tanks (EU-2 PC), the PROCAL SPN tanks (EU-1 PC), the PROCAL blood tanks (EU-1 PC), the PROCAL mixers (EU-4 PC), the PROCAL storage bin baghouses (EU-10 PC) and the PROCAL hammermill baghouse (EU-10 PC) with a thermal oxidizer (EP-12-PC). Special Condition 2.A does not apply when the scrubber (EU-12 PC-A) is operational and the production line is not in full production. Full production is defined as occurring when steam is flowing and raw ingredients are being fed to the dryer (EU-7PC). The thermal oxidizer shall be operated and maintained in accordance with the manufacturer's specifications.
 - B. Simmons Feed Ingredients, Inc. shall control emissions from the PROCAL blood and SPN tanks with a packed bed scrubber (EP-12-PCb) whenever the thermal oxidizer (EP-12-PC) is off-line. This special condition does not apply when there is no potential for odorous emissions (e.g. extended plant shutdown where no raw materials are being received). The packed bed scrubber shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Simmons Feed Ingredients, Inc. shall maintain an operating, maintenance and inspection log for the thermal oxidizer and for the scrubber which shall include the following:
 - 1) Incidents of malfunction (s) including the date(s) and duration of the event, the probable cause, any corrective actions taken and the impact on emissions due to the malfunction;
 - 2) Any maintenance activities conducted on the unit, such as

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SPECIAL CONDITIONS:

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

- replacement of equipment, etc.; and
- 3) A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance
3. Record Keeping and Reporting Requirements
- A. Simmons Feed Ingredients, 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 Material Safety Data Sheets (MSDS) for all materials used.
- B. Simmons Feed Ingredients, 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.
4. Restriction of Odors
- A. If a situation of demonstrated nuisance odors exists in violation of 10 CSR 10-6.165, the Director may require Simmons Feed Ingredients, Inc. to submit a corrective action plan within ten (10) days adequate to timely and significantly mitigate the odors. Simmons Feed Ingredients, Inc. shall implement any such plan immediately upon its approval by the Director. Failure to either submit or implement such a plan shall be a violation of this permit.
- B. If a continued situation of demonstrated nuisance odors exists in violation of 10 CSR 10-6.165, the Director may require Simmons Feed Ingredients, Inc. to collect air quality monitoring data regarding Hydrogen Sulfide (H₂S) and Volatile Organic Compounds (VOCs) at its property boundary. The monitoring site should be located in the area of highest estimated concentrations. PROCAL, Inc. will file, and receive approval from the Director, a Quality Assurance Project Plan prior to commencing operation. Data collecting shall continue until notice of release from this requirement is received by Simmons Feed Ingredients, Inc. from the Director. The Director shall evaluate the need for continued data collection annually and report the findings of the evaluation to Simmons Feed Ingredients, Inc.

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

Project Number: 2011-06-001
Installation ID Number: 119-0017
Permit Number:

Simmons Feed Ingredients, Inc.
10700 South State Highway 43
Southwest City, MO 64863

Complete: June 1, 2011

Parent Company:
Simmons Foods, Inc.
P.O. Box 430
Siloam Springs, AR 72761

McDonald County, S21, T21N, R23W

REVIEW SUMMARY

- Simmons Feed Ingredients, Inc. has applied for authority to use the following alternate operating scenarios: 1) the use of a new packed bed scrubber (EP-12-PCb) when #1 Thermal Oxidizer (EU-12 PC) is not in use, and 2) the use of a new centrifuge (EU-6b PC) as a back-up to press (EU-6 PC).
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment, but in insignificant quantities.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- The new packed bed scrubber (EP-12-PCb) is being used to control odor emissions from the PROCAL blood and SPN tanks whenever #1 thermal oxidizer (EU-12-PC) is not in operation.
- 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.
- This installation is located in McDonald County, an attainment area for all criteria air 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 not required for the equipment.
- An amendment to your Part 70 Permit application, which was submitted September of 2008, is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Simmons Feed Ingredients, Inc. (Simmons Feed) operates a poultry rendering plant near Southwest City, Missouri. The installation currently operates three (3) distinct lines at this installation: a feather meal line, a poultry meal line and a feed production process line.

In the feather meal line, wet feathers and blood are fed to two (2) continuous hydrolyzer process lines. Using elevated temperatures and pressures, keratin, the main component of feathers, is converted into amino acids. The product is then transferred onto a conveyor that transports the material to a scalper screen and into a bin. The bin feeds two 19.05 MMBTU/hr natural gas dryers. The product exiting the dryers has moisture content of seven percent (7%) and is fed into a large cyclone to separate the product sizes. The cyclone, used almost entirely as a process sizing device versus an emission control device, feeds the products to storage bins where they are eventually transferred to a hammermill to create the appropriate size feeds. The finished products are conveyed to storage bins to await shipping via trucks to customers.

The poultry meal line operates along similar lines. Poultry by-products are received from the rendering plant located at the site and from other poultry rendering operations in the region. The meat is crushed and fed to continuous cookers with an animal fat mixture. The resulting product is drained of excess fat that is recycled to the cookers, and then fed to a screw press, removing more of the fat and liquids. The product is transferred to storage bins and then to a series of grinders that produce two (2) grades of meal: feed grade and pet food grade. The feed grade meal is transferred directly to storage bins to await shipping. The pet food grade meal is sent to a pellet cooler and then to a series of screens that separates the meal into different sizes for different applications. The finished products are then transferred to storage bins to await shipping via trucks to customers.

Simmons Feed also has a feed production process line. The process line uses blood (21,828 pounds per hour) and dissolved air flotation (DAF) skimmings - a wastewater byproduct (24,000 pounds per hour) generated in the Simmons poultry rendering process to bind fat using a low temperature chemical reaction. The process is capable of producing 65.6 tons of feed product per 24-hour day. Steam for the PRO*CAL process is supplied by the existing Simmons boilers under the existing permit conditions and limitations.

The installation also operates four (4) 50.4 MMBTU/hr boilers and one (1) 32.5 MMBTU/hr boiler. The boilers can combust natural gas, propane or poultry derived oil as fuel. A thermal oxidizer (EU-12 PC) is also used in conjunction with the production process line.

An Operating Permit application was received by the Air Pollution Control Program on November 29, 2004. A Part 70 application is currently under review. Simmons was issued an Intermediate Operating Permit : OP2000-011, and it expired February 8, 2005.

The following permits have been issued to Simmons Feed Ingredients, Inc. from the Air Pollution Control Program.

Table 1: Previously Issued Construction Permits

Permit Number	Description
0199-020	Modification of feather meal line and addition of blood coagulation system
082001-008	Use of poultry derived fuel as alternative fuel in existing boilers
082001-008A	Amend emission factors used for the combustion of poultry derived fuel
052005-026	Installation of a new feed production process line
032006-005	Expansion of the offal processing system

PROJECT DESCRIPTION

Simmons Feed Ingredients, Inc. (Simmons Feed) is seeking authority to make the following two modifications. The first modification involves an alternate control scenario where the exhaust air being treated in the #1 Thermal Oxidizer (EU-12 PC) can instead be vented to a new packed bed scrubber (EU-12-PC b). The emission sources that are being currently vented to the thermal oxidizer are the PROCAL work tanks (EU-2 PC), the PROCAL SPN tanks (EU-1 PC), the PROCAL blood tanks (EU-1 PC), the PROCAL mixers (EU-4 PC), the PROCAL storage bin baghouses (EU-10 PC) and the PROCAL hammermill baghouse (EU-10 PC). After installation of the scrubber, Simmons Feed intends to vent to the #1 Thermal Oxidizer during the week (Monday through Friday) during normal production and vent to the scrubber during the weekend shifts when the plant is not operating, but may be receiving blood or other raw materials.

The new scrubber's primary function is to reduce and control odorous sulfur compounds. The scrubber is not expected to control VOC emissions. Thus, the alternate control scenario is expected to have an increase in VOC emissions during scrubber operation. However, other emissions, most notably NO_x, will decrease since the thermal oxidizer will not be operating when the scrubber is in use.

The second modification involves the addition of a new centrifuge (EP-6b PC). The centrifuge will be operated in parallel to the existing press (EU-6 PC). The centrifuge will be used as a back-up to the press and will only be operated when the press is down for cleaning or maintenance. The centrifuge will have approximately half of the capacity of the current press. Since the press and the centrifuge cannot operate at the same time, the addition of the centrifuge will not cause any downstream debottlenecking.

The primary emissions that will occur in the centrifuge, like the press, are VOCs. The exhaust air from the new centrifuge will be routed to the PROCAL oxidizer (EU 12PC). Since these units will not be operated at the same time and the centrifuge has a smaller capacity than the existing press, the total exhaust emissions will not increase. There is expected to be no net emissions increase associated with the second modification and emissions associated with this modification are not included in the potential emissions of the application listed in Table 2 below.

EMISSIONS/CONTROLS EVALUATION

The project's potential emissions are primarily VOCs associated with the use of the scrubber as a control device in lieu of the thermal oxidizer. As stated above, the main purpose of the scrubber is to control odors and is not expected to control VOCs. To estimate the emissions potentially going to the scrubber and being emitted, Simmons Feeds took readings at the inlet of the thermal oxidizer on January 6, 2011 using a photoionization detector (PID). Readings ranged from 90 to 100 parts per million (ppm) when the plant was in full production mode. The VOCs were assumed to have an average molecular weight of 50 pounds per pound-mole. With an airflow estimated at 5,000 standard cubic feet per minute (scfm), the total VOC emissions when the scrubber is being used equates to 3.95 pounds per hour. (Note that emission reductions due to decreased operation of the thermal oxidizer have not been taken into account.)

In order to give Simmons Feed the flexibility to operate the scrubber whenever needed and to also avoid cumbersome recordkeeping, no special condition is given in this permit limiting the use of the scrubber. Therefore, the potential emissions of the project are based on continuous operation. (8,760 hours per year). However, the scrubber is not sized to handle all of the air streams that are currently controlled in the thermal oxidizer and they expect to operate only during the weekend when the production line is not operational. Therefore, the VOC emissions stated in Table 2 are believed to be very conservative.

The following table provides an emissions summary for this project. Existing potential emissions represent the facility's emission prior to this project and were taken from Permit Number 032006-005. Simmons Feed is currently updating some of the emission factors and has submitted updated calculations along with their current Operating Permit application which is being reviewed. The updated emission factors do not affect this permit review and are not reflected in Table 2 below since the technical analysis has not been completed. Existing actual emissions were taken from the installation's 2010 Emission Inventory Questionnaire (EIQ). Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM _{2.5}	10.0	N/D	5.88	N/A	N/A
PM ₁₀	15.0	121.42	7.65	N/A	N/A
SO _x	40.0	100.54	0.34	N/A	N/A
NO _x	40.0	366.08	34.66	N/A	N/A
VOC	40.0	104.96	3.09	17.3	N/A
CO	100.0	175.75	47.20	N/A	N/A
HAPs	10.0/25.0	N/D	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

Simmons Feed Ingredients, 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *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

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.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 23, 2011, received May 31, 2011, designating Simmons Foods, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Mr. William Hada
Plant Engineer
Simmons Feed Ingredients, Inc.
10700 South State Highway 43
Southwest City, MO 64863

RE: New Source Review Permit - Project Number: 2011-06-001

Dear Mr. Hada:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 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 Susan Heckenkamp, 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:shl

Enclosures

c: Southwest Regional Office
PAMS File: 2011-06-001

Permit Number: