

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: 102014-007

Project Number: 2014-06-045
Installation Number: 127-0037

Parent Company: The Knapheide Manufacturing Company

Parent Company Address: Highway 24, West Quincy, MO 63471

Installation Name: The Knapheide Manufacturing Company

Installation Address: Highway 24, West Quincy, MO 63471

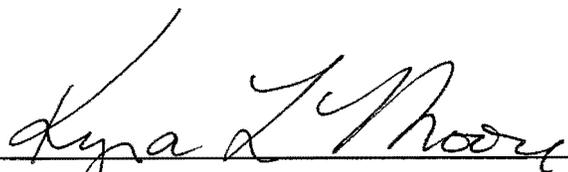
Location Information: Marion County, S10, T59N, R5W

Application for Authority to Construct was made for:
Installation of a new paint booth (EP-20). 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.

OCT - 7 2014

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 start up 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 start up 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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Project No.	2014-06-045

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."

The Knapheide Manufacturing Company
Marion County, S10, T59N, R5W

1. VOC Emission Limitation
 - A. The Knapheide Manufacturing Company shall emit less than 40.0 tons of VOCs in any consecutive 12-month period from the entire installation, as listed in Table 1.
 - 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 Conditions 1.A.
2. Total HAPs Emission Limitation
 - A. The Knapheide Manufacturing Company shall emit less than 25.0 tons combined of HAPs in any consecutive 12-month period from the entire installation, as listed in Table 1.
 - B. Attachment C or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A.
3. Individual HAPs Emission Limitation
 - A. The Knapheide Manufacturing Company shall emit less than 10.0 tons each of Toluene (108-88-3), Ethyl Benzene (100-41-4), Naphthalene (91-20-3), Xylene (1330-20-7), and Methanol (67-56-1), 5.0 tons of Diethylene Glycol Monobutyl Ether (112-34-5) and 0.02 tons each of Cumene (98-82-8) and 1,6 Hexamethylene diisocyanate (822-06-0) in any consecutive 12-month period from the entire installation, as listed in Table 1.
 - B. Attachment B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 3.A.

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SPECIAL CONDITIONS:

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

4. Control Device Requirement – Polyester Filters
 - A. The Knapheide Manufacturing Company shall control particulate emissions from the paint booths (EP-20) using filters as specified in the permit application. The filters shall be operated and maintained in accordance with the manufacturer's specifications.
 - B. Replacement polyester filters for the paint booth shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - C. The Knapheide Manufacturing Company shall maintain an operating and maintenance log for the filters which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
 - 3)
5. Capture Device Requirement – Permanent Total Enclosure
 - A. The Knapheide Manufacturing Company shall capture emissions from the spray applied surface coating operation with a booth and exhaust fan(s).
 - B. Negative pressure shall be demonstrated and recorded at all booth openings at least once every 24 hours using visual indication such as streamers, powder puff, smoke, or other method preapproved by the Air Pollution Control Program. Periods when spray applied surface coating is non-operational shall be recorded.
 - C. The Knapheide Manufacturing Company shall maintain an operating and maintenance log associated with each permanent total enclosure which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, time, date and duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

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SPECIAL CONDITIONS:

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

6. Operational Requirement - Solvent/Paint Cloths
 - A. The Knapheide Manufacturing Company shall keep the paint solvents and cleaning solutions in sealed containers whenever the materials are not in use. The Knapheide Manufacturing Company shall provide and maintain suitable, easily read, permanent markings on all paints, solvent and cleaning solution containers used with this equipment.
 - B. No more than one spray gun shall operate at one time in paint booth (EP-20).
7. Record Keeping and Reporting Requirements
 - A. The Knapheide Manufacturing Company 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. The Knapheide Manufacturing Company 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.
8. Superseding Condition
The conditions of this permit supersede all special conditions found in Construction Permit 112005-003, which was issued by the Air Pollution Control Program.

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

Project Number: 2014-06-045
Installation ID Number: 127-0037
Permit Number:

The Knapheide Manufacturing Company
Highway 24
West Quincy, MO 63471

Complete: June 30, 2014

Parent Company:
The Knapheide Manufacturing Company
Highway 24
West Quincy, MO 63471

Marion County, S10, T59N, R5W

REVIEW SUMMARY

- The Knapheide Manufacturing Company has applied for authority for the installation of a new paint booth (EP-20).
- HAP emissions are expected from the proposed equipment. HAPs emitted from this process are Xylene, Diethylene Glycol Monobutyl Ether, Ethyl Benzene, Cumene, Naphthalene and Toluene. The combined and individual HAP emissions are limited to their de minimis level and SMAL.
- The MACT standard, 40 CFR Part 63, Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources* applies to the proposed equipment because it will be painting metal automotive parts. However, the proposed coatings this installation will use does not contain target HAPs (chromium, lead, manganese, nickel, or cadmium) as listed in this regulation.
- The NSPS Standard, 40 CFR 60 Subpart MM, *Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations*, does not apply to the installation because it is not an automotive assembly plant.
- Polyester 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 VOCs and combined HAPs are conditioned below de minimis levels. Individual HAPs are limited to their respective SMAL.
- This installation is located in Marion County, an attainment area for all other 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 their respective de minimis levels and HAP SMALS.
- Emissions testing is not required for the paint gun.
- A Basic Operating Permit application is not required for this installation because it will remain a de minimis source for criteria pollutants and the MACT Subpart HHHHHH does not require an automatic operating permit.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Per the applicant, there are two existing paint booths on site. One is dedicated to paint truck bed liners and the other paint booth is dedicated to paint metal truck parts and truck body parts. The installation includes the emission sources listed in Table 1.

Table 1: Summary of Installation's Emission Sources

Emission Point	Description
EP-03	Natural gas heaters
EP-17	Bed liner paint booth
EP-18	Metal truck parts/ truck body parts paint booth
EP-19	Drying Oven
EP-20	Metal truck parts/ truck body parts paint booth

The following New Source Review permits have been issued to The Knapheide Manufacturing Company from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0280-001	The installation of a Brule FG4-T5 incinerator. This incinerator has been removed from the site.
112005-003	The installation of a paint booth (EP-18) and a 4 MMBtu oven (EP-19).

PROJECT DESCRIPTION

This project includes the installation of Paint Line 19 Paint Booth (EP-20). The Knapheide Manufacturing Company (Knapheide Manufacturing) has two existing paint booths but the proposed paint booth will paint truck parts in a different color. The bottleneck of this paint booth is the paint gun, which is the SATAjet 3000 B RP paint gun that has the transfer efficiency of at least 65%. The maximum spraying capacity of the gun was determined by the applicant. The paint gun sprayed a paint that is used on site into a bucket for 5 minutes and 4 seconds. During this time, 0.9 quarts of paint was collected. As a result, 2.66 gallons per hour was determined to be the MHDR of the gun. If this paint gun is used continuously (8760 hours per year), 23,302 gallons of materials would be sprayed in one year. This maximum annual throughput was used during the review of this project. This paint booth is equipped with polyester paint filters and have a control efficiency of 95% for particulate emissions. There are no control devices for VOC emissions.

Each truck body part that will be painted at this facility arrives coated with a primer. The primed coat is scuffed with a handheld sander to promote adhesion to top coat. If too much primer is removed, a primer and primer activator mixture is sprayed onto the truck part. Then each truck part is painted with a top coat and top coat activator mixture. The spray gun is cleaned after the primer mixture and topcoat mixture are sprayed.

Since the primer is sprayed when too much primer is removed from the truck part, the amount of primer removed is approximately equal the amount that will be sprayed. The particulate emissions from the scuffing were conservatively assumed to be equal to the particulate emissions of spraying the primer.

EMISSIONS/CONTROLS EVALUATION

The emissions of this project were calculated using a mass balance approach in conjunction with the MSDS of the top coat, top coat activator, primer, primer activator and gun wash. Based on the information from the manufacturer of the paint gun, it has a transfer efficiency of at least 65%, which was used in the calculation of particulate emissions. It was assumed that 100% VOCs and volatile HAPs would be emitted. A 95% control efficiency for particulate emissions was used for the use of polyester paint filters. Because the painting will be done in an enclosed booth, a capture efficiency of 100% was assumed. Total HAP emissions were conservatively calculated to include all maximum individual HAP emissions from each material used to evaluate a worst-case scenario.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Construction Permit 112005-003. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels/SMAL	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential ^a
PM	25.0	N/D	N/D	4.40	N/A
PM ₁₀	15.0	0.88	0.02	4.40	N/A
PM _{2.5}	10.0	N/D	0.02	4.40	N/A
SOx	40.0	0.003	N/D	N/A	N/A
NOx	40.0	0.58	0.20	N/A	N/A
VOC	40.0	< 40.0	8.27	53.59	< 40.0
CO	100.0	0.48	0.17	N/A	N/A
HAPs	10.0/25.0	< 25.0	N/D	47.40	< 25.0
Xylene (1330-20-7)	10.0 ^b	3.50	N/D	2.86	< 10.0
Diethylene Glycol Monobutyl Ether (112-34-5)	5.0 ^b	N/A	N/D	2.73	< 5.0
Ethyl Benzene (100-41-4)	10.0 ^b	0.82	N/D	0.57	< 10.0
Cumene (98-82-8)	0.02 ^b	N/A	N/D	0.36	< 0.02
Naphthalene (91-20-3)	10.0 ^b	N/A	N/D	1.18	< 10.0
Toluene (108-88-3)	10.0 ^b	< 10.0	N/D	47.40	< 10.0
1,6 Hexamethylene diisocyanate (822-06-0)	0.02 ^b	< 0.02	N/D	N/A ^c	< 0.02
Methanol (67-56-1)	10.0 ^b	< 10.0	N/D	N/A ^c	< 10.0

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

^a Since annual VOC, combined HAPs and individual HAP emissions will be limited, particulate emissions will be indirectly limited below de minimis levels.

^b Screening Model Action Level (SMAL) of each individual HAP

^c These HAPS are not emitted from the proposed coatings for this project and are from the review of Construction Permit 112005-003

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 PM, PM₁₀, and PM_{2.5}, VOCs, combined HAPs and individual HAPs are conditioned below de minimis levels and the SMAL of each HAP.

APPLICABLE REQUIREMENTS

The Knapheide Manufacturing Company 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
- *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

- National Emission Standards for Hazardous Air Pollutants for Source Categories (a.k.a. Maximum Achievable Control Technology (MACT)), 10 CSR 10-6.075,
 - *Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*, 40 CFR Part 63, Subpart HHHHHH. However, the proposed coatings this installation will use does not contain target HAPs (chromium, lead, manganese, nickel, or cadmium) as listed in this regulation.

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.

Daronn A. Williams
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 June 12, 2014, received June 17, 2014, designating The Knapheide Manufacturing Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

%percent	m/s	meters per second
°Fdegrees Fahrenheit	Mgal	1,000 gallons
acfmactual cubic feet per minute	MW	megawatt
BACTBest Available Control Technology	MHDR	maximum hourly design rate
BMPsBest Management Practices	MMBtu	Million British thermal units
BtuBritish thermal unit	MMCF	million cubic feet
CAMCompliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CASChemical Abstracts Service	NAAQS	National Ambient Air Quality Standards
CEMSContinuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFRCode of Federal Regulations	NO_x	nitrogen oxides
COcarbon monoxide	NSPS	New Source Performance Standards
CO₂carbon dioxide	NSR	New Source Review
CO₂ecarbon dioxide equivalent	PM	particulate matter
COMSContinuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSRCode of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscfdry standard cubic feet	ppm	parts per million
EIQEmission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EPEmission Point	PTE	potential to emit
EPAEnvironmental Protection Agency	RACT	Reasonable Available Control Technology
EUEmission Unit	RAL	Risk Assessment Level
fpsfeet per second	SCC	Source Classification Code
ftfeet	scfm	standard cubic feet per minute
GACTGenerally Available Control Technology	SDS	Safety Data Sheet
GHGGreenhouse Gas	SIC	Standard Industrial Classification
gpmgallons per minute	SIP	State Implementation Plan
grgrains	SMAL	Screening Model Action Levels
GWPGlobal Warming Potential	SO_x	sulfur oxides
HAPHazardous Air Pollutant	SO₂	sulfur dioxide
hrhour	tph	tons per hour
hphorsepower	tpy	tons per year
lbpound	VMT	vehicle miles traveled
lbs/hrpounds per hour	VOC	Volatile Organic Compound
MACTMaximum Achievable Control Technology		
µg/m³micrograms per cubic meter		

Mr. Bernie Ott
Environmental Engineer
The Knapheide Manufacturing Company
P. O. Box 7140
Quincy, IL 62305-7140

RE: New Source Review Permit - Project Number: 2014-06-045

Dear Mr. Ott:

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 and with your new source review permit application 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 of 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, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

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 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:dwl

Enclosures

c: Northeast Regional Office
PAMS File: 2014-06-045
Permit Number: