

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: **032015-010** Project Number: 2014-04-036
Installation Number: 207-0014

Parent Company: Nestle' Purina PetCare Company

Parent Company Address: Checkerboard Square - 2B, St. Louis, MO 63164-0001

Installation Name: Nestle' Purina PetCare Company, Golden Products Division

Installation Address: 22450 East State Hwy Y, Bloomfield, MO 63825

Location Information: Stoddard County, S28, T27N, R11E

Application for Authority to Construct was made for:

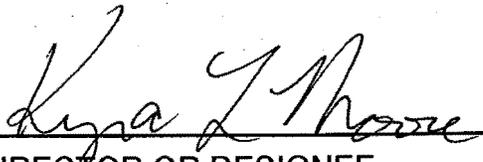
The Perlite Expander Project will install equipment to expand perlite ore onsite to produce a lightweight litter. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

MAR 10 2015

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.

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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."

Nestle' Purina PetCare Company, Golden Products Division
Stoddard County, S28, T27N, R11E

1. Superseding Condition

The conditions of this permit supersede the following special conditions found in the previously issued construction permit issued by the Air Pollution Control Program. The following table identifies the superseded special conditions:

Table 1 Superseded Special Conditions

Permit	Special Conditions
072000-010A	8., 9., 10, 11., 12. and 13.
052001-025	4.(8.), 5.(9.), 6.(10.), 7.(11.), 8.(12.), 9.(13.) and 10.(14.)

2. Carbon Monoxide (CO) Emission Limitations¹

A. Nestle' Purina PetCare Company, Golden Products Division shall emit less than ninety-five (95) tons of CO from in any consecutive 12-month period from the entire installation. At this time, the only CO emitting sources are the dryers, preheaters or furnaces (EP05, EP21, EP23, EP29, and EP40 - EP59) burning natural gas, No. 2 fuel oil, or any combination of these two fuels.

B. Attachment C, or an equivalent form (such as electronic forms) approved by the Air Pollution Control Program, shall be used to demonstrate compliance with Special Conditions 2.A.

¹ This special condition was requested by Nestle' Purina PetCare Company, Golden Products Division in the application and is totally voluntary.

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SPECIAL CONDITIONS:

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

3. Nitrogen Oxides (NO_x) Emission Limitations
 - A. Nestle' Purina PetCare Company, Golden Products Division shall emit less than ninety-five (95) tons of NO_x in any consecutive 12-month period from the entire installation. At this time, the only NO_x emitting sources are the dryers, preheaters or furnaces (EP05, EP21, EP23, EP29, and EP40 - EP59) burning natural gas, No. 2 fuel oil, or any combination of these two fuels.
 - B. Attachment C, or an equivalent form (such as electronic forms) approved by the Air Pollution Control Program, shall be used to demonstrate compliance with Special Conditions 3.A.
4. Control Device Requirement-Baghouse
 - A. Nestle' Purina PetCare Company, Golden Products Division shall operate the control devices whenever the associated equipment (see Attachment B, identified as filter or baghouse in the *Equipment Type* column) is operating.
 - B. The filters or 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. Nestle' Purina PetCare Company, Golden Products Division shall monitor and record the operating pressure drop across the filters 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.
 - E. Nestle' Purina PetCare Company, Golden Products Division shall maintain a copy of the baghouse manufacturer's performance warranty on site.

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SPECIAL CONDITIONS:

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

- F. Nestle' Purina PetCare Company, Golden Products Division 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.

- 5. Record Keeping and Reporting Requirements
 - A. Nestle' Purina PetCare Company, Golden Products Division 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. Nestle' Purina PetCare Company, Golden Products Division 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 show an exceedance of a limitation imposed by this permit.

- 6. Combustion Fuel Limitation
 - A. Nestle' Purina PetCare Company, Golden Products Division shall not combust fuel oil in EP-05 (Rotary Dryer #1231) that has a sulfur content of greater than 0.05% (percent by weight)².

 - B. Nestle' Purina PetCare Company, Golden Products Division shall maintain records on the premises of the analysis of all fuel used which shows weight percentage of sulfur in the fuel. Fuel purchase receipts, analyzed samples or certifications that verify the fuel type and sulfur content will be acceptable.

² This limitation does not apply to the fuel oil used in mobile equipment.

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SPECIAL CONDITIONS:

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

7. Performance Testing

- A. The following equipment and exhaust systems shall be tested according to 40 CFR Part 60, Subpart **UUU**—*Standards of Performance for Calciners and Dryers in Mineral Industries*:

Table 2 Emission Units Subject to Subpart UUU

Emission Unit	Description	Control Device (testing point)
EP50	Expander Furnace	baghouse (POL0004414)
EP51	Expander Furnace	baghouse (POL0004514)
EP52	Expander Furnace	baghouse (POL0004614)
EP53	Expander Furnace	baghouse (POL0004714)
EP54	Expander Furnace	baghouse (POL0004814)
EP55	Expander Furnace	baghouse (POL0004464)
EP56	Expander Furnace	baghouse (POL0004564)
EP57	Expander Furnace	baghouse (POL0004664)
EP58	Expander Furnace	baghouse (POL0004764)
EP59	Expander Furnace	baghouse (POL0004864)

- B. The following equipment and exhaust systems shall be tested according to 40 CFR Part 60, Subpart **OOO**—*Standards of Performance for Nonmetallic Mineral Processing Plants*:

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SPECIAL CONDITIONS:

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

Table 3 Emission Units Subject to Subpart 000

Emission Unit	Description	Control Device (testing point)
EP31	Storage Bin 4380	Vent Filter (POL0004324)
	Storage Bin 3714	Vent Filter (POL0004326)
	Pantleg Hopper 4372	Vent Filter (POL0004373)
	Pantleg Hopper 4377	Vent Filter (POL0004378)
EP32	Perlite Fines Loadout for Bin 4845	Vent Filter (POL0004331)
EP60	Perlite Separator	baghouse (POL0004411)
EP61	Perlite Separator	baghouse (POL0004511)
EP62	Perlite Separator	baghouse (POL0004611)
EP63	Perlite Separator	baghouse (POL0004711)
EP64	Perlite Separator	baghouse (POL0004811)
EP65	Perlite Separator	baghouse (POL0004461)
EP66	Perlite Separator	baghouse (POL0004561)
EP67	Perlite Separator	baghouse (POL0004661)
EP68	Perlite Separator	baghouse (POL0004761)
EP69	Perlite Separator	baghouse (POL0004861)
EP70	Incline Unloading Belt	baghouse (POL0004632)
	Ore Reversing Conveyor	
	South Ore Bin	
	North Ore Bin	
	Reversing Belt Feeder	
	Screener	
	Bank Ore Elevator	
	Ore Fines Surge Bin	

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SPECIAL CONDITIONS:

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

Emission Unit	Description	Control Device (testing point)
	Fines Transfer Bin	
	Surge Hopper	
	Ore Shuttle Supply Weighbelt	
	Bank Shuttle Conveyor	
	Ore Surge Bin #1	
	Ore Surge Bin #2	
	Ore Surge Bin #3	
	Ore Surge Bin #4	
	Ore Surge Bin #5	
	Ore Surge Bin #6	
	Ore Surge Bin #7	
	Ore Surge Bin #8	
	Ore Surge Bin #9	
	Ore Surge Bin #10	
	Ore Weighbelt #1	
	Ore Weighbelt #2	
	Ore Weighbelt #3	
	Ore Weighbelt #4	
	Ore Weighbelt #5	
	Ore Weighbelt #6	
	Ore Weighbelt #7	
	Ore Weighbelt #8	
	Ore Weighbelt #9	
Ore Weighbelt #10		
Screw Conveyor		
EP71	XP Screener #1	Aspiration Baghouse 1 (POL0004641)
	XP Screener #2	
	XP Screener #3	
	XP Screener #4	
	XP Screener #5	
	XP Hopper for System #1	

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SPECIAL CONDITIONS:

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

Emission Unit	Description	Control Device (testing point)
	Fines Weigh Belt Conveyor	
	XP Hopper #1	
	XP Hopper #2	
	XP Hopper #3	
	XP Hopper #4	
	XP Hopper #5	
	XP Furnace Reversing Weighbelt #1	
	XP Furnace Reversing Weighbelt #2	
	XP Furnace Reversing Weighbelt #3	
	XP Furnace Reversing Weighbelt #4	
	XP Furnace Reversing Weighbelt #5	
	Expanded Perlite Fines Surge Bin #1	
	Expanded Perlite Fines Surge Bin #2	
	Expanded Perlite Fines Surge Bin #3	
	Expanded Perlite Fines Surge Bin #4	
	Expanded Perlite Fines Surge Bin #5	
	Collection Conveyor	
	XP Elevator	
	XP Bin Elevator	
	Bridge Conveyor	
	West Storage Discharge Conveyor	
	Screeener (after storage discharge cnv)	
	Storage Discharge Conveyor 2	
	Screeener (after storage discharge cnv)	
	Reversing XP Conveyor	
	XP Conveyor from existing railcar	
XP Conveyor		
Screw Conveyor		
EP72	XP Screeener #6	Aspiration Baghouse 2 (POL0004648)
	XP Screeener #7	
	XP Screeener #8	

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SPECIAL CONDITIONS:

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

Emission Unit	Description	Control Device (testing point)
	XP Screener #9	
	XP Screener #10	
	XP Hopper #6	
	XP Hopper #7	
	XP Hopper #8	
	XP Hopper #9	
	XP Hopper #10	
	XP Furnace Reversing Weighbelt #6	
	XP Furnace Reversing Weighbelt #7	
	XP Furnace Reversing Weighbelt #8	
	XP Furnace Reversing Weighbelt #9	
	XP Furnace Reversing Weighbelt #10	
	Expanded Perlite Fines Surge Bin #6	
	Expanded Perlite Fines Surge Bin #7	
	Expanded Perlite Fines Surge Bin #8	
	Expanded Perlite Fines Surge Bin #9	
	Expanded Perlite Fines Surge Bin #10	
	Collection Conveyor	
	Screw Conveyor	
EP73	Ore Fines Surge Bin	Filter Receiver (POL0004543)
EP75	North XP Storage Bin 4493	Vent Filter (POL0004493)
	South XP Storage Bin 4313	Vent Filter (POL0004313)

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SPECIAL CONDITIONS:

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

- C. A completed Proposed Test Plan Form for each NSPS Subpart identified in 7.A. and 7.B. above:
 - 1) 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;
 - 2) must assure that the test date is acceptable for an observer to be present;
 - 3) must identify the atmospheric exhausts to be tested (i.e. exhausts from the control device);
 - 4) must identify two (2) of the ten (10) furnace sets to be tested; and,
 - 5) may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.

- D. Two copies of the written reports of the performance test results shall be submitted to the Director within 30 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.

- E. The test reports are 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.

- F. Nestle' Purina PetCare Company, Golden Products Division shall use the results of the performance testing to establish emission factors for emission units EP-50 through EP-72 delineated in special conditions 7.A. and 7.B. above. These emission factors will be used for all emission estimations including monthly, 12-month rolling totals and annual emissions reporting.

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

Project Number: 2014-04-036
Installation ID Number: 207-0014
Permit Number:

Nestle' Purina PetCare Company, Golden Products Division Complete: May 9,
2014
22450 East State Hwy Y Revised: December 22, 2014
Bloomfield, MO 63825

Parent Company:
Nestle' Purina PetCare Company
Checkerboard Square - 2B
St. Louis, MO 63164-0001

Stoddard County, S28, T27N, R11E

REVIEW SUMMARY

- Nestle' Purina PetCare Company, Golden Products Division has applied for authority to install equipment to expand perlite ore onsite to produce a lightweight litter.
- HAP emissions are not expected from the proposed equipment.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Some of the equipment in this project are subject to the following NSPS: 40 CFR Part 60: Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants; and, Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries.
- Baghouses and filters 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 air pollutants are below the de minimis levels.
- This installation is located in Stoddard 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.
- Performance testing will be conducted on the hot and cold baghouses on two banks of the perlite expanders to demonstrate compliance, and determine an emission factor for each bank of expander equipment.
- A revision to the Intermediate Operating Permit application is required for this installation within 90 days of commencement of operations.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Nestle' Purina PetCare Company, Golden Products Division is an Intermediate State Installation under the Missouri operating permit program. The engineered litter products facility is located in Bloomfield, Missouri, Stoddard County (denoted by the "A" on the map).



Ralston acquired the Golden Cat Corporation, North America's leading marketer of cat box filler in 1995. Nestle Purina PetCare Company – Golden Products Division (formerly Ralston Purina Company) operates a pet absorbent products plant in Bloomfield, Missouri.

The Golden Products Bloomfield facility mines and processes clay to produce pet absorbent materials, such as cat litter. The facility has numerous pieces of equipment in series that handle in-process clay, e.g., elevators, conveyors, receiving bins, etc. An essential and integral part of the production process involves the removal of fines from the clay as it passes through the various production steps in order to meet product specifications. To enhance the removal of fines from the clay, the Bloomfield facility uses special devices called an aspirator (also referred to as "air ladders") at several

locations throughout each production line. The aspirators are devices uniquely designed for the express purpose of pneumatically separating fines from the in-process clay. After passing an aspirator, the in-process clay is essentially free of fines. Fines picked-up at the aspirators and at various material transfer points along the production line, are aspirated to and removed by a common fabric filter collectors (baghouse) prior to the air stream being discharged to atmosphere. It is important to emphasize that the primary function of this aspiration system, including the collectors, is for fines removal to achieve strict product specifications which include a 99% dust free product, and not for emission control. This makes the collector an integral part of the process and not an emission control device. Nearly all of the fines removed from the processed clay are reworked as a raw ingredient in the Engineered Litter process.

The Perlite Expander Project will install equipment to expand perlite ore onsite to produce a lightweight litter. Perlite ore will be expanded using newly constructed preheaters and furnaces. Conveyor equipment, bins and screens will be constructed to transfer and store perlite ore and expanded perlite. This equipment would require that a new structure be built south of the Engineered Litter Building.

The permitting authority has reviewed the following Nestle' Purina PetCare Company, Golden Products Division projects (Table 4).

Table 4 Project History

Reference No.	Permit Number	Start Date	Complete Date	Description
EX46000014005	1093-013	2/19/1993	9/27/1993	New dust collection installation
EX46000014006	1094-012	6/28/1994	10/17/1994	Installation of a Bemis bagger system as a replacement
EX46000014007	0195-004	9/26/1994	12/20/1994	
EX46000014008		10/24/1994	11/7/1994	
EX46000014009	0495-004	12/21/1994	3/16/1995	Two screens, hammermill, storage bin, two vibrating feeders, one rotary filler, two conveyors and one bucket elevator
EX46000014010	0995-009	5/16/1995	9/11/1995	One bucket elevator, conveyors, surge hoppers and one supersack unloading station
EX46000014011	0396-027	11/30/1995	3/27/1996	modifications to system
EX46000014012		5/13/1996	6/26/1996	Contaminated storm water aeration
EX46000014015		7/15/1996	9/21/2001	Clay Cat Litter, OP
EX46000014013	1296-005	8/1/1996	12/4/1996	install baghouse and dust collection
EX46000014014		1/7/1997	10/20/1997	Truck Unloading Process
EX46000014016		1/28/1997	2/20/1997	elevator replacement
EX46000014017		3/10/1997	3/18/1997	Extension of two year time limit to construct on permit # 0195-004; to install second packaging line covered in the permit.
EX199807004		6/30/1998	8/11/1998	Replacing Packing & Unloading Equipment

Reference No.	Permit Number	Start Date	Complete Date	Description
EX199902037		2/5/1999	3/25/1999	Like for like screen replacement
EX199907073	1199-006	7/23/1999	11/10/1999	Aspiration system upgrade
EX200002006	072000-010	1/28/2000	2/27/2001	finer recovery & dryer control
EX200101045	032001-014	1/17/2001	3/28/2001	Clumping Process Modifications
AP200104053	052001-025	4/13/2001	5/31/2001	Rotary Drying modifications
AP200110042		10/11/2001	9/24/2004	Kitty Litter, OP
AP200110047		10/15/2001	12/12/2001	Conveyor replacement
AP200203101	082002-018	6/11/2002	8/27/2002	Clay Mining & Handling
AP200206046		6/11/2002	8/27/2002	Confidentiality Request for 2002-03-101
AP200310084	032004-013	12/9/2003	3/12/2004	Clay fine recycling
AP200409072		9/24/2004	10/1/2007	Kitty Litter, OP
AP200501087	052005-009	1/27/2005	5/11/2005	Clay Process
AP200504033	072005-046	4/11/2005	7/22/2005	Cat litter expansion
AP200603006		3/1/2006	6/14/2006	Pin Mixer Project
AP200603036		3/1/2006	5/30/2006	Confidentiality for 2006-03-006
AP200604005		4/3/2006	5/31/2006	Belt conveyor and elevator
AP200607001		7/3/2006		Cat Litter Production, OP
AP200607086		7/3/2006	12/19/2007	Confidentiality for OP - 2006-07-001
AP201004024		4/7/2010	10/7/2010	Litter Dryers
AP201012061		12/20/2010	3/19/2012	Confidentiality for 2006-07-001 Resubmittal, OP
AP201101001	102011-009	1/3/2011	10/17/2011	Additional Equipment
AP201101002		1/3/2011	3/19/2012	Confidentiality for 2011-01-001
AP201111029	102011-009A	11/21/2011	1/18/2012	Monitoring Changes
AP201210071		10/31/12	02/28/13	Scoop Capacity Increase
AP201210075		10/31/12	01/09/13	Confidentiality for 2012-10-071
AP201211061	042013-012	11/27/12	04/30/13	Litter Line
AP201211062		11/27/12	12/18/12	confidentiality for 2012-11-061
AP201301058	032013-009	01/25/13	03/15/13	
AP201306064		06/21/13	09/23/13	confidentiality for 2013-10-063
AP201306063	112013-004 ³	06/21/13	11/06/13	
AP201311012	012014-004			install equipment to produce an engineered litter using expanded perlite

³ Superseded by construction permit 012014-004.

PROJECT DESCRIPTION

The Perlite Expander Project will increase the facility's ability to produce lightweight litter. New equipment for receiving, handling, transferring and expanding perlite ore, as well as expanded perlite, will be installed to increase the manufacturing of lightweight litter. New equipment will consist of preheaters, expander furnaces, perlite separators, conveyors, storage bins, filter receivers, screeners, dust collectors and connecting conveyor equipment. These components are addressed in this permit. Perlite ore will be received from railcar and/or truck and conveyed to the banks of expander equipment. Once the perlite ore is expanded, it will be transferred to storage bins and be conveyed to the coaters for litter production. Additional sources are being added, and the incremental additional emissions from these sources are addressed. The net potential emissions increase from the proposed equipment can be found in "Attachment A".

EP32 is an existing emission point at the facility for the Edison filter receivers. Four filter receiver bins are existing and three expanded perlite filter receivers are to be added to this emission point. Two of the new filter receivers will accept expanded material from the expanded fines surge bins. The other filter receiver will accept material from the expanded perlite baghouses. Emissions will exhaust through the filter receivers. The emission factor calculation was established by using the data from Exhibit 1b.

EP40 – EP49 are new emission points at the facility. Each of these emission points will account for the natural gas combustion emissions only from an ore preheater. There are preheaters for the banks of expander equipment. Each ore preheater is in a separate bank of expander equipment.

EP50 – EP59 are new emission points at the facility. Each of these emission points represents a high temperature fines baghouse for each expander bank. Each emission point will account for particulate emissions from an ore preheater, particulate matter and natural gas combustion emissions from an ore expander furnace, and an expanded perlite separator. An emission factor developed from a stack test for expanding perlite ore was used to calculate particulate matter emissions.

EP60 – EP69 are new emission points at the facility. Each of these emission points represents a cool temperature baghouse for each expander bank. Each baghouse/receiver will accept material from the perlite separator. Each emission point will account for particulate emissions from the transfer of expanded perlite to the baghouse/receiver. An emission factor developed from a stack test for expanding perlite ore was used to calculate particulate matter emissions.

EP70 is a new emission point at the facility. This emission point will account for emissions from the new aspirated perlite ore handling sources. Baghouse POL4632 will be added to control aspirated emissions from ore processing. These sources are indicated in red in the emission point detail and represent proposed new equipment in this permit application.

EP71 is a new emission point at the facility. EP71 and EP72 will account for emissions from the new expanded perlite aspirated sources. Baghouse POL4641 will be added to control aspirated emissions from expanded perlite processing. These sources are

indicated in red in the emission point detail and represent proposed new equipment in this permit application.

EP72 is a new emission point at the facility. EP71 and EP72 will account for emissions from the new expanded perlite aspirated sources. Baghouse POL4648 will be added to control aspirated emissions from expanded perlite processing. These sources are indicated in red in the emission point detail and represent proposed new equipment in this permit application.

EP73 is a new emission point at the facility. This emission point will exhaust emissions through a filter receiver. This new filter receiver will accept perlite ore fines from the ore baghouse screw conveyor and ore fines surge bin. This material will be transferred to the ore fines Gaylord. The emission factor calculation was established by using the data from Exhibit 15b.

EP74 is a new emission point at the facility. This emission point will exhaust emissions through a filter receiver. The unit is a general purpose central vacuum that accepts material from the expander building, the bridge conveyor and the truck loading building. The emission factor calculation was done using data from Exhibit 16b.

EP75 are two bin vent filters (POL4313 and POL4493) that have been repurposed from Edison Process (formerly EP31). The emission factor calculation was completed using data from Exhibit 17b. This emission point is now referenced as EP75 and consists of two storage bins (BIN4313 and BIN4493) that will be used to store expanded perlite.

EMISSIONS/CONTROLS EVALUATION

Much of the project information is confidential and contained in a separate, confidential folder. Requests can be made to review that information and will only be granted under certain circumstances. Please refer to state rule *10 CSR 10-6.210 Confidential Information*.

Control devices are involved with this project and are being required as special permit conditions. That means that the control devices are considered in the emissions analysis.

Because this facility is covered by an Intermediate State Installation operating permit, all pollutants must remain below the Part 70 State Installation thresholds. However, should the individual project exceed the significance thresholds, then air quality modeling would need to be performed. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit from each new emissions unit following completion of the project and the baseline actual emissions of these units before the project equals or exceeds the significant amount for that pollutant. Since the potential to emit of the project as a whole is below the de minimis levels, the permitting authority did not conduct any further analysis.

The emission factors and control efficiencies used in this analysis were appropriately documented on the associated workbooks.

During the development of this permit, NPPC switched to a different emission factor for PM2.5. Previously, NPPC used the same emission factor for PM2.5 as it did for PM10 (a very conservative approach). Using this method for this project caused the PM2.5 emissions to exceed the de minimis level, which would have required additional unnecessary requirements and effort. Because this project shares some equipment with the previous project, the department requested that NPPC amend the previously issued permit to account for the PM2.5 change and submit a revised application for this project. The emissions shown for this project correctly presents the emissions for all pollutants, including PM2.5. Anyone reviewing earlier permits or annual reporting may get an erroneous picture of the regulated air pollutant emissions, if compared strictly to this permit. Please see Attachment A for an emission history summary, including emission incremental changes.

The following table provides an emissions summary for this project. Existing potential emissions are based on the permittee's Intermediate State Installation operating permit. If the permittee becomes a Part 70 State Installation, then the accumulation of projects will be evaluated for the applicability of 10 CSR 10-6-060 section (8) ("Prevention of Significant Deterioration"). Existing actual emissions were taken from the installation's 2013 annual emission report. Potential emissions of the application represent the potential of the new equipment and utilized existing equipment, assuming continuous operation (8760 hours per year).

Table 5 Emission Summary

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	42	26	5	47
PM _{2.5}	10.0	15	17 ⁴	4	19
SO _x	40.0	95 ⁵	0	0	38 ⁶
NO _x	40.0	95 ⁷	60	28	95 ⁸
VOC	40.0	6	3	2	8
CO	100.0	100 ⁹	38	23	95 ¹⁰

⁴ Previous annual emissions reporting (MoEIS/EIQ) of PM_{2.5} were based on the same emission factor as PM₁₀. However, beginning with the amendment to the Edison Project (2014-12-019) and continuing into the future, Nestle' Purina PetCare Company, Golden Products Division will report the annual PM_{2.5} emissions using the emission factors used in the Edison Project amendment and this project (2014-04-036). Therefore, earlier years of annual PM_{2.5} reported emissions will appear greater than the current potential to emit of PM_{2.5}.

⁵ Permit 052001-025 imposed a limit on the entire installation SO_x emissions.

⁶ This permit will remove the SO_x installation wide limit.

⁷ Permit 052001-025 imposed a limit on the entire installation NO_x emissions.

⁸ This permit establishes a limit on the entire installation NO_x emissions.

⁹ This facility is an Intermediate State Installation according to 10 CSR 10-6.065 Operating Permits. As such, the facility is limited to less than the Part 70 State Installation threshold levels for all regulated pollutants whose potential to emit, in absence of the voluntary limit, exceed the Part 70 thresholds.

¹⁰ This permit imposes a limit on the entire installation CO emissions.

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
GHG (CO ₂ e)	75,000 / 100,000	100,000	48,416	28,243	95,000
HAPs	10.0/25.0	10.0/25.0	0 ¹¹	0.6	2.6

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 particulate are below the de minimis levels.

APPLICABLE REQUIREMENTS

Nestle' Purina PetCare Company, Golden Products Division 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
- *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

¹¹ 0.84 tons per year of HAPs have been reported as VOCs or PM₁₀ emissions.

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations, 10 CSR 10-6.070 (40 CFR Part 60):*
 - *–Subpart 000, "Standards of Performance for Nonmetallic Mineral Processing Plants"*
 - *–Subpart UUU, "Standards of Performance for Calciners and Dryers in Mineral Industries"*

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.

Randy Raymond
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 April 17, 2014, received April 22, 2014, designating Nestle' Purina PetCare Company as the owner and operator of the installation.
- Email revisions received May 9, 2014.
- Email revisions received May 12, 2014.

- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A
 Potential to Emit, and
 Net Emission Increase
 (two pages)

Max Controlled Potential Emissions	PM10 (2)	PM2.5 (2)	LEAD (1)	SO _x (1)	NO _x (1)	CO (1)	VOC (1)	HAPS (1)	GHGs
Prior to Initial Edison Construction	45.02	35.47	0.01	561.31	290.57	93.82	6.24	35.27	--
After Initial Edison Construction Permit Application (November 2012)	45.50	35.95	0.01	561.31	290.57	93.82	6.24	35.27	--
After Edison Coater Addition Construction Permit Application (June 2013)	55.91	44.72	0.00	38.18	167.67	93.82	6.22	0.00	120,923
Second Amendment to the Edison Coater Expansion Construction Permit (November 2014)	42.10	15.44	0.00	38.18	167.67	93.82	6.22	0.00	122,924
Perlite Expander Construction Permit Application (December 2014)	46.84	19.48	0.00	38.34	195.58	117.27	7.76	0.50	151,167

Attachment A
Potential to Emit, and
Net Emission Increase
(two pages)

Net Increase	PM10 (2)	PM2.5 (2)	LEAD (1)	SO _x (1)	NO _x (1)	CO (1)	VOC (1)	HAPS (1)	GHGs
From Initial Edison Construction (November 2012)	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	--
From Edison Coater Expansion (June 2013)	10.41	8.77	-0.01	-523.14	-122.90	0.00	-0.02	-35.27	--
From Second Amendment to the Edison Coater Expansion (November 2014)	-13.81	-29.28	0.00	0.00	0.00	0.00	0.00	0.00	2,001
From the Perlite Expander Construction (November 2014)	4.74	4.05	0.00	0.17	27.91	23.45	1.54	0.50	28,243
Total Increase From Edison Project	1.82	-15.98	-0.01	-522.97	-94.99	23.45	1.52	-34.77	151,167

(1) Rotary dryer #1231 - on-spec fuel oil - no longer burns #4 fuel

(2) PM10 and PM2.5 emissions were recalculated for the November 2014 submittal using a fractionation method approved by the MDNR. This method assumes that PM10 emission factors are equal to 50% of the total PM emission factors and that PM2.5 emission factors are equal to 20% of the total PM emission factors.

Attachment B
 Summary of Emission Points Affected by this Application
 Perlite Expander Project
 Construction Permit Application
 (fifteen pages)

LEGEND:

Existing

Proposed - Perlite Expander Permit

Revisions - Perlite Expander Permit

Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
EP11	Perlite Railcar and Truck Unloading filter receiver (renamed)	POL0004039	Filter Receiver		
EP20a	Belt Conveyor Transfer Points - Existing	CNV0001801	Conveyor		
	Belt Conveyor Transfer Points - New	CNV0001812	Conveyor		
	Storage Bin	BIN0001907	Bin		
	Screening storeveyor	CNV0002823	Storeveyor		
	Screening storeveyor	CNV0002824	Storveyor		
EP20b	Belt Conveyor Transfer Points - Existing	CNV0001813	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001815	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001816	Conveyor		
	Belt Conveyor Transfer Points - Existing	BSC0001817	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001818	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001819	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001820	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001822	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001823	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001824	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001825	Conveyor		

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Belt Conveyor Transfer Points - Existing	CNV0001847	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001849	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001854	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001855	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001856	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001863	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0002364	Conveyor		
	Volumetric Feeder - Existing	DSP0001930	Feeder		
	Volumetric Feeder - Existing	DSP0001932	Feeder		
	Storage Bin - Existing	BIN0001908	Bin		
	Storage Bin - Existing	BIN0001909	Bin		
	Belt Conveyor Transfer Points - Existing	CNV0001917	Conveyor		
	Belt Conveyor Transfer Points - New	CNV0003174	Conveyor		
	Belt Conveyor Transfer Points - New	CNV0003271	Conveyor		
	CONVEYOR B/W STORVEYOR AND EX CNV1813	CNV0003272	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0001803	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0002330	Conveyor		
	Belt Conveyor Transfer Points - Existing	CNV0002633	Conveyor		
	CONVEYOR BETWEEN STORVEYOR AND SHUTTLE	CNV0003192	Conveyor		
	Edison Belt Conveyor Transfer Point	CNV0003725	Conveyor		
	SEED SHUTTLE CONVEYOR	CNV0003193	Conveyor		
	COATER STORVEYOR	CNV0003194	Storveyor		

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	SPLITS BETWEEN E COATERS AND F COATERS	BSC0003195	Conveyor		
	SPLITS BETWEEN 1E AND 2E	CNV0003196	Conveyor		
	SPLITS BETWEEN 1F AND 2F	CNV0003197	Conveyor		
	DRYER C STORVEYOR	CNV0003201	Storveyor		
	COATER RECYCLE CONVEYOR	CNV0003202	Conveyor		
	DRYER RECEIVING CONVEYOR	CNV0003212	Conveyor		
	Edison Belt Conveyor Transfer Point	CNV0003849	Conveyor		
	SEED SHUTTLE CONVEYOR	CNV0003850	Conveyor		
	SPLITS BETWEEN G COATERS AND H COATERS	BSC0003851	Conveyor		
	SPLITS BETWEEN 1G AND 2G	CNV0003852	Conveyor		
	SPLITS BETWEEN 1H AND 2H	CNV0003876	Conveyor		
EP20c	Bentonite Storage Bin - Existing	POL0001896	Bin		
	Bentonite Storage Bin - Existing	POL0001936	Bin		
	Enrober - Existing	ERB0001931	Enrober		
	Enrober - Existing	ERB0001933	Enrober		
	COATING BENTONITE RECEIVER	POL0003151	Filter Receiver		
	SCREW CONVEYOR ABOVE DRY SCREEN	CNV0003280	Conveyor		
	Coating Bentonite Receiver C	POL0003853	Filter Receiver		
EP30	DRY SCEEN OVERS RECYCLE CONVEYOR	CNV0003203	Conveyor		Use EP-30 September 10, 2014 Stack Test data to calculate emission factor. (0.13/31.27 = 0.004157
	CLOD CATCHER ON ELEVATOR INLET	3213			
	SCREW CONVEYOR ON ASPIRATION BAGHOUSE	CNV0003288	Conveyor		

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	DRYER SHUTTLE CONVEYOR	CNV0003200	Conveyor		lb/ton).
	STORVEYOR TO NEW SYSTEMS	CNV0003175	Storveyor		
	ELEVATOR BETWEEN DRYER AND DRY SCREEN	ELV0003214	Elevator		
	FINISHED PRODUCT ELEVATOR	ELE0003224	Elevator		
	REPLACES EX ELEVATOR 2994 ON BLEND BACK SYSTEM	ELE0003315	Elevator		
	CNV B/W COATER REC CNVS & DRYER C SHUTTLE	CNV0003275	Conveyor		
	COATER 1E	MIX0003160	Coater		
	COATER 2E	MIX0003161	Coater		
	COATER 1F	MIX0003169	Coater		
	COATER 2F	MIX0003170	Coater		
	DRY SCREEN	SCR0003217	Screen		
	Surge Bin	BIN0004342	Bin		
	Belt Scale	BSC0003723	Scale		
	Enrober	ENR0003724	Enrober		
	Belt Conveyor Transfer Point	CNV0003739	Conveyor		
	Bucket Elevator	ELE0003741	Elevator		
	Surge Bin	BIN0003743	Bin		
	Belt Conveyor Transfer Point	CNV0003744	Conveyor		
	Aspiration Baghouse D	POL0003287	Baghouse		

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	COATER 1E & 1G RECEIVING - REVERSIBLE	CNV0003198	Conveyor		
	COATER 1F & 1H RECEIVING - REVERSIBLE	CNV0003199	Conveyor		
	COATER 2E & 2G RECEIVING - REVERSIBLE	CNV0003273	Conveyor		
	COATER 2F & 2H RECEIVING - REVERSIBLE	CNV0003274	Conveyor		
EP31	Bin Vent Filter for Storage Bin 4380	POL0004324	Bin Vent Filter	000	Updated Bin number - 4380
	Bin Vent Filter for Storage Bin 3714	POL0004326	Bin Vent Filter	000	
	Pantleg Hopper 4372 Bin Vent Filter	POL0004373	Bin Vent Filter	000	
	Pantleg Hopper 4377 Bin Vent Filter	POL0004378	Bin Vent Filter	000	
	Filter Receiver (Perlite Fines Loadout)	POL0003842	Filter Receiver	N/A	
	Filter Receiver (Perlite Fines Loadout)	POL0003996	Filter Receiver	N/A	
	Filter Receiver (XP Perlite Baghouse)	POL0004535	Filter Receiver	N/A	
	Filter Receiver (XP Surge Bins 1-5)	POL0004532	Filter Receiver	N/A	
	Filter Receiver (XP Surge Bins 6-10)	POL0004538	Filter Receiver	N/A	
	Perlite Fines Loadout Air Vent Filter for Bin 4845	POL0004331	Filter Receiver	000	
EP33	Pickup Bin	BIN0003835	Bin		
	Raw Material Screen (Screener)	SCR0003834	Screen		

Attachment B
 Summary of Emission Points Affected by this Application
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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Surge Bin	BIN0003840	Bin		
	Belt Scale	BSC0003840	Scale		
	Enrober	ENR0003848	Enrober		
	COATER 1G	MIX0003862	COATER		
	COATER 2G	MIX0003863	COATER		
	COATER 1H	MIX0003881	COATER		
	COATER 2H	MIX0003882	COATER		
	SCREW CONVEYOR ON ASPIRATION BAGHOUSE	CNV0003894	Conveyor		
	Aspiration Baghouse E	POL0003893	Baghouse		
EP35	CO1 Rail Pit Conveyor Unload	CNV0004029	Belt Conveyor		
	CO1 Dust Collector	POL0004035	Filter Receiver		
	CO2 Field Conveyor	CNV0004030	Belt Conveyor		
	CO2 Dust Collector	POL0004036	Filter Receiver		
	CO3 Field Conveyor	CNV0004031	Belt Conveyor		
	CO3 Dust Collector	POL0004037	Filter Receiver		
	Weigh Belt	BSC0004034	Scale		
	CO4 Dust Collector	POL0004097	Filter Receiver		
	CO4 Storage Feed Conveyor	CNV0004032	Belt Conveyor		

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
EP36	Truck Unloading Spout Dust Collector	POL0003994	Dust Collector/ Fabric Filter		
EP40	Ore Preheater 1 - Natural Gas Combustion	DRY0004405	Preheater	N/A	AP-42 Natural Gas Combustion
EP41	Ore Preheater 2 - Natural Gas Combustion	DRY0004505	Preheater	N/A	AP-42 Natural Gas Combustion
EP42	Ore Preheater 3- Natural Gas Combustion	DRY0004605	Preheater	N/A	AP-42 Natural Gas Combustion
EP43	Ore Preheater 4 - Natural Gas Combustion	DRY0004705	Preheater	N/A	AP-42 Natural Gas Combustion
EP44	Ore Preheater 5 - Natural Gas Combustion	DRY0004805	Preheater	N/A	AP-42 Natural Gas Combustion
EP45	Ore Preheater 6 - Natural Gas Combustion	DRY0004455	Preheater	N/A	AP-42 Natural Gas Combustion
EP46	Ore Preheater 7 - Natural Gas Combustion	DRY0004555	Preheater	N/A	AP-42 Natural Gas Combustion
EP47	Ore Preheater 8 - Natural Gas Combustion	DRY0004655	Preheater	N/A	AP-42 Natural Gas Combustion
EP48	Ore Preheater 9 - Natural Gas Combustion	DRY0004755	Preheater	N/A	AP-42 Natural Gas Combustion
EP49	Ore Preheater 10 - Natural Gas Combustion	DRY0004855	Preheater	N/A	AP-42 Natural Gas Combustion
EP50	Ore Preheater	DRY0004405	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004404	Furnace	UUU	
	Perlite Separator	POL0004406	Bin	OOO	
	High Temperature Fines Baghouse	POL0004414	Baghouse	N/A	

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
EP51	Ore Preheater	DRY0004505	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004504	Furnace	UUU	
	Perlite Separator	POL0004506	Bin	OOO	
	High Temperature Fines Baghouse	POL0004514	Baghouse	N/A	
EP52	Ore Preheater	DRY0004605	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004604	Furnace	UUU	
	Perlite Separator	POL0004606	Bin	OOO	
	High Temperature Fines Baghouse	POL0004614	Baghouse	N/A	
EP53	Ore Preheater	DRY0004705	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004704	Furnace	UUU	
	Perlite Separator	POL0004706	Bin	OOO	
	High Temperature Fines Baghouse	POL0004714	Baghouse	N/A	
EP54	Ore Preheater	DRY0004805	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004804	Furnace	UUU	
	Perlite Separator	POL0004806	Bin	OOO	
	High Temperature Fines Baghouse	POL0004814	Baghouse	N/A	
EP55	Ore Preheater	DRY0004455	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004454	Furnace	UUU	
	Perlite Separator	POL0004456	Bin	OOO	
	High Temperature Fines Baghouse	POL0004464	Baghouse	N/A	
EP56	Ore Preheater	DRY0004555	Preheater	N/A	Use WebFIRE emission factor for perlite vertical
	Expander Furnace	DRY0004554	Furnace	UUU	

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Perlite Separator	POL0004556	Bin	OOO	furnace (19 lb/ton)
	High Temperature Fines Baghouse	POL0004564	Baghouse	N/A	
EP57	Ore Preheater	DRY0004655	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004654	Furnace	UUU	
	Perlite Separator	POL0004656	Bin	OOO	
	High Temperature Fines Baghouse	POL0004664	Baghouse	N/A	
EP58	Ore Preheater	DRY0004755	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004754	Furnace	UUU	
	Perlite Separator	POL0004756	Bin	OOO	
	High Temperature Fines Baghouse	POL0004764	Baghouse	N/A	
EP59	Ore Preheater	DRY0004855	Preheater	N/A	Use WebFIRE emission factor for perlite vertical furnace (19 lb/ton)
	Expander Furnace	DRY0004854	Furnace	UUU	
	Perlite Separator	POL0004856	Bin	OOO	
	High Temperature Fines Baghouse	POL0004864	Baghouse	N/A	
EP60	Expander Furnace 1 - XP Receiver (Cool Baghouse)	POL0004411	Baghouse	N/A	
EP61	Expander Furnace 2 - XP Receiver (Cool Baghouse)	POL0004511	Baghouse	N/A	
EP62	Expander Furnace 3 - XP Receiver (Cool Baghouse)	POL0004611	Baghouse	N/A	
EP63	Expander Furnace 4 - XP Receiver (Cool Baghouse)	POL0004711	Baghouse	N/A	
EP64	Expander Furnace 5 - XP Receiver (Cool Baghouse)	POL0004811	Baghouse	N/A	
EP65	Expander Furnace 6 - XP Receiver (Cool Baghouse)	POL0004461	Baghouse	N/A	
EP66	Expander Furnace 7 - XP Receiver (Cool Baghouse)	POL0004561	Baghouse	N/A	

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
EP67	Expander Furnace 8 - XP Receiver (Cool Baghouse)	POL0004661	Baghouse	N/A	
EP68	Expander Furnace 9 - XP Receiver (Cool Baghouse)	POL0004761	Baghouse	N/A	
EP69	Expander Furnace 10 - XP Receiver (Cool Baghouse)	POL0004861	Baghouse	N/A	
EP70	Incline Unloading Belt	CNV0004433	Conveyor	OOO	
	Ore Reversing Conveyor	CNV0004436	Conveyor	OOO	
	South Ore Bin	BIN0004437	Storage Bin	OOO	
	North Ore Bin	BIN0004441	Storage Bin	OOO	
	Reversing Belt Feeder	CNV0004440	Conveyor	OOO	
	Truck Loading Station		Truck	N/A	
	Screener	SCR0004444	Screen	OOO	
	Bank Ore Elevator	ELE0004484	Elevator	OOO	
	Ore Fines Surge Bin	BIN0004541	Bin	OOO	
	Fines Transfer Bin	BIN0004389	Bin	OOO	
	Surge Hopper	BIN0004448	Bin	OOO	
	Ore Shuttle Supply Weighbelt	CNV0004483	Conveyor	OOO	
	Bank Shuttle Conveyor	CNV0004485	Conveyor	OOO	
	Ore Surge Bin #1	BIN0004401	Bin	OOO	
	Ore Surge Bin #2	BIN0004501	Bin	OOO	
	Ore Surge Bin #3	BIN0004601	Bin	OOO	
	Ore Surge Bin #4	BIN0004701	Bin	OOO	
Ore Surge Bin #5	BIN0004801	Bin	OOO		
Ore Surge Bin #6	BIN0004451	Bin	OOO		

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Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Ore Surge Bin #7	BIN0004551	Bin	000	
	Ore Surge Bin #8	BIN0004651	Bin	000	
	Ore Surge Bin #9	BIN0004751	Bin	000	
	Ore Surge Bin #10	BIN0004851	Bin	000	
	Ore Weighbelt #1	BSC0004402	Conveyor	000	
	Ore Weighbelt #2	BSC0004502	Conveyor	000	
	Ore Weighbelt #3	BSC0004602	Conveyor	000	
	Ore Weighbelt #4	BSC0004702	Conveyor	000	
	Ore Weighbelt #5	BSC0004802	Conveyor	000	
	Ore Weighbelt #6	BSC0004452	Conveyor	000	
	Ore Weighbelt #7	BSC0004552	Conveyor	000	
	Ore Weighbelt #8	BSC0004652	Conveyor	000	
	Ore Weighbelt #9	BSC0004752	Conveyor	000	
	Ore Weighbelt #10	BSC0004852	Conveyor	000	
	Screw Conveyor	BSC0004633	Conveyor	000	
	Ore Aspiration Baghouse	POL0004632	Baghouse	N/A	
EP71	XP Screener #1	SCR0004409	Screen	000	
	XP Screener #2	SCR0004509	Screen	000	
	XP Screener #3	SCR0004609	Screen	000	
	XP Screener #4	SCR0004709	Screen	000	
	XP Screener #5	SCR0004809	Screen	000	
	XP Hopper for System #1	BIN0004416	Bin	000	

Attachment B
Summary of Emission Points Affected by this Application
Perlite Expander Project
Construction Permit Application
(fifteen pages)

Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Fines Weigh Belt Conveyor	BSC0004425	Conveyor	000	
	XP Hopper #1	BIN0004417	Bin	000	
	XP Hopper #2	BIN0004517	Bin	000	
	XP Hopper #3	BIN0004617	Bin	000	
	XP Hopper #4	BIN0004717	Bin	000	
	XP Hopper #5	BIN0004817	Bin	000	
	XP Furnace Reversing Weighbelt #1	BSC0004418	Conveyor	000	
	XP Furnace Reversing Weighbelt #2	BSC0004518	Conveyor	000	
	XP Furnace Reversing Weighbelt #3	BSC0004618	Conveyor	000	
	XP Furnace Reversing Weighbelt #4	BSC0004718	Conveyor	000	
	XP Furnace Reversing Weighbelt #5	BSC0004818	Conveyor	000	
	Expanded Perlite Fines Surge Bin #1	BIN0004416	Bin	000	
	Expanded Perlite Fines Surge Bin #2	BIN0004516	Bin	000	
	Expanded Perlite Fines Surge Bin #3	BIN0004616	Bin	000	
	Expanded Perlite Fines Surge Bin #4	BIN0004716	Bin	000	
	Expanded Perlite Fines Surge Bin #5	BIN0004816	Bin	000	
	Collection Conveyor	CNV0004490	Conveyor	000	
	XP Elevator	ELE0004491	Elevator	000	
	XP Bin Elevator	ELE0004496	Elevator	000	
	Bridge Conveyor	CNV0004497	Conveyor	000	
	West Storage Discharge Conveyor	CNV0004495	Conveyor	000	
	Screener (after storage discharge cnv)	SCR0004311	Screen	000	

Attachment B
 Summary of Emission Points Affected by this Application
 Perlite Expander Project
 Construction Permit Application
 (fifteen pages)

Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Storage Discharge Conveyor 2	CNV0004315	Conveyor	000	
	Screener (after storage discharge cnv)	SCR0004316	Screen	000	
	Reversing XP Conveyor	CNV0004492	Conveyor	000	
	XP Conveyor from existing railcar	CNV0004317	Conveyor	000	
	XP Conveyor	CNV0004318	Conveyor	000	
	Screw Conveyor	CNV0004642	Conveyor	000	
	Expanded Ore Aspiration Baghouse 1	POL0004641	Baghouse	N/A	
EP72	XP Screener #6	SCR0004459	Screen	000	
	XP Screener #7	SCR0004559	Screen	000	
	XP Screener #8	SCR0004659	Screen	000	
	XP Screener #9	SCR0004759	Screen	000	
	XP Screener #10	SCR0004859	Screen	000	
	XP Hopper #6	BIN0004467	Bin	000	
	XP Hopper #7	BIN0004567	Bin	000	
	XP Hopper #8	BIN0004667	Bin	000	
	XP Hopper #9	BIN0004767	Bin	000	
	XP Hopper #10	BIN0004867	Bin	000	
	XP Furnace Reversing Weighbelt #6	BSC0004468	Conveyor	000	
	XP Furnace Reversing Weighbelt #7	BSC0004568	Conveyor	000	
	XP Furnace Reversing Weighbelt #8	BSC0004668	Conveyor	000	
	XP Furnace Reversing Weighbelt #9	BSC0004768	Conveyor	000	
XP Furnace Reversing Weighbelt #10	BSC0004868	Conveyor	000		

Attachment B
Summary of Emission Points Affected by this Application
Perlite Expander Project
Construction Permit Application
(fifteen pages)

Emission Point No.	Description	Current Equipment ID	Equipment Type	Subject to NSPS?	Emission Factors
	Expanded Perlite Fines Surge Bin #6	BIN0004466	Bin	OOO	
	Expanded Perlite Fines Surge Bin #7	BIN0004566	Bin	OOO	
	Expanded Perlite Fines Surge Bin #8	BIN0004666	Bin	OOO	
	Expanded Perlite Fines Surge Bin #9	BIN0004766	Bin	OOO	
	Expanded Perlite Fines Surge Bin #10	BIN0004866	Bin	OOO	
	Collection Conveyor	CNV0004490	Conveyor	OOO	
	Screw Conveyor	CNV0004682	Conveyor	OOO	
	Expanded Ore Aspiration Baghouse 2	POL0004648	Baghouse	N/A	
EP73	Filter Receiver (Ore Baghouse Material)	POL0004543	Filter Receiver	N/A	
EP74	Central Vacuum System Filter Receiver	POL0004691	Filter Receiver	N/A	
EP75	North XP Storage Bin Vent 4493-Bin Vent	POL0004493	Bin Vent Filter	OOO	
	South XP Storage Bin Vent 4313-Bin Vent	POL0004313	Bin Vent Filter	OOO	

Attachment C Example Monthly Tracking Sheet Perlite Expander Project (two pages)

Attachment A - Monthly Combustion Emissions Tracking Record

Nestle Purina PetCare Company, Golden Products Division - Bloomfield, MO Plant
Stoddard County, S28, T27N, R11E
Permit Numbers: 072000-010, 032004-013, 052005-009, 102011-009A and (Project 2014-04-036)

Month, Year		Perlite Expander Banks								OPERATING PERMIT - PLANT TOTAL COMPLIANCE DEMONSTRATION										PERMIT 102011-009A COMPLIANCE DEMONSTRATION ⁽⁸⁾						
		DRYER #1231 (EP-5)			DRYER #1861 (EP-21)	DRYER #1864 (EP-23)	DRYER #3207 (EP-29)	Preheaters (EP40 - EP49)	Furnaces (EP50 - EP59)	Natural Gas Parameter	On-Spec Fuel Parameters		SOx Emissions		HCL Emissions		CO Emissions		NOx Emissions		GHG (CO2e) Emissions		SOx Emissions		NOx Emissions	
		Natural Gas Usage (MMscf)	#2 Fuel Oil Usage (gallons)	On-Spec (No.4) Fuel Usage (gallons)	Natural Gas Usage (MMscf)	Heat Content (MMBTU/Mscf)	Sulfur Weight %	Halogen Content (ppm)	Monthly ⁽¹⁾ (tons)	Running 12-month Total (tons)	Monthly ⁽²⁾ (tons)	Running 12-month Total (tons)	Monthly ⁽⁷⁾ (tons)	Running 12-month Total (tons)	Monthly ⁽³⁾ (tons)	Running 12-month Total (tons)	Monthly ⁽⁸⁾ (tonnes)	Running 12-month Total (tonnes)	Monthly ⁽¹⁾ (tons)	Running 12-month Total (tons)	Monthly ⁽³⁾ (tons)	Running 12-month Total (tons)				
										Limit < 0.7%	Limit < 1000 ppm		Limit < 95 tons		Limit < 9.5 tons		Limit < 95 tons		Limit < 95 tons		Limit < 95,000 tonnes		Limit < 40.24 tons		Limit < 80.44 tons	
Jan-15								1.008				0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0.000	0.000	0.000	0.000	
Feb-15												0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0.000	0.000	0.000	0.000	
Mar-15																										
Apr-15																										
May-15																										
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Dec-16																										

(1) Use Permit Condition SOx Emissions Equation
(2) Use Permit Condition HCl Emissions Equation
(3) Use Permit Condition NOx Emissions Equation
(4) Portable Heater gas usage is tracked through the main gas meter for Dryer 1231, which also uses the same emission factors.
(5) Construction Permit 2011-01-001 was issued in October 2011 (amended in November 2011) and includes emissions from Dryer #1231 and #3207 only.
(6) Gas usage for EL Dryer A was initially included with the main plant usage through the rotary dryer. The separate gas meter was functional in adfa.
(7) Use Permit Condition CO Emissions Equation
(8) Use Permit Condition Green House Gas Emissions Equation

Attachment C
 Example Monthly Tracking Sheet
 Perlite Expander Project
 (two pages)

EQUATION SHEET - COMBUSTION EMISSIONS CALCULATIONS

Purpose: To illustrate the calculations used in the Combustion Emissions tab of the Compliance Sheet.

1. SOx Emissions Equation

$$(\text{SOx emissions in tons}) = ((\text{Total Natural Gas Usage in MMSCF in Rotary Dryer, DRY1861, DRY1863, DRY3207 and all the Perlite Expander Preheaters and Furnaces} \cdot \text{EF1}) + (\text{Total \#2 Fuel Oil Usage in gal} \cdot \text{EF2} \cdot 0.05(\%S \text{ in fuel oil})) + (\text{Total \#4 Fuel Oil Usage in gal} \cdot \text{EF3} \cdot (\%S \text{ in fuel as reported by supplier})) / (2000 \text{ lbs/ton})$$

- where:
- EF1 = Emission Factor of Natural Gas from AP-42 Table 1.4-1 and 1.4-2
= 0.6 lbs/MMSCF
 - EF2 = Emission Factor of #2 Fuel Oil from AP-42 Table 1.3-1 (%S of #2 fuel oil is known at 0.05%)
= 0.142 lbs/gal
 - EF3 = Emission Factor of On-Spec #4 Fuel Oil from AP-42 Table 1.3-3 (the %S content of this type of fuel varies and needs to be inputted based on what is provided by the supplier)
= 0.15 lbs/gal

2. HCl Emissions Equation

$$(\text{HCl emissions in tons}) = (\text{Total \#4 Fuel Oil Usage in gal} \cdot \text{EF1}) / (2000 \text{ lbs/ton})$$

EF1 = Emission Factor of On-Spec #4 Fuel Oil from AP-42 Table 1.3-3
= 0.0066 lbs/gal

3. NOx Emissions Equation

$$(\text{NOx emissions in tons}) = ((\text{Natural Gas Usage in Rotary Dryer in MMSCF} \cdot \text{EF1}) + (\text{Aggregate Natural Gas Usage in Dryers \#1861, \#1863 and \#3207 and all the Perlite Expander Preheaters and Furnaces in MMSCF} \cdot \text{EF2}) + (\text{Total \#2 Fuel Oil Usage in gal} \cdot \text{EF3}) + (\text{Total \#4 Fuel Oil Usage in gal} \cdot \text{EF4})) / (2000 \text{ lbs/ton})$$

- where:
- EF1 = Emission Factor of Natural Gas of Rotary Dryer from AP-42 Table 1.4-1 and 1.4-2
= 0.140 lbs/MMSCF
 - EF2 = Emission Factor of Natural Gas from AP-42 Table 1.4-1 and 1.4-2
= 0.100 lbs/MMSCF
 - EF3 = Emission Factor of #2 Fuel Oil from AP-42 Table 1.3-1
= 0.024 lbs/gal
 - EF4 = Emission Factor of On-Spec #4 Fuel Oil from AP-42 Table 1.3-3
= 0.047 lbs/gal

7. CO Emissions Equation

$$(\text{CO emissions in tons}) = ((\text{Total Natural Gas Usage in MMSCF in Rotary Dryer, DRY1861, DRY1863, DRY3207 and all the Perlite Expander Preheaters and Furnaces} \cdot \text{EF1}) + (\text{Aggregate Natural Gas Usage in Dryers \#1861, \#1863 and \#3207 in MMSCF} \cdot \text{EF2}) + (\text{Total \#2 Fuel Oil Usage in gal} \cdot \text{EF3}) + (\text{Total \#4 Fuel Oil Usage in gal} \cdot \text{EF4})) / (2000 \text{ lbs/ton})$$

- where:
- EF1 = Emission Factor of Natural Gas of Rotary Dryer from AP-42 Table 1.4-1 and 1.4-2
= 84 lbs/MMSCF
 - EF2 = Emission Factor of Natural Gas from AP-42 Table 1.4-1 and 1.4-2
= 84 lbs/MMSCF
 - EF3 = Emission Factor of #2 Fuel Oil from AP-42 Table 1.3-1
= 5 lbs/gal
 - EF4 = Emission Factor of On-Spec #4 Fuel Oil from AP-42 Table 1.3-3
= 5 lbs/gal

8. Green House Gas Emissions Equation

$$(\text{CO2e emissions in metric tonnes}) = ((\text{Total Natural Gas Usage in MMSCF in Rotary Dryer, DRY1861, DRY1863, DRY3207 and all the Perlite Expander Preheaters and Furnaces} \cdot 1000 \cdot \text{Heating Value of Natural Gas} \cdot \text{EF1}) + (\text{Total \#2 Fuel Oil Usage in gal} \cdot \text{EF2})) / (1000 \text{ kg/tonne})$$

- where:
- EF1 = Aggregate Emission Factor of Natural Gas
= EF CO2 * Global Warming Potential CO2 + EF CH4 * Global Warming Potential CH4 + EF N2O * Global Warming Potential N2O
= 53.02+(0.001*21)+(0.0001*310)
= 53.072 kg/MMBTU
 - EF2 = Aggregate Emission Factor of Fuel Oil
= EF CO2 * Global Warming Potential CO2 + EF CH4 * Global Warming Potential CH4 + EF N2O * Global Warming Potential N2O
= 73.96+(0.003*21)+(0.0006*310)
= 74.209 kg/MMBTU

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	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	tph	tons per hour
hr	hour	tpy	tons per year
hp	horsepower	VMT	vehicle miles traveled
lb	pound	VOC	Volatile Organic Compound
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Keith Harris
Plant Engineering Manager
Nestle' Purina PetCare Company, Golden Products Division
22450 East State Hwy Y
Bloomfield, MO 63825

RE: New Source Review Permit - Project Number: 2014-04-036

Dear Mr. Harris:

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, contact Randy Raymond, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:rrl

Enclosures

c: St. Louis Regional Office
PAMS File: 2014-04-036

Permit Number:.