

STATE OF MISSOURI



**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI AIR CONSERVATION COMMISSION

**PERMIT TO CONSTRUCT**

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

Permit Number: **092013-009**      Project Number: 2013-04-086  
 Installation Number: 097-0094

Parent Company: TAMKO Building Products, Inc.

Parent Company Address: P.O. Box 1404, Joplin, MO 64802

Installation Name: TAMKO Building Products, Inc.

Installation Address: 3001 Newman Road, Joplin, MO 64801

Location Information: Jasper County, S31, T28N, R32W

Application for Authority to Construct was made for:

The removal of a software restriction that will increase the maximum design rate for the honeycomb dryer. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

**SEP 11 2013**

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."*

TAMKO Building Products, Inc.  
Jasper County, S31, T28N, R32W

1. HAP Emission Limitations
  - A. TAMKO Building Products, Inc. shall emit less than 2.0 tons of formaldehyde in any consecutive 12-month period from the honeycomb dryer (EU0060).
  - B. Attachment A, or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A. The formaldehyde emission factors determined from the performance tests required in Special Condition 3.A. shall be used to track the formaldehyde emissions in the Attachments.
2. Control Device Operational Requirements – Regenerative Thermal Oxidizer (RTO) with Pre-filter
  - A. TAMKO Building Products, Inc. is permitted to operate the honeycomb dryer both with and without using the RTO to control emissions. When the RTO is being used, it shall be operated and maintained in accordance with the manufacturer's specifications. The pre-filter is considered part of the RTO and shall also be operated and maintained in accordance with the manufacturer's specifications. A copy of the manufacturer's specifications shall be kept onsite.
  - B. The minimum operating temperature (°F) of the RTO shall be established from the most recent stack test as required in Special Condition 3.A. The temperature shall be continuously monitored and recorded during operations. The monitoring equipment shall be located such that the Department of Natural Resources employees may easily observe them. The acceptable minimum temperature is re-established when a new set of performance test is conducted and the results accepted by the Air Pollution Control Program.

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### SPECIAL CONDITIONS:

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

- C. TAMKO Building Products, Inc. shall maintain an operating and maintenance log for the RTO which shall include the following:
  - 1) Incidents of malfunction, with impacts on emissions, duration of event, probable cause, and corrective actions;
  - 2) Maintenance activities, with inspection schedules, repair actions, replacements, and etc.; and
  - 3) The date and time that the RTO is being used to control emissions from the honeycomb dryer and the date and time that the RTO is not being used.
  
- 3. Performance Testing Requirements
  - A. TAMKO Building Products, Inc. shall perform stack testing to determine the formaldehyde emission factors (in pounds of formaldehyde per ton of fiberglass processed) from the honeycomb dryer with and without the use of the regenerative thermal oxidizer (RTO). These emission factors shall be used to track the formaldehyde emissions as required in Special Condition 1.B. to show compliance with the formaldehyde emission limit in Special Condition 1.A.
  
  - B. The stack tests required in Special Condition 3.A shall be performed once every five (5) years or upon replacement of a permanent binder with a higher formaldehyde content. TAMKO Building Products, Inc. last performed the stack tests on February 25, 2009. New tests shall be performed between 60 days before and 60 days after five (5) years from the date of the most recent test, or within 60 days after replacement of a permanent binder with a higher formaldehyde content.
  
  - C. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program at least 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.

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**SPECIAL CONDITIONS:**

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

- D. Any required performance tests shall be conducted during periods of representative conditions and shall be conducted at the maximum process rate or within ten percent (10%) of this rated capacity, not to include periods of start-up, shutdown, or malfunction. If the tests are not performed within ten percent (10%) of the maximum process rate, then ten percent (10%) within the tested rate would become the new maximum process rate.
  - E. Two copies of a written report 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.
  - F. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations. The test report shall establish the minimum operating temperature (°F) for the RTO.
4. Installation-Wide Potential-to-Emit Determination  
TAMKO Building Products, Inc. shall submit installation-wide potential-to-emit (PTE) calculations for all pollutants with the next operating permit submittal as supporting documentation. An amendment to the installation's Part 70 Operating Permit Application is required within one year of the software change.
5. Record Keeping and Reporting Requirements
- A. TAMKO Building Products, Inc. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.
  - B. TAMKO Building Products, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

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

Project Number: 2013-04-086  
Installation ID Number: 097-0094  
Permit Number:

TAMKO Building Products, Inc.  
3001 Newman Road  
Joplin, MO 64801

Complete: April 23, 2013

Parent Company:  
TAMKO Building Products, Inc.  
P.O. Box 1404  
Joplin, MO 64802

