

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: 062018-005

Project Number: 2017-09-036
Installation Number: 021-0019

Parent Company: Purina Animal Nutrition, LLC

Parent Company Address: 4001 Lexington Avenue North, Arden Hills, MN 55126

Installation Name: Purina Animal Nutrition, LLC

Installation Address: 4225 S. Highway 169, St. Joseph, MO 64501

Location Information: Buchanan County, S26, T57N, R35W

Application for Authority to Construct was made for:

Installation of a new extruder, a new dryer, and associated handling system. 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.

Prepared by
Chia-Wei Young
New Source Review Unit

Director or Designee
Department of Natural Resources

JUN 06 2018

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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 source(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 using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:

<http://dnr.mo.gov/regions/>

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."

Purina Animal Nutrition, LLC
Buchanan County, S26, T57N, R35W

1. Control Device Requirement - High Efficiency Cyclones
 - A. Purina Animal Nutrition, LLC shall control emissions from the new extruder (EXS13) and the new dryer (EXS14) using high efficiency cyclones as specified in the permit application.
 - B. The high efficiency cyclones shall be operated and maintained in accordance with the manufacturer's specifications. Purina Animal Nutrition, LLC shall maintain a copy of the cyclone manufacturer's performance warranty on site.
 - C. Purina Animal Nutrition, LLC shall maintain an operating and maintenance log for the baghouses 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. Control Device Requirement - Baghouses
 - A. Purina Animal Nutrition, LLC shall control emissions from the pneumatic conveyors (EXS15, EXP17, and EXP18) and the packaging equipment (EXP22) using baghouses as specified in the permit application.
 - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Purina Animal Nutrition, LLC shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

SPECIAL CONDITIONS:

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

- E. Purina Animal Nutrition, LLC shall maintain a copy of the baghouse manufacturer's performance warranty on site.
 - F. Purina Animal Nutrition, LLC shall maintain an operating and maintenance log for the baghouses 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.
3. Record Keeping and Reporting Requirements
- A. Purina Animal Nutrition, LLC 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 SDS for all materials used.
 - B. Purina Animal Nutrition, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by e-mail at AirComplianceReporting@dnr.mo.gov, 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: 2017-09-036
Installation ID Number: 021-0019
Permit Number: 062018-005

Installation Address:

Purina Animal Nutrition, LLC
4225 S. Highway 169
St. Joseph, MO 64501

Parent Company:

Purina Animal Nutrition, LLC
4001 Lexington Avenue North
Arden Hills, MN 55126

Buchanan County, S26, T57N, R35W

REVIEW SUMMARY

- Purina Animal Nutrition, LLC has applied for authority to install a new extruder (EXS13), a new dryer (EXS14), and associated handling equipment and the replacement of a 350 hp boiler (EXP11).
- The application was deemed complete on December 6, 2017.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are products of combustion, all of which are expected to be less than their respective SMAL.
- 40 CFR 60, Subpart Dc, *Standards of Performance for Small-Industrial-Commercial-Institutional Steam Generating Units*, of the New Source Performance Standards (NSPS) applies to the replacement boiler.
- None of the NESHAPs apply to this installation.
- None of the currently promulgated MACT regulations apply to the proposed equipment.
 - 40 CFR 63, Subpart JJJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers for Area Sources*, of the MACT does not apply to the replacement boiler because it is considered a gas-fired boiler as defined in this subpart.
 - 40 CFR 63, Subpart DDDDDDD, *National Emission Standards for Hazardous Air Pollutants for Area Sources: Prepared Feeds Manufacturing*, of the MACT does not apply to this installation because it does not use material containing chromium or manganese.
- High efficiency cyclones and baghouse filters are being used to control the particulates 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.
- This installation is located in Buchanan 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 not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- A Basic Operating Permit Application is required within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Purina Animal Nutrition, LLC owns and operates an animal feed mill in Buchanan County in St. Joseph. This facility manufacturer both pelleted and extruded animal feed. The extrusion feed plant began operations in 1992. The installation is considered a minor source under construction permits and a Basic source under operating permits. However, the installation submitted installation-wide potential emissions calculations with the application for this project so that its Basic operating permit status can be reviewed. Calculations show that after the issuance of this permit, PM_{2.5} and PM₁₀ emissions will still be greater than their respective de minimis levels. Therefore, the facility remains a basic installation.

Equipment currently at the installation are listed below in Table 1.

Table 1: Current Equipment at the Installation

Emission Point	Description
EP01	Truck Unloading
EP02	Rail Unloading
EP03	Storage Bin Vents
EP04	Grinder
EP07	Mineral Storage Bin Vents
EP08	Micro Room Vent
EP10	Pelleting #1
EP11	Pelleting #2
EP14	Bulk Loadout
EP15	Packing

EP17	Natural Gas Boiler
EP18	Solvent Parts Washer
EXP6	Premix Grinder
EXP2	Ext Bin Storage
EXP7A	Transfer Leg
EXP7B	Transfer Leg
EXP1A	Ext Grinding
EXP1B	Ext Grinding (300 hp)
EXP4	Existing Cooler
EXP21	BLO Storage Bin Vents
EXP5	Bulk Loadout
EXP12	200 hp Nugget Boiler
EXPT1	Liquid #1 Tank
EXPT2	Liquid #1 Tank
EXPT4	Liquid #3 Tank
EXPT6	Liquid #5 Tank
EXP11	¹ 350 hp Natural Gas Boiler

Note 1: This natural gas boiler will be replaced by another 350 hp natural gas boiler as part of this project.

The following New Source Review permits have been issued to Purina Animal Nutrition, LLC from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0188-003	Relocated grinding operations, installation of new cyclone and scratch feed plant
1088-006	Installation of 200 hp pellet mill and vertical cooling tower
0389-007	Replaced boiler with natural gas boiler
0393-009	Installation of a corn grinding unit, dryer, and cooler
1295-006	Installation of new grain cleaning system
1299-005	Installation of 30 gallon solvent based parts cleaner, new bag filter on grinder
1299-006	Construction of a new grinder, dryer, cooler, and boiler and increase design rates for storage bins, product loadout, and an existing grinder
102000-008	Authority to burn fuel oil in a previously permitted boiler
112003-007	Modification of existing permit number 1299-006, Section 5
0188-003B	Removing hours of operation limits

PROJECT DESCRIPTION

Purina Animal Nutrition LLC proposes to modify its existing nugget extrusion operation. The maximum hourly design rate of the extrusion line after the modification is 20 tph.

The following equipment and control devices will be new to the modified extrusion line.

Table 3: New Equipment to be Installed

Emission Point	Description	Control Device
EXS13	Extruder	¹ High Efficiency Cyclone
EXS14	Extrusion Dryer	¹ Three High Efficiency Cyclones
EXS15	Pneumatic Conveying	¹ Baghouse
EXS16	Fat App Pumps	None

EXP17	Pneumatic Conveying	Baghouse
EXP18	Pneumatic Conveying	Baghouse
EXP19	Truck Receiving	None
EXP20	Four (4) New Bins	None
EXPT3	Liquid #2 Tank	None
EXPT5	Liquid #4 Tank	None
EXP22	Packaging	Baghouse

Note 1: These equipment are also vented to existing biofilters. However, biofilters are generally used to control odor and VOC emissions. Therefore, they are not included here as a control device.

The facility will also be replacing an existing 350 hp natural gas boiler with a new 350 hp natural gas boiler (EXP11). The current West Extruder Line, with extruder, dryer, and cooler (EXP9, EXP10) will be removed.

The installation will also be adding a liquid storage tank, but this liquid is not expected to contain or emit any regulated air pollutants, according to its SDS. Therefore, this storage tank does not need to be permitted and is not included as part of this project. The facility has asked for confidentiality regarding the actual identity of all liquids in the storage tanks. Therefore, the names of the liquids are not mentioned in this public version of the permit. No confidential version of the permit will be issued.

Twelve (12) existing emission units and associated control devices that are already at the installation will continue to be used for the extrusion line. These existing equipment are not considered part of this project. According to the installation, the existing equipment is part of a linear system that is not changing. The equipment is not being modified to operate any different than it current does. The only work being done to the existing equipment is maintenance work to insure reliability. The existing emission units are the bottlenecks of the process so the addition of new downstream equipment will not debottleneck the process. Emissions from the project are from the new equipment to be installed and the replacement boiler.

The equipment to be reused are given below in Table 4.

Table 4: Existing Equipment to be Reused

Emission Point	Description	Control Device
EXP1A	Fine Grinder	Baghouse
EXP1B	Fine Grinder	Baghouse
EXP2	Four (4) Storage Bins	Bin Vent Filter
EXPT1	Liquid #1 Tank	None
EXPT2	Liquid #1 Tank	None
EXPT4	Liquid #3 Tank	None
EXP5	Truck Bulk Loadout	None
EXPT6	Liquid #5 Tank	None
EXP6	Premix Grinder	Baghouse
EXP7A	Premix Jump Leg	None
EXP7B	Premix Jump Leg	None
EXP12	200 hp Nugget Boiler	None

EMISSIONS/CONTROLS EVALUATION

Emissions were calculated using various emission factors from EPA document, AP-42, *Compilation of Air Pollutant Emission Factors*, fifth edition, or WebFire. A list of pollutants and emission factor sources are given below in Table 5.

Table 5: Emission Factor Sources

Emission Point	Description	Emission Factor Source
EXS13	Extruder	PM: AP-42, Section 9.9.1, Table 9.9.1-2. (5/03) PM _{2.5} , PM ₁₀ : Particle Size Distribution from AP-42, Section 9.9.1 and Appendix B.1.
EXS14	Extrusion Dryer	PM and PM ₁₀ : WebFire, scc code 30200754 PM _{2.5} : Particle Size Distribution from AP-42, Appendix B.2.
EXS15	Pneumatic Conveying	PM: AP-42, Chapter 11.26, Table 11.26-1. (11/95)
EXP17	Pneumatic Conveying	PM _{2.5} , PM ₁₀ : Particle Size Distribution from AP-42, Appendix B.1
EXP18	Pneumatic Conveying	
EXP19	Truck Receiving	PM ₁₀ , PM: AP-42 Chapter 9.9.1, Table 9.9.1-2. (5/03) PM _{2.5} : Particle Size Distribution from AP-42, Appendix B.2.
EXP20	New Bins	PM _{2.5} , PM ₁₀ , PM: AP-42 Chapter 9.9.1, Table 9.9.1-2 (5/03)
EXS14, EXP11	Natural Gas Combustion	PM _{2.5} , PM ₁₀ , PM, SO _x , NO _x , VOC, HAPs, GHG-Mass, GHG-CO ₂ e: AP-42, Chapter 1.4, Natural Gas Combustion (7/98)
EXP22	Packaging	PM ₁₀ , PM: AP-42, Section 9.9.1, Table 9.9.1-1. (5/03) PM _{2.5} : Particle Size Distribution from AP-42, Appendix B.2.

For the extruder and the pneumatic conveyors, the emission factors are controlled and the control device efficiency is included in the factor. For the dryer, the high efficiency cyclone is given 80% control for PM_{2.5} and 95% control for particulates greater than PM_{2.5}, taken from AP-42, Appendix B.2. The capture efficiency was assumed to be 100% since the equipment will be completely enclosed and ducted to the cyclones. For the new storage bins, no control devices are used. For the packaging equipment, PM_{2.5} was given 99% control and particulates greater than PM_{2.5} were given 99.5% control, taken from AP-42, Appendix B.2. No information were given about how the particulates are captured for the packaging equipment, so a conservative value of 50% was used for the capture efficiency.

For the extruder, the extrusion dryer, and pneumatic conveying, no known emission factors were found. Therefore, emission factors from similar operations were used to estimate emissions.

The following table provides an emissions summary for this project. Existing potential emissions were calculated during the review for this project with emission factors from AP-42. Existing actual emissions were taken from the installation's 2017 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 6: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2017 EIQ)	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	39.28	N/D	19.36	N/A
PM ₁₀	15.0	11.19	3.54	9.14	N/A
PM _{2.5}	10.0	5.62	2.54	5.46	N/A
SO _x	40.0	0.09	0.01	0.04	N/A
NO _x	40.0	15.77	2.01	6.28	N/A
VOC	40.0	0.87	0.11	0.35	N/A
CO	100.0	13.24	1.69	5.28	N/A
GHG (CO ₂ e)	N/A	19,034.04	N/D	7,581.90	N/A
GHG (mass)	N/A	18,922.31	N/D	7,537.39	N/A
HAPs	10.0/25.0	0.30	N/D	0.12	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

Purina Animal Nutrition, LLC 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

- *Operating Permits*, 10 CSR 10-6.065
- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *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.

- *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
- *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*, 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 December 5, 2017, received December 6, 2017, designating Purina Animal Nutrition, LLC as the owner and operator of the installation.

The following documents are relied upon in this permit review

- E-mail communications between Purina Animal Nutrition, LLC and the Missouri Air Pollution Control Program.
- EPA document, AP-42, *Compilation of Air Pollutant Emission Factors*, fifth edition.

APPENDIX A

Abbreviations and Acronyms

%	percent	Mgal	1,000 gallons
°F	degrees Fahrenheit	MW	megawatt
acfm	actual cubic feet per minute	MHDR	maximum hourly design rate
BACT	Best Available Control Technology	MMBtu	Million British thermal units
BMPs	Best Management Practices	MMCF	million cubic feet
Btu	British thermal unit	MSDS	Material Safety Data Sheet
CAM	Compliance Assurance Monitoring	NAAQS	National Ambient Air Quality Standards
CAS	Chemical Abstracts Service	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CEMS	Continuous Emission Monitor System	NO_x	nitrogen oxides
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	carbon monoxide	NSR	New Source Review
CO₂	carbon dioxide	PM	particulate matter
CO₂e	carbon dioxide equivalent	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
COMS	Continuous Opacity Monitoring System	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
CSR	Code of State Regulations	ppm	parts per million
dscf	dry standard cubic feet	PSD	Prevention of Significant Deterioration
EIQ	Emission Inventory Questionnaire	PTE	potential to emit
EP	Emission Point	RACT	Reasonable Available Control Technology
EPA	Environmental Protection Agency	RAL	Risk Assessment Level
EU	Emission Unit	SCC	Source Classification Code
fps	feet per second	scfm	standard cubic feet per minute
ft	feet	SDS	Safety Data Sheet
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	SSM	Startup, Shutdown & Malfunction
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		
m/s	meters per second		

EP	Description	MHDR (tph)	Control	Control %			Emission Factors (lb/ton)			Emissions (lb/hr)						6.400 lbmt	
				< PM2.5	PM2.5 - PM10	PM10 - PM	PM2.5	PM10	PM	EF Source	PM2.5	PM10	PM	PM2.5	PM10		PM
EXS13	New Extruder	18	HE Cyclone	Included	Included	Included	0.0345	0.075	0.15	AP-42, Chapt. 9.9.1	0.621	1.35	2.7	2.71998	5.913	11.826	Exempt
EXS14	New Dryer	15	HE Cyclone	80%	95%	95%	0.1104	0.29	0.480	WEFIRE 30200754	0.3312	0.4659	0.6084	1.450656	2.040642	2.664792	Exempt
EXS15	Pneumatic Conveyor	15	Filter Receiver	Included	Included	Included	1.080E-03	0.002	0.0036	AP-42, Chapt 11.26	0.0162	0.030456	0.054	0.070956	0.13339728	0.23652	Exempt
EXP17	Pneumatic Conveyor	15	Filter Receiver	Included	Included	Included	1.080E-03	0.002	0.0036	AP-42, Chapt 11.26	0.0162	0.030456	0.054	0.070956	0.13339728	0.23652	Exempt
EXP18	Pneumatic Conveyor	15	Filter Receiver	Included	Included	Included	1.080E-03	0.002	0.0036	AP-42, Chapt 11.26	0.0162	0.030456	0.054	0.070956	0.13339728	0.23652	Exempt
EXP19	Receiving	20	None	0%	0%	0%	0.000425	0.0025	0.017	AP-42, Chapt. 9.9.1	0.0085	0.05	0.34	0.03723	0.219	1.4892	30.51223
EXP20	Storage Bins	20	None	0%	0%	0%	0.0011	0.0063	0.025	AP-42, Chapt. 9.9.1	0.022	0.126	0.5	0.09636	0.55188	2.19	30.51223
EXP22	Packaging	20	Baghouse	99%	99.50%	99.50%	0.000136	0.0008	0.0033	AP-42, Chapt. 9.9.1	0.0000272	9.36E-05	0.0003436	0.00011914	0.000409968	0.001505	Exempt
Total =																	

EP	Description	Pollutants	EF (lb/mmscf)	E (lb/hr)	E (tpy)
EXS14	Driver	PM2.5	7.6	0.002584	0.01131792
		PM10	7.6	0.002584	0.01131792
MMCF/hr =	0.00034	PM	7.6	0.002584	0.01131792
		SOx	0.6	0.000204	0.00089352
		NOx	100	0.034	0.14892
		VOC	5.5	0.00187	0.0081906
		CO	84	0.02856	0.1250928
		Lead	0.0005	0.0000017	7.446E-07
		N2O	2.2	0.000748	0.00327624
		CH4	2.3	0.000782	0.00342516
		CO2	120000	40.8	178.704
		GHG-Mass	N/A	40.80153	178.7107014
		GHG-CO2e	N/A	41.042454	179.7659485
		POM	8.82E-05	2.9988E-08	1.31E-07
		2-Methylnaphthalene	2.40E-05	8.16E-09	3.57E-08
		3-Methylchoranthrene	1.80E-06	6.12E-10	2.68E-09
		7,12-Dimethylbenz(a)anthracene	1.60E-05	5.44E-09	2.38E-08
		Acenaphthene	1.80E-06	6.12E-10	2.68E-09
		Acenaphthylene	1.80E-06	6.12E-10	2.68E-09
		Anthracene	2.40E-06	8.16E-10	3.57E-09
		Benz(a)anthracene	1.80E-06	6.12E-10	2.68E-09
		Benzo(a)pyrene	1.20E-06	4.08E-10	1.79E-09
		Benzo(b)fluoranthene	1.80E-06	6.12E-10	2.68E-09
		Benzo(g,h,i)perylene	1.20E-06	4.08E-10	1.79E-09
		Benzo(k)fluoranthene	1.80E-06	6.12E-10	2.68E-09
		Chrysene	1.80E-06	6.12E-10	2.68E-09
		Dibenzo(a,h)anthracene	1.20E-06	4.08E-10	1.79E-09
		Fluoranthene	3.00E-06	1.02E-09	4.47E-09
		Flurene	2.80E-06	9.52E-10	4.17E-09
		Indeno(1,2,3-cd)pyrene	1.80E-06	6.12E-10	2.68E-09
		Phenanthrene	1.70E-05	5.78E-09	2.53E-08
		Pyrene	5.00E-06	1.7E-09	7.45E-09
		Benzene	2.10E-03	0.00000714	3.13E-06
		Formaldehyde	7.50E-02	0.000255	1.12E-04
		Hexane	1.80E+00	0.000612	2.68E-03
		Naphthalene	6.10E-04	2.074E-07	9.08E-07
		Toluene	3.40E-03	0.00001156	5.06E-06
		Arsenic	2.00E-04	0.00000068	2.9784E-07
		Beryllium	1.20E-05	4.08E-09	1.78704E-08
		Cadmium	1.10E-03	0.00000374	1.63812E-06
		Chromium	1.40E-03	0.00000476	2.08488E-06
		Cobalt	8.40E-05	2.856E-08	1.25093E-07
		Manganese	3.80E-04	1.292E-07	5.65896E-07
		Mercury	2.60E-04	8.84E-08	3.87192E-07
		Nickel	2.10E-03	0.00000714	3.12732E-06
		Selenium	2.40E-05	8.16E-09	3.57408E-08

Project Emissions Summary		
Pollutants	Total Emission (tpy)	SMAL
PM2.5	5.460595056	N/A
PM10	9.136441728	N/A
PM	19.35840689	N/A
SOx	0.03768552	N/A
NOx	6.28092	N/A
VOC	0.3454506	N/A
CO	5.2759728	N/A
Lead	3.14046E-05	N/A
N2O	0.13818024	N/A
CH4	0.14446116	N/A
CO2	7537.104	N/A
GHG-Mass	7537.386641	N/A
GHG-CO2e	7581.893241	N/A
POM	5.54E-06	0.01
2-Methylnaphthalene	1.51E-06	0.01
3-Methylchoranthrene	1.13E-07	0.01
7,12-Dimethylbenz(a)anthracene	1.00E-06	0.01
Acenaphthene	1.13E-07	0.01
Acenaphthylene	1.13E-07	0.01
Anthracene	1.51E-07	0.01
Benz(a)anthracene	1.13E-07	0.01
Benzo(a)pyrene	7.54E-08	0.01
Benzo(b)fluoranthene	1.13E-07	0.01
Benzo(g,h,i)perylene	7.54E-08	0.01
Benzo(k)fluoranthene	1.13E-07	0.01
Chrysene	1.13E-07	0.01
Dibenzo(a,h)anthracene	7.54E-08	0.01
Fluoranthene	1.88E-07	0.01
Flurene	1.76E-07	0.01
Indeno(1,2,3-cd)pyrene	1.13E-07	0.01
Phenanthrene	1.07E-06	0.01
Pyrene	3.14E-07	0.01
Benzene	1.32E-04	2
Formaldehyde	4.71E-03	2
Hexane	1.13E-01	10
Naphthalene	3.83E-05	10
Toluene	2.14E-04	10
Arsenic	1.26E-05	0.005
Beryllium	7.54E-07	0.008
Cadmium	6.91E-05	0.01
Chromium	8.79E-05	5
Cobalt	5.28E-06	0.1
Manganese	2.39E-05	0.8
Mercury	1.63E-05	0.01
Nickel	1.32E-04	1
Selenium	1.51E-06	0.1

EP	Description	Pollutants	EF (lb/mmscf)	E (lb/hr)	E (tpy)
EXP11	NG Boiler	PM2.5	7.6	0.1064	0.466032
		PM10	7.6	0.1064	0.466032
MMCF/hr =	0.014	PM	7.6	0.1064	0.466032
		SOx	0.6	0.0084	0.036792
		NOx	100	1.4	6.132
		VOC	5.5	0.077	0.33776
		CO	84	1.176	5.15088
		Lead	0.0005	0.00007	0.0003066
		N2O	2.2	0.0308	0.134904
		CH4	2.3	0.0322	0.141036
		CO2	120000	1680	7358.4
		GHG-Mass	N/A	1680.063	7358.67594
		GHG-CO2e	N/A	1689.9834	7402.127292
		POM	8.82E-05	1.2348E-06	5.41E-06
		2-Methylnaphthalene	2.40E-05	3.36E-07	1.47E-06

	3-Methylchoranthrene	1.80E-06	2.52E-08	1.10E-07
	7,12-Dimethylbenz(a)anthracene	1.60E-05	2.24E-07	9.81E-07
	Acenaphthene	1.80E-06	2.52E-08	1.10E-07
	Acenaphthylene	1.80E-06	2.52E-08	1.10E-07
	Anthracene	2.40E-06	3.36E-08	1.47E-07
	Benzo(a)anthracene	1.80E-06	2.52E-08	1.10E-07
	Benzo(a)pyrene	1.20E-06	1.68E-08	7.36E-08
	Benzo(b)fluoranthene	1.80E-06	2.52E-08	1.10E-07
	Benzo(g,h,i)perylene	1.20E-06	1.68E-08	7.36E-08
	Benzo(k)fluoranthene	1.80E-06	2.52E-08	1.10E-07
	Chrysene	1.80E-06	2.52E-08	1.10E-07
	Dibenzo(a,h)anthracene	1.20E-06	1.68E-08	7.36E-08
	Fluoranthene	3.00E-06	4.20E-08	1.84E-07
	Fluorene	2.80E-06	3.92E-08	1.72E-07
	Indeno(1,2,3-cd)pyrene	1.80E-06	2.52E-08	1.10E-07
	Phenanthrene	1.70E-05	2.38E-07	1.04E-06
	Pyrene	5.00E-06	7.00E-08	3.07E-07
	Benzene	2.10E-03	2.94E-05	1.29E-04
	Formaldehyde	7.50E-02	1.05E-03	4.60E-03
	Hexane	1.80E+00	2.52E-02	1.10E-01
	Naphthalene	6.10E-04	8.54E-06	3.74E-05
	Toluene	3.40E-03	4.76E-05	2.08E-04
	Arsenic	2.00E-04	2.80E-06	0.000012264
	Beryllium	1.20E-05	1.68E-07	7.3584E-07
	Cadmium	1.10E-03	1.54E-05	0.000067452
	Chromium	1.40E-03	1.96E-05	0.000085848
	Cobalt	8.40E-05	1.18E-06	5.15088E-06
	Manganese	3.80E-04	5.32E-06	2.33016E-05
	Mercury	2.60E-04	3.64E-06	1.59432E-05
	Nickel	2.10E-03	2.94E-05	0.000128772
	Selenium	2.40E-05	3.36E-07	1.47168E-06

Existing Feed Mill																	
EP	Description	MHDR (tph)	Control	Control %			Emission Factors (lb/ton)				EF Source	Emissions (lb/hr)			Emissions (tpy)		
				PM2.5	PM10	PM	PM2.5	PM10	PM	PM2.5		PM10	PM	PM2.5	PM10	PM	
01	Truck Unloading	60	Filter	99%	99.50%	99.50%	0.000425			0.017	AP 42, Table 9.9.1-1	0.000255	0.00075	0.0051	0.001117	0.003285	0.022338
02	Belt Unloading	60	2-Sided Shield	0%	0%	0%	0.000425			0.017	AP 42, Table 9.9.1-1	0.0025	0.15	1.02	0.11189	0.637	4.4676
03	Storage Bin Vents	60	Enclosure	0%	0%	0%	0.0011			0.025	AP 42, Table 9.9.1-1	0.066	0.378	1.5	0.28908	1.65564	6.57
04	Grinding	10	Filter	99%	99.50%	99.50%	0.000306			0.018	AP 42, Table 9.9.1-1	3.06E-05	9E-05	0.0006	0.000134	0.000394	0.002628
07	Mini Storage Bin Vents	60	Enclosed	0%	0%	0%	0.0011			0.025	AP 42, Table 9.9.1-1	0.066	0.378	1.5	0.28908	1.65564	6.57
08	Micro Room	0.5	Filter	99%	99.50%	99.50%	0.0058			0.034	AP 42, Table 9.9.1-1	0.00029	8.5E-05	0.000153	0.000127	0.000372	0.000668
10	Pelleting #1	12	HE Cyclone	80%	95%	98%	0.051			0.3	AP 42, Table 9.9.1-1	0.1224	0.045	0.077	0.536112	0.1971	0.31536
11	Pelleting #2	12	HE Cyclone	80%	95%	98%	0.051			0.3	AP 42, Table 9.9.1-1	0.1224	0.045	0.077	0.536112	0.1971	0.31536
14	Bulk Loadout	17	None	0%	0%	0%	0.000136			0.0008	AP 42, Table 9.9.1-1	0.002312	0.0136	0.0561	0.010127	0.059568	0.245718
15	Packing	10	None	0%	0%	0%	0.000136			0.0008	AP 42, Table 9.9.1-1	0.00136	0.008	0.031	0.005957	0.03504	0.14454
												1.779535	4.46114	18.65421			

Existing Extrusion Plant																	
EP	Description	MHDR (tph)	Control	Control %			Emission Factors (lb/ton)				EF Source	Emissions (lb/hr)			Emissions (tpy)		
				PM2.5	PM10	PM	PM2.5	PM10	PM	PM2.5		PM10	PM	PM2.5	PM10	PM	
EXP6	Premis Grinder	10	Filter	99%	99.50%	99.50%	0.012			0.012	AP 42, Table 9.9.1-1	0.0012	0.0006	0.0006	0.005256	0.002628	0.002628
EXP2	Ext Bin Storage	10	Filter	99%	99.50%	99.50%	0.011			0.025	AP 42, Table 9.9.1-1	0.00011	0.000315	0.000482	0.00138	0.005475	
EXP7A	Transfer Leg	10	None	0%	0%	0%	0.0058			0.034	AP 42, Table 9.9.1-1	0.058	0.34	0.61	0.25404	1.4892	2.6718
EXP7B	Transfer Leg	10	None	0%	0%	0%	0.0058			0.034	AP 42, Table 9.9.1-1	0.058	0.34	0.61	0.25404	1.4892	2.6718
EXP1A	Ext Grinding	3	Filter	99%	99.50%	99.50%	0.000306			0.018	AP 42, Table 9.9.1-1	9.18E-06	0.000027	0.00018	4.62E-05	0.000138	0.000788
EXP1B	Ext Grinding	7	Filter	99%	99.50%	99.50%	0.000306			0.018	AP 42, Table 9.9.1-1	2.14E-05	6.3E-05	0.00042	9.38E-05	0.000276	0.00184
EXP4	Existing Cooler	18	HE Cyclone	0%	0%	0%	0.0255			0.12	AP 42, Table 9.9.1-1	0.459	4.05	2.7	2.01042	1.7739	11.826
EXP21	RIC Storage Bin Vents	20	Vent Filters	99%	99.50%	99.50%	0.0011			0.025	AP 42, Table 9.9.1-1	0.00022	0.00063	0.0025	0.000964	0.002759	0.01095
EXP5	Bulk Loadout	20	None	0%	0%	0%	0.000136			0.0008	AP 42, Table 9.9.1-1	0.00272	0.016	0.056	0.011914	0.07008	0.28908
												2.537249	4.829541	17.48036			

*Table 9.9.1-1 does not have particle size distribution for equipment at animal feed mills. The distribution from grain elevators were used instead. 17% of PM10 were considered PM1.5 while 15% of PM were considered PM10.

**In cases where control devices are listed but no control % are listed, the control efficiencies are already included in the emission factor.

*** Capture efficiency of all control devices are 100%. The equipment are enclosed and ducted to the control devices.

EP	Description	Pollutants	EF (lb/mmact)	E (lb/hr)	E (tpy)
17	NG Boilers	PM2.5	7.6	0.1064	0.466032
		PM10	7.6	0.1064	0.466032
		PM	7.6	0.1064	0.466032
		SOx	0.6	0.0084	0.036792
		NOx	100	1.4	6.132
		VOC	5.5	0.077	0.33726
		CO	84	1.176	5.15088
		Lead	0.0005	0.000007	0.00003066
		N2O	2.2	0.0308	0.134904
		CH4	2.3	0.0322	0.141036
		CO2	120000	1680	7358.4
		GHG Mass	N/A	1680.063	7358.67594
		GHG CO2e	N/A	1689.9834	7402.127292
		POM	8.82E-05	1.23E-06	5.41E-06
		2-Methylnaphthalene	2.40E-05	3.36E-07	1.47E-06
		3-Methylchoranthrene	1.80E-06	2.52E-08	1.10E-07
		7,12-Dimethylbenz(a)anthracene	1.80E-06	2.52E-07	9.91E-07
Acenaphthene	1.80E-06	2.52E-08	1.10E-07		
Acenaphthylene	1.80E-06	2.52E-08	1.10E-07		
Anthracene	2.40E-06	3.36E-08	1.47E-07		
Benz(a)anthracene	1.80E-06	2.52E-08	1.10E-07		
Benzo(a)pyrene	1.20E-06	1.68E-08	7.36E-08		
Benzo(b)fluoranthene	1.80E-06	2.52E-08	1.10E-07		
Benzo(g,h,i)perylene	1.20E-06	1.68E-08	7.36E-08		
Benzo(k)fluoranthene	1.80E-06	2.52E-08	1.10E-07		
Chrysene	1.80E-06	2.52E-08	1.10E-07		
Dibenzo(a,h)anthracene	1.20E-06	1.68E-08	7.36E-08		
Fluoranthene	3.00E-06	4.20E-08	1.84E-07		
Fluorene	2.80E-06	3.92E-08	1.72E-07		
Indeno(1,2,3-cd)pyrene	1.80E-06	2.52E-08	1.10E-07		
Phenanthrene	1.70E-05	2.38E-07	1.04E-06		
Pyrene	5.00E-06	7.00E-08	3.07E-07		
Benzene	2.10E-03	2.94E-05	1.29E-04		
Formaldehyde	7.50E-02	1.05E-03	4.60E-03		
Hexane	1.80E+00	2.52E-02	1.10E-01		
Naphthalene	6.10E-04	8.54E-06	3.74E-05		
Toluene	3.40E-03	4.76E-05	2.08E-04		
Arsenic	2.00E-04	0.0000028	0.00001264		
Beryllium	1.20E-05	0.00000168	7.3584E-07		
Cadmium	1.10E-03	0.0000154	0.000067452		
Chromium	1.40E-03	0.0000196	0.000085688		
Cobalt	8.40E-05	0.000001176	5.1008E-06		
Manganese	3.80E-04	0.00000532	2.33016E-05		
Mercury	2.60E-04	0.00000364	1.59432E-05		
Nickel	2.10E-03	0.0000294	0.000128772		
Selenium	2.40E-05	0.00000336	1.47168E-06		

EP	Description	Pollutants	EF (lb/mmact)	E (lb/hr)	E (tpy)
12	200 hp Nugget Boiler	PM2.5	7.6	0.0608	0.266304
		PM10	7.6	0.0608	0.266304
		PM	7.6	0.0608	0.266304
		SOx	0.6	0.0048	0.021024
		NOx	100	0.8	3.504
		VOC	5.5	0.044	0.19272
		CO	84	0.672	2.94336
		Lead	0.0005	0.000004	1.75E-05
		N2O	2.2	0.0316	0.077088
		CH4	2.3	0.0324	0.080592
		CO2	120000	960	4204.8
		GHG Mass	N/A	960.036	4204.958
		GHG CO2e	N/A	965.7048	4229.787
		POM	8.82E-05	1.23E-06	5.09E-06
		2-Methylnaphthalene	2.40E-05	1.92E-07	8.41E-07
		3-Methylchoranthrene	1.80E-06	1.44E-08	6.31E-08
		7,12-Dimethylbenz(a)anthracene	1.80E-06	1.28E-07	5.61E-07
Acenaphthene	1.80E-06	1.44E-08	6.31E-08		
Acenaphthylene	1.80E-06	1.44E-08	6.31E-08		
Anthracene	2.40E-06	1.92E-08	8.41E-08		
Benz(a)anthracene	1.80E-06	1.44E-08	6.31E-08		
Benzo(a)pyrene	1.20E-06	9.6E-09	4.20E-08		
Benzo(b)fluoranthene	1.80E-06	1.44E-08	6.31E-08		
Benzo(g,h,i)perylene	1.20E-06	9.6E-09	4.20E-08		
Benzo(k)fluoranthene	1.80E-06	1.44E-08	6.31E-08		
Chrysene	1.80E-06	1.44E-08	6.31E-08		
Dibenzo(a,h)anthracene	1.20E-06	9.6E-09	4.20E-08		
Fluoranthene	3.00E-06	2.4E-08	1.05E-07		
Fluorene	2.80E-06	2.24E-08	9.81E-08		
Indeno(1,2,3-cd)pyrene	1.80E-06	1.44E-08	6.31E-08		
Phenanthrene	1.70E-05	1.36E-07	5.96E-07		
Pyrene	5.00E-06	4E-08	1.75E-07		
Benzene	2.10E-03	1.68E-05	7.36E-05		
Formaldehyde	7.50E-02	0.0006	2.63E-03		
Hexane	1.80E+00	0.0144	6.31E-02		
Naphthalene	6.10E-04	4.88E-06	2.14E-05		
Toluene	3.40E-03	2.72E-05	1.19E-04		
Arsenic	2.00E-04	1.6E-06	7.01E-06		
Beryllium	1.20E-05	9.6E-08	4.2E-07		
Cadmium	1.10E-03	8.8E-06	3.85E-05		
Chromium	1.40E-03	1.12E-05	4.91E-05		
Cobalt	8.40E-05	6.72E-07	2.94E-06		
Manganese	3.80E-04	3.04E-06	1.33E-05		
Mercury	2.60E-04	2.08E-06	9.11E-06		
Nickel	2.10E-03	1.68E-05	7.36E-05		
Selenium	2.40E-05	1.92E-07	8.41E-07		

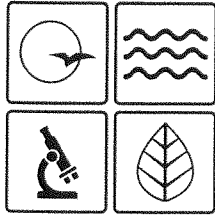
EP	Description	Pollutants	EF (lb/mmact)	E (lb/hr)	E (tpy)
11	350 hp Nugget Boiler	PM2.5	7.6	0.1064	0.466032
		PM10	7.6	0.1064	0.466032
		PM	7.6	0.1064	0.466032
		SOx	0.6	0.0084	0.036792
		NOx	100	1.4	6.132
		VOC	5.5	0.077	0.33726
		CO	84	1.176	5.15088
		Lead	0.0005	0.000007	0.00003066
		N2O	2.2	0.0308	0.134904
		CH4	2.3	0.0322	0.141036
		CO2	120000	1680	7358.4
		GHG Mass	N/A	1680.063	7358.67594

Existing PTE Summary		
Pollutants	Emissions (tpy)	
PM2.5	5.618749755	
PM10	11.9117558	
PM	39.28014823	
SOx	0.094608	
NOx	15.768	
VOC	0.86724	
CO	13.24512	
Lead	0.00007884	
N2O	0.346896	
CH4	0.362664	
CO2	18921.4	
GHG Mass	18922.30956	

GHG-CO2e	N/A	1689.9834	7402.127292
POM	8.82E-05	1.2348E-06	5.41E-06
2-Methylnaphthalene	2.46E-05	0.00000336	1.47E-06
3-Methylanthracene	1.80E-06	2.52E-08	1.10E-07
7,12-Dimethylbenz[a]anthracene	1.60E-05	0.00000224	9.81E-07
Acenaphthene	1.80E-06	2.52E-08	1.10E-07
Acenaphthylene	1.80E-06	2.52E-08	1.10E-07
Anthracene	2.40E-06	3.36E-08	1.47E-07
Benzo[a]anthracene	1.80E-06	2.52E-08	1.10E-07
Benzo[a]pyrene	1.20E-06	1.68E-08	7.36E-08
Benzo[b]fluoranthene	1.80E-06	2.52E-08	1.10E-07
Benzo[k]fluoranthene	1.20E-06	1.68E-08	7.36E-08
Benzo[k]fluoranthene	1.80E-06	2.52E-08	1.10E-07
Chrysene	1.80E-06	2.52E-08	1.10E-07
Dibenzo[a,h]anthracene	1.20E-06	1.68E-08	7.36E-08
Fluoranthene	3.00E-06	0.00000042	1.84E-07
Fluorene	2.80E-06	3.92E-08	1.72E-07
Indeno[1,2,3-cd]pyrene	1.80E-06	2.52E-08	1.10E-07
Phenanthrene	1.70E-05	0.00000238	1.04E-06
Pyrene	5.00E-06	0.00000070	3.07E-07
Benzene	2.10E-03	0.000294	1.29E-04
Formaldehyde	7.50E-02	0.00105	4.60E-03
Hexane	1.80E+00	0.0252	1.10E-01
Naphthalene	6.10E-04	0.0000854	3.74E-05
Toluene	3.40E-03	0.000476	2.08E-04
Arsenic	2.00E-04	0.000028	0.00012764
Beryllium	1.20E-05	0.00000168	7.3584E-07
Cadmium	1.10E-03	0.000154	0.000067452
Chromium	1.40E-03	0.000196	0.000085848
Cobalt	8.40E-05	0.00001176	5.15088E-06
Manganese	3.80E-04	0.0000532	2.33016E-05
Mercury	2.60E-04	0.0000364	1.59432E-05
Nickel	2.10E-03	0.000294	0.000128772
Selenium	2.40E-05	0.00000336	1.47168E-06

GHG-CO2e	19034.04161
POM	1.39074E-05
2-Methylnaphthalene	3.78832E-06
3-Methylanthracene	2.83824E-07
7,12-Dimethylbenz[a]anthracene	2.52268E-06
Acenaphthene	2.83824E-07
Acenaphthylene	2.83824E-07
Anthracene	3.78432E-07
Benzo[a]anthracene	2.83824E-07
Benzo[a]pyrene	1.89216E-07
Benzo[b]fluoranthene	2.83824E-07
Benzo[k]fluoranthene	1.89216E-07
Benzo[k]fluoranthene	2.83824E-07
Chrysene	2.83824E-07
Dibenzo[a,h]anthracene	1.89216E-07
Fluoranthene	4.7304E-07
Fluorene	4.41504E-07
Indeno[1,2,3-cd]pyrene	2.83824E-07
Phenanthrene	2.68056E-06
Pyrene	7.884E-07
Benzene	0.000331128
Formaldehyde	0.011826
Hexane	0.263824
Naphthalene	9.61848E-05
Toluene	0.000536112
Arsenic	0.000031536
Beryllium	1.89216E-06
Cadmium	0.000173448
Chromium	0.00020752
Cobalt	1.32451E-05
Manganese	5.59184E-05
Mercury	4.09968E-05
Nickel	0.000331128
Selenium	3.78432E-06
Total HAP	0.297582873

Feed Mill Haul Road Paved =	3800	Feet Round Trip
Extrusion Haul Road Paved =	2570	Feet Round Trip
Unpaved Road for Both =	200	Feet Round Trip
Feed Mill Trucks Per Month =	1622	Trucks/month
Extrusion Trucks Per Month =	40	Trucks/month
VMT Per Month Feed Mill Paved =	552.9545455	VMT/Month
VMT Per Month Extrusion Paved =	19.46969697	VMT/Month
VMT Per Month Unpaved =	62.95454545	VMT/Month
Paved Road Calcs		
PM2.5 k =	0.00054	lb/VMT
PM10 k =	0.0022	lb/VMT
PM k =	0.011	lb/VMT
Loaded WT =	40	tons
Unloaded WT =	34	tons
Avg WT =	27	tons
SL =	1.1	g/m2
PM2.5 EF =	0.015821155	lb/VMT
PM10 EF =	0.061099108	lb/VMT
PM EF =	0.305495542	lb/VMT
Total Paved PM2.5 PTE =	0.054328477	tpy
Total Paved PM10 PTE =	0.209847665	tpy
Total Paved PM PTE =	0.03778	tpy
Unpaved Road Calcs		
PM2.5 k =	0.15	lb/VMT
PM10 k =	1.5	lb/VMT
PM k =	4.9	lb/VMT
s =	5.1	%
W =	27	tons
PM2.5 EF =	0.13040605	lb/VMT
PM10 EF =	1.304060503	lb/VMT
PM EF =	5.055042093	lb/VMT
PM2.5 PTE =	0.049257922	tpy
PM10 PTE =	0.492579217	tpy
PM PTE =	1.909427263	tpy



Missouri Department of

dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

JUN 06 2018

Mr. Brandon Calvert
Area Plant Manager
Purina Animal Nutrition, LLC
4225 S. Highway 169
St. Joseph, MO 64501

RE: New Source Review Permit - Project Number: 2017-09-036

Dear Mr. Calvert:

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, 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 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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

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,



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Mr. Brandon Calvert
Page Two

whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.aa.mo.gov/ahc.

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 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:cj

Enclosures

c: Kansas City Regional Office
PAMS File: 2017-09-054

Permit Number: 06 2018 - 005