



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: 122015-002

Project Number: 2015-09-066
Installation Number: 027-0054

Parent Company: Christensen Asphalt

Parent Company Address: P.O. Box 159, Kingdom City, MO 65262

Installation Name: Christensen Asphalt

Installation Address: 2505 County Road 269, Columbia, MO 65202

Location Information: Callaway County (S11, T48N, R11W)

Application for Authority to Construct was made for:

Switching the burner fuel in the aggregate drying and heating process between No. 4 fuel oil/diesel and propane, and installing an 18,000 gallon propane tank. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

Prepared by
Ryan Schott
New Source Review Unit

Director or Designee
Department of Natural Resources

DEC 01 2015

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of 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.

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."

Christensen Asphalt
Callaway County (S11, T48N, R11W)

1. NO_x Emission Limitation
 - A. Christensen Asphalt shall emit less than 40.0 tons of NO_x in any consecutive 12-month period from their burner (EP-02).
 - B. Attachment A or an equivalent form, such as an electronic form approved by the Air Pollution Control Program, shall be used to demonstrate compliance with Special Condition 1.A.
2. Fuel Requirement
 - A. Christensen Asphalt shall burn either propane or fuel oil with a sulfur content less than or equal to 0.30% by weight in their burner (EP-02).
 - B. Christensen Asphalt shall demonstrate compliance with Special Condition 2.A. by obtaining records of the fuel's sulfur content from the vendor for each shipment of fuel received or by testing each shipment of fuel for the sulfur content in accordance with the method described in 10 CSR 10-6.040 *Reference Methods*. No records need to be obtained and no testing is required for propane.
3. Record Keeping and Reporting Requirements
 - A. Christensen Asphalt shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
 - B. Christensen Asphalt shall report to the Air Pollution Control Program's Compliance/ Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2015-09-066
Installation ID Number: 027-0054
Permit Number:

Installation Address:

Christensen Asphalt
2505 County Road 269
Columbia, MO 65202
Callaway County (S11, T48N, R11W)

Parent Company:

Christensen Asphalt
P.O. Box 159
Kingdom City, MO 65262

REVIEW SUMMARY

- Christensen Asphalt has applied for authority to switch the burner fuel in the aggregate drying and heating process between No. 4 fuel oil/ diesel and propane, and install an 18,000 gallon propane tank.
- The application was deemed complete on October 22, 2015.
- HAPs of concern from this process only include combustion emissions.
- 40 CFR 60 Subpart I, *Standards of Performance for Hot Mix Asphalt Facilities*, applies to the facility.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- No new air pollution control devices are being used with the modified equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO_x, and subsequently all other pollutants, are conditioned below de minimis levels.
- This installation is located in Callaway 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 counted toward major source applicability.
- Emissions testing is not required for the equipment.
- Submittal of an amendment to your Basic Operating Permit is required within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Christensen Asphalt operates a stationary asphalt plant in Callaway County. The plant is capable of producing 300 tons of asphalt per hour, and it is located 200 feet from the nearest property boundary. Asphalt is produced at this plant as follows: Virgin aggregate is proportionally distributed from a series of six bins onto a single conveyor traveling through a scalping screen, then onto a rotating dryer drum. A propane fired 120 MMBtu/hr burner drives the moisture from the aggregate and heats it to proper mixing temperature. Recycled asphalt pavement (RAP) is added to the mixture through an inlet located in the middle of the drum. The RAP arrives at this inlet from a dedicated conveyor system with a scalping screen. After liquid asphalt injection, everything is mixed prior to being discharged into a conveyor chain that delivers the mixture to a storage silo. A baghouse helps draw the burner flame into the drum and control particulate matter emissions.

The following New Source Review permits have been issued to Christensen Asphalt from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
062003-009	Installation of a new stationary asphalt plant (superseded)
022004-001	Re-permitted original asphalt plant (superseded)
022004-012	Re-permitted original asphalt plant
022004-012A	Concurrent operation production decrease
022004-012B	Recycled asphalt shingles and reclaimed asphalt pavement

PROJECT DESCRIPTION

Christensen Asphalt is requesting to switch the burner fuel used in the aggregate drying and heating process from currently used No. 4 fuel oil & diesel to propane. Christensen Asphalt would like to retain the freedom to switch between any of these fuels, if need be. In order to switch fuels, the fuel atomization nozzle within the existing burner will be changed, and an 18,000 gallon propane tank will be installed, along with connective piping. No other changes will be made to the existing facility, and this change will not affect the maximum design rate of the asphalt plant. Potential emissions are not expected to increase.

EMISSIONS/ CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, Section 1.3 *Fuel Oil Combustion* (May 2010) and Section 1.5 *Liquefied Petroleum Gas Combustion* (July 2008). The sulfur content of each fuel was taken from the EPA sponsored article, *A National Methodology and Emission Inventory for Residential Fuel Combustion*. Because the sulfur content of commercially available propane is extremely low, no special condition requiring a limit on the sulfur content of propane is warranted in this permit.

The following table provides an emissions summary for this project. Existing potential emissions were taken from the previously issued construction permit 022004-012. Existing actual emissions were taken from the installation's 2014 EIQ. Potential emissions of the application represent the highest potential emissions of each type of fuel burned in the modified equipment, assuming continuous operation (8,760 hours per year). Conditioned potential emissions account for a voluntary NO_x de minimis limit.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Application	New Project Conditioned Potential Emissions
PM	25.0	N/D	N/D	25.37	5.96
PM ₁₀	15.0	30.1	2.10	25.37	5.96
PM _{2.5}	10.0	N/D	0.15	25.37	5.96
SO _x	40.0	N/D	0.57	54.37	12.77
NO _x	40.0	N/D	2.87	170.37	<40.0
VOC	40.0	N/D	2.30	5.74	3.08
CO	100.0	N/D	6.84	43.08	23.08
Total HAPs	25.0	N/D	N/D	5.74	3.08

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 NO_x, and subsequently all other pollutants, are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Christensen Asphalt shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Operating Permits*, 10 CSR 10-6.065

- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Hot Mix Asphalt Facilities*, 40 CFR Part 60, Subpart I

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 24, 2015, received September 28, 2015, designating Christensen Asphalt as the owner and operator of the installation.

Attachment A – NO_x Compliance Worksheet

Christensen Asphalt
 Callaway County (S11, T48N, R11W)
 Project Number: 2015-09-066
 Permit Number: _____

This sheet covers the period from _____ to _____.
 (month, year) (month, year)

Month	Fuel Type	Fuel Usage (gal)	Emission Factor (lb/gal)	Monthly Emissions ¹ (lbs)	Monthly Emissions ² (tons)	Total Monthly Emissions ³ (tons)	12-Month Total Emissions ⁴ (tons)
<i>Example</i>	<i>Propane</i>	<i>25,000</i>	<i>0.013</i>	<i>325</i>	<i>0.325</i>	<i>2.100</i>	<i>25.20</i>
	<i>Diesel</i>	<i>25,000</i>	<i>0.024</i>	<i>600</i>	<i>0.600</i>		
	<i>No. 4 Fuel Oil</i>	<i>25,000</i>	<i>0.047</i>	<i>1,175</i>	<i>1.175</i>		
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				
	Propane		0.013				
	Diesel		0.024				
	No. 4 Fuel Oil		0.047				

¹ Multiply the monthly fuel usage by the emission factor for each fuel used
² Divide the monthly emissions (lbs) by 2,000
³ Add the monthly emissions of each fuel type
⁴ Add the total monthly emissions (tons) to the sum of the total monthly emissions (tons) from the previous 11 months. A total of less than **40.0** tons is necessary for compliance.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Andrew Christensen
Quality Control
Christensen Asphalt
P.O. Box 159
Kingdom City, MO 65262

RE: New Source Review Permit - Project Number: 2015-09-066

Dear Mr. Christensen:

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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by, Administrative Hearing Commission, Truman State Office Building, P.O. Box 1557, Jefferson City, MO, www.aa.mo.gov/ahc. If you have questions regarding this permit, contact Ryan Schott, Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:rs1

Enclosures

c: Northeast Regional Office
PAMS File: 2015-09-066
Permit Number: