

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: **062014-003**

Project Number: 2014-02-064

Installation Number: 051-0086

Parent Company: SSM Regional Health Services; St. Mary's Health Center

Parent Company Address: 2505 Mission Drive, Jefferson City, MO 65109

Installation Name: St. Mary's Health Center

Installation Address: 2505 Mission Drive, Jefferson City, MO 65109

Location Information: Cole County, S14, T44N, R12W

Application for Authority to Construct was made for:
Installation of three boilers, two emergency generators, and underground storage 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.

JUN 06 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.	2014-02-064

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."

St. Mary's Health Center
Cole County, S14, T44N, R12W

1. NOx Emission Limitations
 - A. St. Mary's Health Center shall emit less than 40.0 tons of NOx in any consecutive 12-month period from the entire installation .
 - 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. Operational Requirement - Fuel Type
 - A. St. Mary's Health Center shall combust exclusively pipeline grade natural gas or ultra-low sulfur distillate fuel oil in the boilers (EU-01, EU-02, and EU-03).
 - B. St. Mary's Health Center shall keep fuel usage and supplier certification records in accordance with 40 CFR 60 Subpart Dc.
3. Emergency Generator Requirements
 - A. The emergency generators shall only be operated in accordance to the definition of *Emergency stationary internal combustion engine* in 40 CFR 60 Subpart IIII.
 - B. St. Mary's Health Center shall combust exclusively ultra-low sulfur distillate fuel in the emergency generators (EU-4 and EU-5).
 - C. St. Mary's Health Center shall obtain records from fuel supplier for each shipment that show sulfur content.
4. Record Keeping and Reporting Requirements
 - A. St. Mary's Health Center 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.

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SPECIAL CONDITIONS:

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

- B. St. Mary's Health Center 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.

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

Project Number: 2014-02-064
Installation ID Number: 051-0086
Permit Number:

St. Mary's Health Center
2505 Mission Drive
Jefferson City, MO 65109

Complete: March 21, 2014

Parent Company:
SSM Regional Health Services; St. Mary's Health Center
2505 Mission Drive
Jefferson City, MO 65109

Cole County, S14, T44N, R12W

REVIEW SUMMARY

- St. Mary's Health Center has applied for authority to install three boilers, two emergency generators, and underground storage tank.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this project are products of natural gas combustion and fuel oil combustion.
- NSPS 40 CFR Part 60 Subpart Dc: *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* applies to this facility because the boilers exceed 10MMBtu/hr heat input.
- NSPS 40 CFR Part 60 Subpart IIII: *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* applies to the emergency generator located at this site.
- NESHAP 40 CFR Part 63 Subpart JJJJJJ: *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* applies to this installation if the use of liquid fuel in the boilers exceeds a combined total of 48 hours during any calendar year on an individual boiler basis.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NOx are voluntarily conditioned below de minimis levels.
- This installation is located in Cole County, a 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 were voluntarily conditioned below de minimis levels.
- Approval of this permit is recommended with special conditions.
- A Basic Operating permit is required because NSPS 40 CFR 60 Subpart IIII applies.

INSTALLATION DESCRIPTION

St. Mary's Health Center is a new installation located in Jefferson City, Missouri. The installation will have a 360,000 square foot hospital building, 66,560 square foot medical office building and 170 private patient rooms. The hospital will sit on 44 acres out of a 100 acre plot of land. The emission units associated with this installation are three boilers, two emergency generators, and an underground storage tank that will contain liquid fuel. All three boilers are Hurst Model S5-GA2-400-150, manufactured in 2013, and are natural gas and diesel fired. The Maximum Hourly Design Rate (MHDR) for each boiler is 16.80 MMBtu/hr for natural gas and 16.26 MMBtu/hr for ultra low sulfur No. 2 diesel fuel oil. The emergency generators are Cummins QSK50 Series, Model DQGAA, 1656 kWm engines. The MHDR for each generator is 12.56 MMBtu/hr. Ultra low sulfur No. 2 diesel fuel will only be used as the fuel for the boiler when natural gas is not available. The emergency generators will use the same ultra low sulfur No. 2 diesel when they are in use. The diesel fuel will be stored in an underground horizontal storage tank with a capacity of 24,970 gallons. The expected turnovers of this tank are less than once per year.

No permits have been issued to St. Mary's Health Center from the Air Pollution Control Program.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, *Natural Gas Combustion*, Section 1.4, July 1998, *Fuel Oil Combustion*, Section 1.3, May 2010, *Gasoline and Diesel Industrial Engines*, Section 3.3, October 1996, and 40 CFR 89 Table 1. - Emission Standards. The boilers are subject to MACT applicability if actual operation with fuel oil is more than 48 hours in a year. Thus, potential emissions were based upon natural gas and fuel oil combustion. The higher potential emissions from the boilers were selected per respective pollutant, regardless of the fuel type. Potential emissions of PM, PM₁₀, PM_{2.5}, SO_x, NO_x, formaldehyde, and GHG (CO₂e) are higher for fuel oil. Potential emissions of VOC, CO, and combined HAPs are higher for natural gas.

Emissions from the emergency generators are based on a yearly operating time equal to 500 hours.

The potential emissions from the storage tank were estimated using EPA's TANKS Emission Estimation Software, Version 4.0.9D, released October 5, 2006.

The following table provides an emissions summary for this project. Existing potential emissions are not available as St. Mary's Health Center will be a new facility. Potential emissions of the application represent the potential of the new equipment assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (N/A EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/A	N/A	3.478	N/A
PM ₁₀	15.0	N/A	N/A	3.927	N/A
PM _{2.5}	10.0	N/A	N/A	2.735	N/A
SOx	40.0	N/A	N/A	0.350	N/A
NOx	40.0	N/A	N/A	43.219	<40.00
VOC	40.0	N/A	N/A	1.705	N/A
CO	100.0	N/A	N/A	24.569	N/A
GHG (CO ₂ e)	75,000 / 100,000	N/A	N/A	36,187.995	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	36,315.190	N/A
HAPs	10.0/25.0	N/A	N/A	0.419	N/A

N/A = Not Applicable

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 NOx are voluntarily conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

St. Mary's Health Center 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
- *Operating Permits*, 10 CSR 10-6.065

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations, 10 CSR 10-6.070*
 - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc* applies to this facility because the boiler's heat input exceeds 10MMBtu/hr.
 - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR Part 60, Subpart IIII* applies to the emergency generators located at this site.
- *Maximum Achievable Control Technology Regulations, 10 CSR 10-6.075*
 - *NESHAP 40 CFR Part 63 Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* does not apply to the emergency generators because they are already applicable to 40 CFR Part 60, Subpart IIII.
- *Restriction of Emission of Sulfur Compounds, 10 CSR 10-6.260* does not apply to the boiler as it is subject to NSPS Subpart Dc. This rule does apply to the emergency generators, however they are in compliance by following Special Condition 3.B.
- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405* applies to the boiler. The boiler will combust natural gas and fuel oil with less than 1.2% sulfur, therefore it is deemed in compliance.

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.

Bryce Mihalevich
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 February 26, 2014, received February 26, 2014, designating SSM Regional Health Services; St. Mary's Health Center as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A – NOx Annual Emissions Tracking Sheet

St. Mary's Health Center
 Cole County, S14, T44N, R12W
 Project Number: 2014-02-064
 Installation ID Number: 051-0086
 Permit Number: _____

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

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Month	Fuel Type	Volume Used (MMcf or gal)	NOx Emission Factor (lb/MMcf or lb/gal)	Monthly NOx Emissions (pounds)	Monthly NOx Emissions (tons)	Combined Monthly NOx Emissions (tons)	12-Month Total NOx Emissions (tons)
Example 03/2014	Natural Gas (MMcf)	36.062	100	3606.2	1.803	1.821	21.852
	Diesel (gal)	2181.6	0.02	36.52	0.018		
	Natural Gas (MMcf)		100				
	Diesel (gal)		0.02				
	Natural Gas (MMcf)		100				
	Diesel (gal)		0.02				
	Natural Gas (MMcf)		100				
	Diesel (gal)		0.02				
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	Diesel (gal)		0.02				
	Natural Gas (MMcf)		100				
	Diesel (gal)		0.02				
	Natural Gas (MMcf)		100				
	Diesel (gal)		0.02				

- a) Record the current date.
- b) Fuel type.
- c) Record this month's volume of fuel used.
- d) Composite NOx emission factor for fuel type.
- e) Calculate using the following equation: (e) = (c) x (d)
- f) Calculate using the following equation: (f) = (e) / 2,000
- g) Calculate the sum of column (f).
- h) Add the combined monthly emissions (g) to the sum of the monthly emissions from the previous eleven months.

A rolling 12-month total (h) less than 40.0 tons indicates compliance with Special Condition 1.A.

APPENDIX A

Abbreviations and Acronyms

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

Mr. Mike Bock
Director of Facilities
St. Mary's Health Center
2505 Mission Drive
Jefferson City, MO 65109

RE: New Source Review Permit - Project Number: 2014-02-064

Dear Mr. Bock:

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 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 Bryce Mihalevich, 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:bml

Enclosures

c: Northeast Regional Office
PAMS File: 2014-02-064

Permit Number:

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