Jasper County, S31, T28N, R32W

REVIEW SUMMARY

- TAMKO Building Products, Inc. has applied for authority to remove a software restriction that will increase the maximum design rate of the honeycomb dryer (EP9-2) from 3.8 to 4.8 tph.
- HAP emissions are expected from the proposed equipment. The HAP of concern from this process is formaldehyde.
- None of the New Source Performance Standards (NSPS) apply to the honeycomb dryer. However, there are NSPS that apply to other equipment at the installation. A summary of these NSPS can be found in the installation's operating permit.
- None of the currently promulgated MACT regulations apply to the honeycomb dryer. However, some of the MACT does apply to other equipment at the installation. A summary of these MACT can be found in the installation's operating permit.
- None of the NESHAPs apply to this installation.
- A regenerative thermal oxidizer (RTO), originally permitted in Permit No. 112000-012, will be used to control emissions from the honeycomb dryer part of the time.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Conditioned potential emissions of all pollutants are below de minimis levels.
- This installation is located in Jasper 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 either below de minimis levels or conditioned below the SMAL.
- Emissions testing is required for the equipment as a condition in this permit.
- The facility is required to submit an amendment to its Part 70 Operating Permit Application within one (1) year of the software change.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

TAMKO Building Products, Inc. manufactures roofing products and includes such processes and products as felt mat, glass mat, asphalt coatings, and saturates. The installation is composed of four main operations: refinery, fiberglass mat manufacturing, felt mill no. 1, and felt mill no. 2. The facility is considered a major source for operating permits and a Part 70 Operating Permit was issued to the facility in 2009 (Permit No. OP2009-002).

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

**Table 1: Permit History**

Permit Number	Description
0393-012	Replacing blow still tanks
0594-032	Modifications to the fiberglass mat line
0496-004	25.2 MMBtu/hr natural gas-fired boiler
112000-012	RTO installation
062001-004	Replacing thermal oxidizer
052010-008	Refinery process change
102010-007	Installation of two new 25.2 MMBtu/hr natural gas-fired boilers, which will replace three existing boilers, and the replacement of three tank heater burners
052010-008A	Amending Permit 052010-008 to account for recent stack test
072012-012	Installation of chopper and blower system for the fiberglass mat trim

In Permit No. 112000-012, the facility was labeled a major source under construction permits. However, in Permit No. 102010-007, the status of the facility was changed to being a minor source. During the review for Permit No. 102010-007, no installation-wide PTE calculations were performed, so while it is believed that this facility is currently a minor source for construction permits, this cannot be verified. Therefore, the facility shall, when it submits an amendment for its current Part 70 Operating Permit Application, submit an installation-wide PTE calculation to verify that the facility is a minor source for construction permits.

Conditioned potential emissions of all pollutants in this project are less than their respective *de minimis* levels. As such, the type of permit that should be issued to the facility for this project is not affected by the installation's status as either a minor or a major source.

## PROJECT DESCRIPTION

TAMKO Building Products, Inc. uses a honeycomb dryer (EU0060) fired by natural gas to cure fiberglass mats. The installation proposes to remove a software restriction that will increase the maximum hourly design rate of the dryer from 3.8 tons per hour to 4.8 tons per hour. An RTO, originally permitted in Permit No. 112000-012, will be used only part of the time to control the VOC and formaldehyde emissions from the honeycomb dryer.

According to the company, the increase in the maximum hourly design rate of the honeycomb will not affect upstream equipment. The amount of chemicals used in equipment such as the saturator and the deltaformer does not need to be increased to accommodate the additional fiberglass mats. The project would, however, increase emissions from the extra cutting and trimming performed downstream. Product hauling would also be affected.

The most recent operating permit issued to the facility (OP2009-002) requires that the facility perform stack tests on the RTO to determine its control efficiency for formaldehyde. The test is to be performed every five (5) years or whenever the facility replaces a binder with one that has higher formaldehyde content. The testing requirements are now included in this construction permit. However, the conditions have been reworded. The facility is now required to limit its formaldehyde emissions from the dryer to less than 2.0 tons per year. Therefore, instead of requiring the facility to test for a specific efficiency, the facility is now required to test for the formaldehyde emissions with and without the use of an RTO and to derive emission factors from the emissions data. The emission factors shall then be used to track the formaldehyde emissions to show compliance with the 2.0 tons per year limit.

A pre-filter is used upstream of the RTO to limit the amount of particulate matter entering the RTO. A differential pressure gauge is used to measure the pressure across the pre-filter to indicate when the filter must be changed. This pre-filter is considered part of the RTO and shall be operated and maintained according to the manufacturer's specifications.

## EMISSIONS/CONTROLS EVALUATION

Pollutants of concern from this project are formaldehyde and particulates from the drying of the fiberglass mats, particulates from the trimming of the mats, and particulates from haul roads. Emissions of formaldehyde, which is also a VOC, from the honeycomb dryer (EU0060) were calculated using data from a stack test performed in 2009. The facility uses a regenerative thermal oxidizer (RTO) to control formaldehyde emissions from the dryer most of the time. However, the facility also operates a small

number of hours each year without using the RTO. Therefore, the uncontrolled emission factor was used to calculate the formaldehyde emissions. The uncontrolled emissions are calculated to be 130.3 tons per year, which is greater than the Screening Model Action Level (SMAL) of 2.0 tons per year. In order to avoid modeling requirements, the facility has elected to take a 2.0 tons per year formaldehyde limit on the honeycomb dryer. Attachment A shall be used to maintain compliance with this limit. The emission factor used in Attachment A shall be taken from the most recent stack test accepted by the Air Pollution Control Program.

PM<sub>2.5</sub>, PM<sub>10</sub> and PM emissions from mat trimming are controlled by a dust collector and emissions were calculated using the manufacturer's emissions guarantee of 0.002 gr/dscf. Based on the design of the system, it is believed that 100 percent of the emissions from the trim choppers would be captured and controlled by the baghouse. The choppers are fully enclosed and a blower is used to send the fiberglass scraps to a cyclone separator. The finer particles would be blown out through the top of the cyclone to the baghouse while the larger pieces would fall to the bottom and be sent to a baler.

All of the hauling occur on paved roads and therefore, PM<sub>2.5</sub>, PM<sub>10</sub>, and PM emissions from the haul roads were calculated using emission factors calculated from the equations in Environmental Protection Agency (EPA) document AP-42, *Compilation of air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, Chapter 13.2.1, *Paved Roads*, (1/2011).

The fact that there is a pre-filter in the RTO shows that there are particulates being emitted through the vent of the dryer. PM<sub>2.5</sub>, PM<sub>10</sub> and PM emissions from the dryer were calculated using emission factors in AP-42, Chapter 11.13, *Glass Fiber Manufacturing*, (9/85).

Normally, to calculate particulate and VOC emissions increase from a project, the actual emissions from a previous two year period would be subtracted from the potential emissions. However, the conditioned potential emissions for PM<sub>2.5</sub>, PM<sub>10</sub> and PM are already below the regulatory *de minimis* levels because the facility has elected to take a formaldehyde (a VOC and a HAP) limit of 2.0 tons per year. Therefore, subtracting the actual emissions is not necessary since it would not change the type of permit issued for this project.

The following table provides an emissions summary for this project. Existing potential emissions were not determined. Existing actual emissions were taken from the installation's 2012 EIQ. Potential emissions of the application assume continuous operations (8760 hours per year).

**Table 2: Emissions Summary (tons per year)**

<b>Pollutant</b>	<b>Regulatory De Minimis Levels</b>	<b>Existing Potential Emissions</b>	<b>Existing Actual Emissions (2011 EIQ)</b>	<b>Potential Emissions of the Application</b>	<b>New Project Conditioned Potential</b>
PM	25.0	N/D	N/D	26.03	0.40
PM <sub>10</sub>	15.0	N/D	22.76	25.50	0.39
PM <sub>2.5</sub>	10.0	N/D	N/D	25.40	0.39
SOx	40.0	N/D	47.94	N/A	N/A
NOx	40.0	N/D	29.05	N/A	N/A
VOC	40.0	N/D	31.03	N/A	N/A
CO	100.0	N/D	72.36	N/A	N/A
HAPs	10.0/25.0	N/D	2.72	130.34	<2.0
Formaldehyde	<sup>1</sup> 2.0	N/D	N/D	130.34	<2.0

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

Note 1: Screening Model Action level (SMAL)

### PERMIT RULE APPLICABILITY

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

### APPLICABLE REQUIREMENTS

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

### GENERAL REQUIREMENTS

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

## 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.

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Chia-Wei Young  
New Source Review Unit

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated April 19, 2013, received April 23, 2013, designating TAMKO Building Products, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Stack Test Report, NPN Environmental Engineers, Inc., April, 2009.



## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	..... National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SIC</b> .....	Standard Industrial Classification
<b>GHG</b> .....	Greenhouse Gas	<b>SIP</b> .....	State Implementation Plan
<b>gpm</b> .....	gallons per minute	<b>SMAL</b> .....	Screening Model Action Levels
<b>gr</b> .....	grains	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>HAP</b> .....	Hazardous Air Pollutant	<b>tph</b> .....	tons per hour
<b>hr</b> .....	hour	<b>tpy</b> .....	tons per year
<b>hp</b> .....	horsepower	<b>VMT</b> .....	vehicle miles traveled
<b>lb</b> .....	pound	<b>VOC</b> .....	Volatile Organic Compound
<b>lbs/hr</b> .....	pounds per hour		
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Mr. Dan Hollingshead  
General Manager  
TAMKO Building Products, Inc.  
3001 Newman Road  
Joplin, MO 64801

RE: New Source Review Permit - Project Number: 2013-04-086

Dear Mr. Hollingshead:

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 with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

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

Sincerely,

**AIR POLLUTION CONTROL PROGRAM**

Susan Heckenkamp  
New Source Review Unit Chief

SH:cyl

Enclosures

c: Southwest Regional Office  
PAMS File: 2013-04-086

Permit Number: