

# PERMIT BOOK

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: **08 2 0 1 2 - 0 0 8** Project Number: 2012-03-009

Installation Number: 213-0048

Parent Company: College of the Ozarks

Parent Company Address: P.O. Box 17, Point Lookout, MO 65726

Installation Name: College of the Ozarks

Installation Address: 100 Opportunity Way, Point Lookout, MO 65726

Location Information: Taney County, S7&8, T22N, R21W

Application for Authority to Construct was made for:  
Modification of two boilers to combust natural gas. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

**AUG 15 2012**

EFFECTIVE DATE

Handwritten signature of Kyrá L. Moore in black ink.  
\_\_\_\_\_  
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.

Page No.	3
Permit No.	
Project No.	2012-03-009

### 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."*

College of the Ozarks  
Taney County, S7&8, T22N, R21W

1. Superseding Condition
  - A. The conditions of this permit supersede Special Condition 2.A. in Construction Permit 032003-006 issued by the Air Pollution Control Program.
  
2. Oxides of Nitrogen (NO<sub>x</sub>) Emission Limitation
  - A. College of the Ozarks shall emit less than 47.17 tons of NO<sub>x</sub> in any consecutive 12-month period from boilers 1 and 2 (EU-01 and EU-02, respectively).
  
  - 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 2.A.
  
3. Fuel Restriction
  - A. College of the Ozarks shall combust exclusively either fuel oil No. 2 containing less than 15 parts per million by weight sulfur or natural gas in boilers 1 and 2 (EU-01 and EU-02, respectively).
  
  - B. Fuel oil No. 2 shall only be combusted during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours per boiler during any calendar year.
  
  - C. Fuel supplier certifications per each shipment of fuel oil shall be used to demonstrate compliance with Special Condition 3.A.
  
  - D. Monthly records per boiler showing fuel oil amount (gallons), fuel oil operating hours, and reason for fuel oil usage shall be kept to demonstrate compliance with Special Condition 3.B.

Page No.	4
Permit No.	
Project No.	2012-03-009

#### SPECIAL CONDITIONS:

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

4. Record Keeping and Reporting Requirements
  - A. College of the Ozarks 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 Material Safety Data Sheets (MSDS) for all materials used.
  - B. College of the Ozarks 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 shows an exceedance of a limitation imposed by this permit.

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

Project Number: 2012-03-009  
Installation ID Number: 213-0048  
Permit Number:

College of the Ozarks  
100 Opportunity Way  
Point Lookout, MO 65726

Complete: March 5, 2012

Parent Company:  
College of the Ozarks  
P.O. Box 17  
Point Lookout, MO 65726

Taney County, S7&8, T22N, R21W

REVIEW SUMMARY

- College of the Ozarks has applied for authority to modify two boilers (EU-01 and EU-02) to combust natural gas.
- Hazardous Air Pollutant (HAP) emissions are expected from the combustion of natural gas.
- 40 CFR 60 Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, (NSPS Dc) remains applicable to the boilers. However, this project does not meet the NSPS definition of modification as there is no hourly increase in an air pollutant (particulate matter or sulfur oxides) to which a NSPS Dc standard applies.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) under 40 CFR 61 apply to this installation.
- None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the modified boilers. 40 CFR 63 Subpart JJJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, (MACT 6J) does not apply. See the project description of this permit for further detail.
- No air pollution control equipment is being used in association 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*. The increase in potential emissions of NO<sub>x</sub> is conditioned below the de minimis level. Potential emissions of other pollutants are indirectly conditioned and remain below respective de minimis levels.

- This installation is located in Taney 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 conditioned below de minimis levels.
- Emissions testing is not required for the equipment.
- An application to amend the Intermediate Operating Permit is required for this installation within 90 days of this permit's issuance.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION DESCRIPTION

College of the Ozarks is a higher education institution located near Branson. The installation consists of fuel oil combustion for steam and power generation, fuel storage, printing, feed and grain operations, a concrete batch plant, paint booths, and woodworking and welding equipment. The installation is a minor source under construction permits and an intermediate source under operating permits. Only one construction permit has been issued to College of the Ozarks from the Air Pollution Control Program, permit 032003-006.

#### PROJECT DESCRIPTION

This project is a result of a construction permit applicability determination under project 2011-07-008 to combust natural gas in boilers EU-01 and EU-02. These boilers were installed in 1998 and construction permitted in 2003. The permit restricted fuel solely to oil. Also, the boilers were physically not able to combust natural gas. However, the boilers were connected to natural gas and have been physically able to combust it since December 27, 2010, but not permitted to do so. The maximum hourly design rate of each boiler has remained unchanged at 57.4 million British thermal units per hour heat input. Emissions are uncontrolled.

The boilers were defined as oil-fired and not permitted to combust natural gas until this permit's issuance date. Under the original promulgation of MACT 6J, March 21, 2011, the boilers would have been subject to MACT 6J as oil-fired. However, an amendment to MACT 6J was proposed March 21, 2011. Due to the amendment and Special Condition 3 of this permit, the boilers meet the definition of gas-fired per §63.11237 and are exempt from MACT 6J.

## EMISSIONS/CONTROLS EVALUATION

Using the Environmental Protection Agency document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.3 *Fuel Oil Combustion* May 2010, and Section 1.4 *Natural Gas Combustion* July 1998, natural gas combustion has the potential to emit more carbon monoxide (CO) than does No. 2 fuel oil combustion, on the same energy input basis.

Since the boilers were previously not able to combust natural gas, can now combust natural gas, and will have an increase in potential emissions from natural gas combustion, the project qualifies as a NSR modification. Modification is defined as, "any physical change, or change in method of operation of, a source operation or attendant air pollution control equipment which would cause an increase in potential emissions of any air pollutant emitted by the source operation," per 10 CSR 10-6.020(2)(M). A modification is subject to construction permitting according to 10 CSR 10-6.060(1)(B). Since the project is a modification to existing emission units, the potential emissions associated with the project can be calculated as the potential emissions after the project minus the actual emissions before the project, or potentials minus actuals.

Actual annual emissions were calculated for this project using the highest representative consecutive 24 month (baseline) average fuel oil usage cited from the installation's Emission Inventory Questionnaire (EIQ). The highest annual average comes from 2008 and 2007. Each unit combusted 348,820 gallons in 2008 and 367,880 gallons in 2007, for a total annual average of 716,700 gallons per year. Fuel oil sulfur content is limited to 0.20 maximum percent by weight in permit 032003-006. The applicant provided a specification sheet from the fuel oil supplier citing ultra-low sulfur diesel was supplied in 2009. However, this is after the baseline date where up to 0.20 percent was allowed. This conservatively higher sulfur content was cited, as it does not affect the permitting applicability of the project. Citing ultra-low sulfur diesel also does not affect the permitting applicability of the project.

Potential emissions were calculated based upon each unit operating 8,760 hours per year and natural gas higher heating value of 1,020 British thermal units per standard cubic foot. Potentials minus actuals show particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions being greater than PM<sub>10</sub> emissions and PM<sub>10</sub> emissions being greater than PM emissions due to the particle size distribution for fuel oil combustion emission factors. Sulfur oxide emissions are negative due to the fuel oil versus natural gas sulfur content. Conditioned potential emissions of the project represent a limited de minimis increase in NO<sub>x</sub> emissions over baseline actuals. Conditioned potentials of other pollutants were calculated using the ratio of the de minimis NO<sub>x</sub> increase to potential emissions, multiplied by the potentials minus actuals, summed with the baseline emissions. The following table provides an emissions summary for this project.

Table 1: Emission Units 1 and 2 Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Actual Emissions	Potential Emissions	Potentials - Actuals	Conditioned Potential Emissions of the Project
PM	25.0	1.18	3.75	2.56	3.62
PM <sub>10</sub>	15.0	0.85	3.75	2.89	3.60
PM <sub>2.5</sub>	10.0	0.76	3.75	2.98	3.60
SO <sub>x</sub>	40.0	10.32	0.30	-10.02	0.80
NO <sub>x</sub>	40.0	7.17	49.30	42.13	< 47.17
VOC	40.0	0.12	2.71	2.59	2.58
CO	100.0	1.79	41.41	39.62	39.41
HAPs	10.0 / 25.0	0.03	0.93	0.90	0.89
GHG (mass)	0 / 100 / 250	7,991.38	59,163.14	51,171.76	56,569.55
GHG (CO <sub>2e</sub> )	0 / 75,000 / 100,000	8,021.71	59,520.96	51,499.25	1.08

N/A = Not Applicable; 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*. The increase in potential emissions of NO<sub>x</sub> is conditioned below the de minimis level. Potential emissions of other pollutants are indirectly conditioned and remain below respective de minimis levels.

### APPLICABLE REQUIREMENTS

College of the Ozarks 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
- *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 – New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR Part 60, Subpart Dc*
- *Restriction of Emission of Sulfur Compounds, 10 CSR 10-6.260 does not apply because the boilers are subject to a sulfur limit in NSPS Dc of less than 0.5 percent by weight.*
- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405 applies, and the boilers are in compliance as they combust natural gas and fuel oil less than 1.2 percent sulfur.*

## 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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David Little  
Environmental Engineer

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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 March 1, 2012, received March 5, 2012, designating College of the Ozarks as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.



Mr. Daryl Brown  
EHS Manager  
College of the Ozarks  
P.O. Box 17  
Point Lookout, MO 65726

RE: New Source Review Permit - Project Number: 2012-03-009

Dear Mr. Brown:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 have any questions regarding this permit, please do not hesitate to contact David Little, 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:dll

Enclosures

c: Southwest Regional Office  
PAMS File: 2012-03-009

Permit Number: