

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

PERMIT BOOK

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: **11 2015 - 011** Project Number: 2015-09-024
Installation Number: 123-0003

Parent Company: ConAgra Foods

Parent Company Address: 11 ConAgra Drive, Omaha, NE 68102

Installation Name: ConAgra Foods

Installation Address: 204 Vine Street, Macon, MO 63552

Location Information: Macon County, S16, T56N, R14W

Application for Authority to Construct was made for:
New grill. 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.

Stamp for
Prepared by
Chad Stephenson
New Source Review Unit

Kyra L Moore
Director or Designee
Department of Natural Resources

Nov 24, 2015
Effective Date

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 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.

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."

ConAgra Foods
Macon County, S16, T56N, R14W

1. **Superseding Condition**
 - A. The conditions of this permit supersede all special conditions found in the previously issued construction permits 112013-007 and 112013-007A issued by the Air Pollution Control Program.

2. **EP-23 and EP-25 Stack Modifications**
 - A. ConAgra Foods shall modify the stack parameters to meet or exceed the following dimensions: 70 feet height from grade, 10,000 cubic feet per minute airflow, 16 inch diameter and 125° Fahrenheit temperature.

 - B. ConAgra Foods shall keep on-site engineering calculations or as-built measurements which demonstrate the modified parameters. The records shall indicate the date when the stack modifications were complete.

 - C. ConAgra Foods shall comply with the maximum hourly design rate of 4,000 pounds per hour for EP-23 listed in permit 112013-007A until the stack modifications are complete.

3. **Grilled Meat Production Limit**
 - A. ConAgra Foods shall not exceed an annual production limit of 113,424,277 pounds of grilled meat at EP-23 and EP-25 per twelve (12) consecutive month period.

 - B. ConAgra Foods shall record the monthly and the sum of the most recent consecutive 12 months production of grilled meat from this installation at EP-23 and EP-25. These records shall be kept on-site for five (5) years and shall be made immediately available for inspection to Department of Natural Resources' personnel upon request.

4. **Record Keeping and Reporting Requirements**
 - A. ConAgra Foods 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.

SPECIAL CONDITIONS:

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

- B. ConAgra Foods shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2015-09-024
Installation ID Number: 123-0003
Permit Number:

Installation Address:

ConAgra Foods
204 Vine Street
Macon, MO 63552

Parent Company:

ConAgra Foods
11 ConAgra Drive
Omaha, NE 68102

Macon County, S16, T56N, R14W

REVIEW SUMMARY

- ConAgra Foods has applied for authority to install a new electric grill (EP-25) and modify an existing electric grill (EP-23).
- The application was deemed complete on October 7, 2015.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are pyrene, phenanthrene, fluoranthene, fluorene and anthracene. Other individual polycyclic organic matter (POM) HAPs are also emitted.
- None of the New Source Performance Standards (NSPS) apply to the project emission units.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of pyrene, phenanthrene, fluoranthene, fluorene and anthracene exceed the Screen Modeling Action Level (SMAL). An air quality analysis was completed for all individual HAPs with emissions above their respective SMAL. An annual production limit has been taken to stay in compliance with all risk assessment levels.
- This installation is located in Macon County, an attainment area for all 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 performed to determine the ambient impact of pyrene, phenanthrene, fluoranthene, fluorene and anthracene.
- Emissions testing is not required for the equipment.
- Submittal of an application to amend the basic operating permit is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

ConAgra Foods is a food processing plant located in Macon. The installation consists of two chicken processing lines equipped with two multipurpose ovens followed by a thermal brander. These processing lines are used for grinding, shaping, battering, breading, baking, branding, freezing, and packaging of the final product. The installation is a minor source for New Source Review (construction) permitting and holds a basic operating permit. The following New Source Review permits have been issued to ConAgra Foods from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0684-002	Installation of equipment for formed chicken
1295-008	Addition of two chicken processing lines
0896-011	Replacement of one existing fryer line by two new chicken fryer lines
1297-025	Addition of two multipurpose ovens
072002-002	Addition of two new fryers and replacement of a brander
022011-011	Replacement of Boiler 1 with a 30.6 MMBtu/hr natural gas boiler
112013-007	Add Grill
112013-007A	Remove emission limit by modeling

PROJECT DESCRIPTION

ConAgra Foods proposes to install a new chicken cooking grill (EP-25). The grill is identical to the Pro-Grill (EP-23) that was approved under construction permit 112013-007 and amended under construction permit 112013-007A. The grill is powered by electricity which heats belts and transfers the heat to the product. The grill will be installed in series prior to oven EP-18 installed under construction permit 1297-005. The new grill will not debottleneck the existing oven. The new grill is a Stein Pro-Grill model PG1148 rated at 7,000 pounds of boneless, skinless chicken and turkey breasts or tenders per hour. This design rate is based upon the grill searing the chicken while final cooking is accomplished in the oven. Cooking emissions are uncontrolled.

ConAgra Foods also proposes to modify the existing Pro-Grill's (EP-23) output to 7,000 pounds per hour. The existing Pro-Grill was originally rated at 4,000 pounds per hour. The 4,000 pounds per hour was based on projected volumes of the initial product at the time when it was permitted. Since the installation of the grill ConAgra has approved additional products for grilling. Additionally, ConAgra is reviewing technologies that will

improve the ability to freeze the product, which they estimate will allow them up to 7,000 pounds per hours based on the above factors. Since the facility will be required to take an annual grilled meat production limit for EP-23 and EP-25 it was decided a more thorough examination of the MHDR was not needed.

Emissions from both grills will exit from a new common 16-inch diameter stack with a flow rate of 10,000 cubic feet per minute (cfm). The stack height will be 70-feet from grade.

EMISSIONS/CONTROLS EVALUATION

Potential emissions from the grill were calculated using emission factors obtained from *Methods for Developing a National Emission Inventory for Commercial Cooking Processes: Technical Memorandum*, E.H. Pechan & Associates, Inc., December 22, 2003. Criteria pollutants were obtained from Table 1B while HAPs were obtained from Table 2B. The report shows non-detect for PM while PM₁₀, PM_{2.5}, SO_x, and NO_x were not analyzed. This review assumed the any particulate matter emissions would be insignificant compared to respective de minimis levels and that SO_x and NO_x emissions would not exist as combustion is not occurring.

Potential emissions from the supporting haul road activity were calculated using the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Chapter 13.2.1, *Paved Roads*, January 2011.

The following table provides an emissions summary for this project. Existing potential emissions were cited from construction permit 112013-007A. They may not accurately reflect the installation as some permits prior to construction permit 112013-007A involved replacing existing units and did not determine certain pollutants. Existing potential HAP emissions are from natural gas combustion and cooking and are not expected to approach major source levels. Existing actual emissions were cited from the installation's 2014 EIQ. Potential emissions of the project represent the potential of the new grill, the increase in production of the existing grill and the increase in haul road activity, assuming continuous operation (8,760 hours per year). Conditioned potential emissions of the project represent an annual production limit to stay below the annual risk assessment level (RAL) for phenanthrene.

Table 2: Emission Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Project	Conditioned Potential Emissions of the Project
PM	25.0	N/D	N/D	0.063	0.058
PM ₁₀	15.0	88.31	8.72	0.013	0.012
PM _{2.5}	10.0	N/D	5.87	0.003	0.003
SO _x	40.0	0.30	0.02	N/A	N/A
NO _x	40.0	58.08	5.50	N/A	N/A
VOC	40.0	11.82	5.79	24.53	22.67
CO	100.0	26.05	7.66	27.59	25.50
GHG (CO ₂ e)	75,000 / 100,000	N/D	N/D	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/D	N/D	N/A	N/A
HAPs	10.0 / 25.0	N/D	0.04	0.59	0.55
Combined POM	10.0	N/D	N/D	0.58	0.54
¹ Naphthalene	10.0	N/D	N/D	0.0610	0.06
¹ Benzo(a)pyrene	² 0.01	N/D	N/D	0.0006	0.006
¹ Acenaphthylene	² 0.01	N/D	N/D	0.0080	0.0074
¹ Fluorene	² 0.01	N/D	N/D	0.0110	0.0102
¹ Phenanthrene	² 0.01	N/D	N/D	0.1147	0.1060
¹ Fluoranthene	² 0.01	N/D	N/D	0.0380	0.0351
¹ Pyrene	² 0.01	N/D	N/D	0.0503	0.0465
¹ Benz(a)anthracene	² 0.01	N/D	N/D	0.0074	0.0068
¹ Acenaphthene	² 0.01	N/D	N/D	0.0031	0.0028
¹ Anthracene	² 0.01	N/D	N/D	0.0270	0.0249
Biphenyl	10.0	N/D	N/D	0.0080	0.0074

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

¹ An individual POM. Individual POM are combined for comparison to the major source level, but not combined for comparison to the SMAL.

² SMAL

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 pyrene, phenanthrene, fluoranthene, fluorene and anthracene exceed the Screen Modeling Action Level (SMAL). An air quality analysis was completed to demonstrate compliance. An annual production limit has been taken to stay in compliance.

APPLICABLE REQUIREMENTS

ConAgra Foods 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*
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *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*

AMBIENT AIR QUALITY IMPACT ANALYSIS

Emissions of concern from the grilling process are polycyclic organic matter (POM) emissions. The POM screen model action level (SMAL) is 0.01 tons per year. Initial impacts from the grill exceeded 4 percent of the RAL, therefore all sources of the pollutants from the installation were included in the final AAQIA. The installation submitted a compliant AAQIA for phenanthrene, fluoranthene, pyrene, fluorine, and anthracene. The potential emissions from these five pollutants from the new Pro-Grill and the modification of the existing Pro-Grill all exceed the SMAL. The installation submitted a compliant AAQIA for all five pollutants. The AAQIA found that fluoranthene, pyrene, fluorene, and anthracene were below the 24-hour and annual risk assessment level (RAL) and compliant with the AAQIA. The AAQIA indicated the phenanthrene from all sources was below the 24-hour RAL and compliant; however the phenanthrene exceeded the annual RAL. ConAgra Foods has chosen to take an annual production limit to stay below the annual RAL for phenanthrene.

AAQIA results are provided in Table 3. EPA's AERSCREEN model was chosen. Conservatively the highest impact from each emission unit was summed to obtain the installation-wide impact. Stack modifications to EP-4 and EP-6 in project 2014-08-013 were incorporated into the AAQIA. Those modifications aren't required by special condition because the contribution to the AAQIA from those emission points is insignificant regardless of their stack configuration. The entire installation's phenanthrene, fluoranthene, pyrene, fluorine and anthracene AAQIA is overwhelming dictated by the two grills (EP-23 and EP-25).

Table 3: AAQIA Results

Pollutant	24 Hour RAL ($\mu\text{g}/\text{m}^3$)	24 Hour Impact ($\mu\text{g}/\text{m}^3$)	10X Annual RAL ($\mu\text{g}/\text{m}^3$)	Annual Impact ($\mu\text{g}/\text{m}^3$)
Phenanthrene	0.16	0.1038	0.16	0.0173
Fluoranthene	0.16	0.0344	0.16	0.0057
Pyrene	0.16	0.0455	0.16	0.0076
Fluorene	0.16	0.0010	0.16	0.0017
Anthracene	0.16	0.0244	0.16	0.0041

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*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 9, 2015, received September 9, 2015, designating ConAgra Foods as the owner and operator of the installation.
- Methods for Developing a National Inventory for Commercial Cooking Processes: Technical Document, H.E. Pechan & Associates, Inc., December 22, 2003

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	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
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. Kent Cavender
Maintenance Manager
ConAgra Foods
204 Vine Street
Macon, MO 63552

RE: New Source Review Permit - Project Number: 2015-09-024

Dear Mr. Cavender:

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 condition 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 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 thirty 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 Administrative Hearing Commission, Truman State Office Building, P.O. Box 1557, Jefferson City, MO 65102: www.oa.mo.gov/ahc. If you have questions regarding this permit, contact Chad Stephenson, at Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:csl

Enclosures

c: Northeast Regional Office
PAMS File: 2015-09-024
Permit Number: