

STATE OF MISSOURI



PERMIT BOOK

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:

082014-019

Project Number: 2014-05-049

Installation Number: 033-0023

Parent Company: Ray-Carroll County Grain Growers, Inc.

Parent Company Address: P.O. Box 158, Richmond, MO 64085

Installation Name: Ray-Carroll County Grain Growers, Inc. - Carrollton Facility

Installation Address: 26274 Highway 24 East, Carrollton, MO 64633

Location Information: Carroll County, S35, T53N, R23W

Application for Authority to Construct was made for:

Replacement of two receiving pits and two elevator legs. 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.

AUG 28 2014

EFFECTIVE DATE

Handwritten signature of Kynal 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 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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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."

Ray-Carroll County Grain Growers, Inc. - Carrollton Facility
Carroll County, S35, T53N, R23W

1. Operational Requirement-Daily Receiving Limit
 - A. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall receive less than 8,400 tons of grain per calendar day.
 - 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 1.A.
2. Control Device Requirement-Cyclone
 - A. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall control emissions from the receiving pits (EU-01A) and elevator legs (EU-02) using cyclones as specified in the permit application.
 - B. The cyclones shall be operated and maintained in accordance with the manufacturer's specifications. The cyclone shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
 - C. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall monitor and record the operating pressure drop across the cyclones at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - D. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall maintain an operating and maintenance log for the cyclones 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,

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SPECIAL CONDITIONS:

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

and replacements, etc.

3. Capture Device Requirement – Ventilation System
 - A. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall use a ventilation system to capture emissions from the receiving pits (EU-1A) and elevator legs (EU-02).
 - B. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall design and construct the ventilation system according to the industrial ventilation manual entitled, "Industrial Ventilation - A Manual of Recommended Practice, American Conference of Governmental Industrial Hygienists".
 - C. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility shall demonstrate that the ventilation system was constructed according to Special Condition 3.B. by keeping information on site that verifies the following design parameters for the ventilation system:
 - 1) the cross-sectional area of the ventilation system inlet
 - 2) the distance from the ventilation system inlet to the emissions source
 - 3) the minimum recommended volumetric airflow
 - 4) the minimum recommended ventilation system face velocity
4. Record Keeping and Reporting Requirements
 - A. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility 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. Ray-Carroll County Grain Growers, Inc. - Carrollton Facility 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: 2014-05-049
Installation ID Number: 033-0023
Permit Number:

Ray-Carroll County Grain Growers, Inc. - Carrollton Facility Complete: July 1, 2014
26274 Highway 24 East
Carrollton, MO 64633

Parent Company:
Ray-Carroll County Grain Growers, Inc.
P.O. Box 158
Richmond, MO 64085

Carroll County, S35, T53N, R23W

REVIEW SUMMARY

- Ray-Carroll County Grain Growers, Inc. - Carrollton Facility has applied for authority to replace two receiving pits (EU-01A) and two elevator legs (EU-02).
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A cyclone is being used to control the particulate matter 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 all pollutants are below de minimis levels.
- This installation is located in Carroll 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 below de minimis levels.
- Emissions testing is not required for the equipment.

- A Part 70 Operating Permit application has been received by the Air Pollution Control Program in June 2011. A revision to the application or modification to the permit is required within one year of startup of operation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Ray-Carroll County Grain Growers, Inc. (RCCGG) is an existing grain elevator in Carrollton, Missouri. It is considered one installation (033-0023) with Show-Me Ethanol, LLC (SME), and Ray-Carroll Fuels, LLC. The combined installation is a minor source under construction permits for PM₁₀, SO_x, NO_x, VOC, and CO. The combined installation is a major source under operating permits.

The following permits have been issued to RCCGG, SME, and Ray-Carroll Fuels, LLC from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0494-019	Grain elevator
0596-014	Fertilizer distribution
012003-009	Throughputs and loadouts
042008-004	Ethanol plant
2006-11-085	Basic operating permit for grain elevator
042008-005	Increase production
072008-003	Add fuel station
042008-004A	Revised Modeling
072008-003A	Revised Modeling
042008-005A	Fuel station and elevator modeling
042008-004B	Revised Modeling for SME
122010-010	Installation of a Zimmerman Z-4036 grain dryer

PROJECT DESCRIPTION

Ray-Carroll County Grain Growers, Inc. – Carrollton Facility (RCCGG) has applied for authority to replace the existing grain truck receiving pits (EU-01A) and grain elevators (EU-02). The existing receiving pits and elevator legs are each rated at 280 tons per hour which equates to a combined total equal to 560 tons of grain per hour. The new receiving pits are each capable of unloading up to 420 tons of grain per hour for a combined MHDR equal to 840 tons of grain per hour. The elevator legs will also have a combined MHDR equal to 840 tons of grain per hour. Particulate emissions from the receiving pits and the elevators are controlled by a cyclone. RCCGG has requested a voluntary daily limit equal to 8,400 tons of grain received per day in order to maintain the existing bottleneck of the installation. In the previous permit, permit number 122010-010, RCCGG is limited to receiving grain from 7:00 a.m. to 10:00 p.m. each day. Therefore, at the existing receiving MHDR, RCCGG is capable of receiving up to 8,400 tons of grain per day. Therefore, by limiting RCCGG to 8,400 tons of grain

received today, no emissions increase for the installation is expected from this project.

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:

- Section 9.9.1 *Grain Elevators and Processes*, May 2003
- Appendix B, *Generalized Particle Size Distributions*, September 2006

Particulate emissions from the receiving pits (EU-1A) and elevator legs (EU-2) will be captured by a ventilation system inlet and controlled by a high efficiency cyclone as specified in the special conditions of this permit. Capture efficiency equal to 80% is assumed in the potential to emit due to operation of the ventilation system in accordance with the industrial ventilation manual entitled, "Industrial Ventilation - A Manual of Recommended Practice, American Conference of Governmental Industrial Hygienists." Control efficiencies equal to 94% for PM and PM₁₀ and 80% for PM_{2.5} are assumed in the potential to emit for use of a high efficiency cyclone. The cyclone efficiency is based on a weighted efficiency average from Appendix B.2, September 1996.

The following table provides an emissions summary for this project. Existing potential emissions were taken from permit number 122010-010. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming operation as stated in Special Condition 1 of this permit (8,400 tons received per day). Since RCCGG has requested a voluntary daily grain throughput limit equal to 8,400 tons of grain per day, which was the existing bottlenecked receiving rate, a potential emissions increase is not expected for the installation.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Ray-Carroll Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	18.92	N/D
PM ₁₀	15.0	44.61	4.56	6.09	44.61
PM _{2.5}	10.0	N/D	0.26	2.50	N/D
SOx	40.0	1.41	0.16	N/A	1.41
NOx	40.0	12.25	1.36	N/A	12.25
VOC	40.0	0.94	0.10	N/A	0.94
CO	100.0	7.07	0.78	N/A	7.07
GHG (CO ₂ e)	100,000	N/D	N/D	N/A	N/D
GHG (mass)	0.0 / 250.0	N/D	N/D	N/A	N/D
HAPs	10.0/25.0	0.16	0.0	N/A	0.16

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*. Potential emissions of all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Ray-Carroll County Grain Growers, Inc. - Carrollton Facility 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

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.

J Luebbert
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 May 19, 2014, received May 19, 2014, designating Ray-Carroll County Grain Growers, Inc. 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
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/m³micrograms per cubic meter	

Mr. Tim Phillips
Operations Manager
Ray-Carroll County Grain Growers, Inc. - Carrollton Facility
P.O. Box 158
Richmond, MO 64085

RE: New Source Review Permit - Project Number: 2014-05-049

Dear Mr. Phillips:

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, if any, 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 J Luebbert, 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:jl

Enclosures

c: Northeast Regional Office
PAMS File: 2014-05-049

Permit Number:

Celebrating 40 years of taking care of Missouri's natural resources.
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