

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: 042016-008

Project Number: 2016-02-027
Installation Number: 179-0006

Parent Company: The Doe Run Company

Parent Company Address: 1801 Park 270 Drive, St. Louis, MO 63146

Installation Name: Doe Run Company - Fletcher Mine/Mill

Installation Address: Highway TT, Viburnum, MO 65566

Location Information: Reynolds County, S24, T32N, R2W

Application for Authority to Construct was made for:

The installation of an underground screen, conveyor and engine. The MHDR of the screen is 350 ton per hour. 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.

Handwritten signature of Daronn A. Williams in black ink.

Prepared by
Daronn A. Williams
New Source Review Unit

Handwritten signature of Kyra L. Moore in black ink.

Director or Designee
Department of Natural Resources

Handwritten date "April 11, 2016" in black ink.

Effective Date

STANDARD CONDITIONS:

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

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

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

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

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

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

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

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Doe Run Company - Fletcher Mine/Mill
Reynolds County, S24, T32N, R2W

1. Lead Emission Limitations
 - A. Doe Run Company - Fletcher Mine/Mill shall emit less than 0.01 tons of lead in any consecutive 12-month period from EP-40 (screen) and EP-42 (conveyor).
 - 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 Conditions 1.A.
2. Lead Concentration Limitation
 - A. The Doe Run Company - Fletcher Mine/Mill shall not process rock with more than 3.0% lead content in the screen (EP-40).
 - B. To show compliance with Special Condition 2.A., Doe Run Company - Fletcher Mine/Mill shall retain copies of the geologists' face grade sheet indicating lead content from each shot of rock processed by the screen. These sheets shall be kept onsite and be made available to Missouri Department of Natural Resources' personnel upon request.
3. Record Keeping and Reporting Requirements
 - A. Doe Run Company - Fletcher Mine/Mill 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.
 - B. Doe Run Company - Fletcher Mine/Mill 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: 2016-02-027
Installation ID Number: 179-0006
Permit Number:

Installation Address:

Doe Run Company - Fletcher Mine/Mill
Highway TT
Viburnum, MO 65566

Parent Company:

The Doe Run Company
1801 Park 270 Drive
St. Louis, MO 63146

Reynolds County, S24, T32N, R2W

REVIEW SUMMARY

- Doe Run Company - Fletcher Mine/Mill has submitted an Application for Authority to Construct to install an underground screen, conveyor and engine. The screen is rated with a MHDR of 350 ton per hour.
- The application was deemed complete on February 11, 2016.
- HAP emissions are expected from the proposed equipment. The HAP of concern from this process is lead.
- 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applies to the engine (EP-41) of this project.
- 40 CFR 63, Subpart ZZZZ, *National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* applies to the engine (EP-41) of this project.
- 40 CFR 60, Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants*, and 40 CFR 60, Subpart LL, *Standards of Performance for Metallic Mineral Processing Plants*, do not apply to the equipment of this project because it will be located underground.
- No air pollution control equipment is being used in association with the new equipment
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below their respective de minimis levels. A construction permit is required because PM₁₀ potential emissions are above its insignificant level of 1.0 pound per hour and lead potential emissions is above the SMAL of 0.01 tons per year.

- This installation is located in Reynolds County. A part of Reynolds County is considered nonattainment for lead. However, Doe Run Company’s Fletcher Mine/Mill is located in the attainment/unclassifiable area of Reynolds Count, per the department’s Lead Designation and Boundary Recommendation, which was adopted by the Missouri Air Conservation Commission on December 3, 2009.
- 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 the conditioned potential emissions of lead are below the SMAL.
- Emissions testing is not required for the equipment.
- A Basic Operating Permit application is required for this installation within 30 days of commencement of operations.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Doe Run Company’s Fletcher Mine/Mill is a metallic mineral processing plant consisting of an underground lead ore mine and a surface ore-concentrating mill. The installation is a minor source for construction permits and a basic source for operating permits. All particulate emissions from this site are fugitive. Because this installation is not a named source, fugitive emissions that are not HAPs are not counted toward Title V applicability. However, since the installation’s potential lead emissions are over its de minimis level and less than 100.0 tons per year, a basic operating permit is required. As a result, this installation operates under a basic operating permit (Project Number 2014-05-056).

Most construction at this site was performed before May 13, 1982 and is therefore considered “grandfathered” for construction permit purposes. However, the following New Source Review permits have been issued to Doe Run Company - Fletcher Mine/Mill from the Air Pollution Control Program for activities that has triggered construction permitting.

Table 1: Permit History

Permit Number	Description
0696-009	Installation of a concrete plant
1096-014	Installation of underground crushing equipment
052015-002	Installation of underground screening equipment

PROJECT DESCRIPTION

Doe Run Company - Fletcher Mine/Mill has submitted an Application for Authority to Construct to install an underground screen (EP-40), conveyor (EP-42) and engine (EP-41). The screen is rated with a MHDR of 350 ton per hour.

The screen will be used to sort waste rock with ore content too low to be used for production, and the waste rock will be placed on the underground haul roads for maintenance. This equipment is being installed in place of the equipment referenced in construction permit 052015-002.

EMISSIONS/CONTROLS EVALUATION

PM_{2.5}, PM₁₀ and PM emissions of this project were calculated using emission factors developed from an emission test conducted by TRC Environmental Corporation at the Westfork Mine, which is operated by ASARCO near Bunker, Missouri. This emission test was approved by the program's Enforcement Section on December 16, 1997. The test only provided an emission factor for PM emissions, so it was conservatively assumed that all PM is also PM_{2.5} and PM₁₀. Lead emissions were calculated by multiplying the PM emissions by the maximum lead content in the rock. The facility estimates that the highest lead content in the rock will be less than 3.0%. The geologists at the mine will grade each shot of rock. Because it is expected that the crushed waste rock of this project will be spread on the underground mine floor shortly after being crushed and will not remain stockpiled for an extended period of time or hauled long distances, stockpile and haul road emissions were not included in the potential emissions of the application.

PM, NO_x, and CO engine emissions were calculated using tier-rated emission factors from 40 CFR 89 and 40 CFR 1039 (Tier 2, 2007 model year). PM₁₀, SO_x, and VOC engine emission were calculated from emission factors from United States Environmental Protection Agency (EPA) document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42), Section 3.3. Since there were no PM_{2.5} emission factor available, PM_{2.5} emissions were assumed to be the same as PM₁₀.

The following table provides an emissions summary for this project. Because the emission sources referenced in construction permit 052015-002 were not installed, existing potential emissions were taken from the installation's permit applicability determination, Project Number 2014-11-023 (issued on April 30, 2014). Existing actual emissions were taken from the installation's 2014 EIQ. Potential emissions of the project represent the potential of the new screen, conveyor and engine, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tpy)

Pollutant	<i>De Minimis</i> Levels/ SMAL	Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	144.27	N/D	13.23	0.34
PM ₁₀	15.0	144.27	30.04	13.87	0.36
PM _{2.5}	10.0	144.27	4.52	13.87	0.36
SOx	40.0	1.24	N/D	0.85	0.02
NOx	40.0	20.30	N/D	5.14	0.13
VOC	40.0	4.33	2.71	1.03	0.03
CO	100.0	52.78	N/D	3.39	0.09
Lead	0.6/0.01 ^a	6.01	0.83	0.39	< 0.01 ^b
HAPs	10.0/25.0	6.01	0.07	0.39	0.01

N/A = Not Applicable

^a The Screening Model Action Level (SMAL) of lead is 0.01 tons per year.

^b This permit only requires the tracking of lead emissions of this project.

A construction permit is required because PM₁₀ potential emissions are above its insignificant level of 1.0 pound per hour and lead potential emissions is above the SMAL of 0.01 tons per year.

Table 3: Emissions Summary (pounds per hour)

Pollutant	Insignificant Levels ^a	Potential Emissions of the Application
PM	N/D	3.02
PM ₁₀	1.0	3.17
PM _{2.5}	N/D	3.17
SOx	2.75	0.19
NOx	2.75	1.17
VOC	2.75	0.23
CO	6.88	0.77

N/D = Not Determined

^a Insignificant levels per 10 CSR 10-6.061(3)(A)3.A.

Doe Run Company - Fletcher Mine/Mill submitted emission calculations with this application. These calculations were confirmed and were used during the review of this project.

PERMIT RULE APPLICABILITY

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

APPLICABLE REQUIREMENTS

Doe Run Company - Fletcher Mine/Mill 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

- *New Source Performance Regulations, 10 CSR 10-6.070*
 - 40 CFR 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"
- *MACT Regulations, 10 CSR 10-6.075*
 - 40 CFR 63 Subpart ZZZZ, "National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"
- *Control of Sulfur Dioxide Emissions, 10 CSR 10-6.261*

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 February 2, 2016, received February 11, 2016, designating The Doe Run Company as the owner and operator of the installation.

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		

Ms. Margaret Crocker
EHS Analyst
Doe Run Company
Fletcher Mine/Mill
P.O. Box 500
Viburnum, MO 65566

RE: New Source Review Permit - Project Number: 2016-02-027

Dear Ms. Crocker:

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

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the Administrative Hearing Commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the Administrative Hearing Commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the Administrative Hearing Commission. You may contact the Administrative Hearing Commission by writing to them at the United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, or by phone at (573) 751-2422 or by fax at (573) 751-5018. The website for the Administrative Hearing Commission is www.oa.mo.gov/ahc.

Ms. Margaret Crocker
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If you have any questions regarding this permit, please do not hesitate to contact Daronn A. Williams, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by phone 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:dwd

Enclosures

c: Southeast Regional Office
PAMS File: 2016-02-027

Permit Number: