

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: 032013-004

Project Number: 2012-07-030
Installation Number: 107-0068

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

Parent Company Address: 807 West Main, Richmond, MO 64085

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

Installation Address: 1.2 miles east of Highway 20 and State Hwy V,
Corder, MO 64021

Location Information: Lafayette County, S25, T50N, 25W

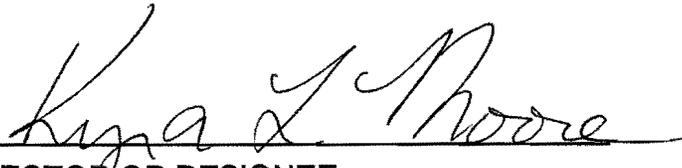
Application for Authority to Construct was made for:
Installation of a new grain elevator with associated equipment. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

MAR - 8 2013

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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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.
Lafayette County, S25, T50N, 25W

1. PM₁₀ Emission Limitation
 - A. Ray-Carroll County Grain Growers, Inc. shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the entire installation as shown 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 Condition 1.A.
2. Application of Chemical Dust Suppressants
 - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved haul roads (EU-7, EU-8).
 - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the haul roads listed above in Special Condition 2.A. This is a control factor used in PTE calculations and therefore must be recorded. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources personnel upon request.
3. Control Device Requirement-Baghouse
 - A. Ray-Carroll County Grain Growers, Inc. shall control emissions from the two receiving pits (EU-1, EU-2), as well as the receiving conveyance legs, using baghouses as specified in the permit application.

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SPECIAL CONDITIONS:

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

- B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse 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 the Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Ray-Carroll County Grain Growers, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. Ray-Carroll County Grain Growers, Inc. shall maintain an operating and maintenance log for the baghouses 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.
4. Record Keeping and Reporting Requirements
- A. Ray-Carroll County Grain Growers, Inc. 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. Ray-Carroll County Grain Growers, Inc. 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 show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2012-07-030
Installation ID Number: 107-0068
Permit Number:

Ray-Carroll County Grain Growers, Inc.
1.2 miles east of Highway 20 and State Hwy V
Corder, MO 64021

Complete: July 12, 2012

Parent Company:
Ray-Carroll County Grain Growers, Inc.
807 West Main
Richmond, MO 64085

Lafayette County, S25, T50N, 25W

REVIEW SUMMARY

- Ray-Carroll County Grain Growers, Inc. has applied for authority to install a new grain elevator with associated equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation. New Source Performance Standard 40 CFR Part 60 subpart DD: *Standards of Performance of Grain Elevators* does not apply to this installation because the maximum permanent grain storage capacity is less than 2.5 million bushels.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Baghouses are being used to control the PM, PM₁₀, and PM_{2.5} emissions from the equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Potential emissions for PM are above de minimis levels but below major source levels.
- This installation is located in Lafayette 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 PM₁₀ are restricted below de minimis levels. PM emissions are above de minimis levels. However, there are no modeling standards for PM.

- Emission testing is not required for the equipment.
- A Basic Operating Permit application is not required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION / PROJECT DESCRIPTION

Ray-Carroll County Grain Growers, Inc. – Corder (herein referred to as Ray-Carroll) is seeking authority to construct a new grain elevator in Lafayette County. This is a new installation and therefore does not have any existing construction or operating permits. Ray-Carroll is taking a voluntary emission limitation below the de minimis level for PM₁₀. Potential emissions of PM will remain above de minimis levels, but there are no modeling standards in place for PM. Therefore, Ray-Carroll will not require an operating permit for this facility at this time. The following table (Table 1) lists the new equipment at the installation. The grain dryer will use propane as the fuel and has a MHDR equal to 37.86 MMBtu/hr. Ray-Carroll will receive grain by truck or rail and has the capability to ship by rail or truck. Maximum production is controlled by the receiving conveyor legs. The conveyor leg at the truck receiving pit has a MHDR of 560 tons per hour. The conveyor leg at the rail receiving pit has a MHDR of 1120 tons per hour. Combined, the two conveyance legs are rated with a MHDR of 1680 tons per hour. The potential emissions from receiving and shipping operations were evaluated using emission factors for grain receiving and shipping by truck. Emissions will be controlled at both receiving pits, as well as the receiving conveyance legs, by baghouse intakes located in the basement of the facility.

No operating or construction permits have been issued to Ray-Carroll from the Air Pollution Control Program.

Table 1: Installation Emission Units

Emission Unit	Description	MHDR	Units/hr
EU-1	Receiving Pit (Truck)	560.0	Tons
EU-2	Receiving Pit (Truck/Rail)	1120.0	Tons
EU-3	Grain Handling (building enclosure)	1680.0	Tons
EU-4	Storage Bin (vent)	1680.0	Tons
EU-5	Shipping (Truck/Rail)	2800.0	Tons
EU-6	Column Dryer	280.0	Tons
EU-7	Haul Road #1 (Unpaved Receiving Road)	53.99	VMT
EU-8	Haul Road #2 (Unpaved Shipping Road)	53.99	VMT
EU-9	Haul Road #3 (Paved Road)	38.57	VMT

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. Haul road emissions were calculated using AP-42, Section 13.2.2, *Unpaved Roads*, November 2006. Non-PM₁₀ emissions from the grain dryer were calculated using AP-42 Section 1.5.1, *Liquefied Petroleum Gas Combustions*, July 2008.

The following table (Table 2) provides an emissions summary for this project. Existing potential emissions were not available because this is a new facility. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). Ray-Carroll proposed a 70% capture rate for receiving baghouses. The control efficiency of the baghouse is assumed to be 99.5% for PM₁₀ and 99.0% for PM_{2.5}. The dust collected in the baghouse is routed to an enclosed dust bin system. The vent on the dust bin is routed back to the baghouse. When the dust bin is full, the dust collected will be loaded out to rail or truck by the loadout conveyor. The loadout emissions from the dust are accounted for in the MHDR of the loadout emissions of grain. A PM₁₀ control efficiency of 90% and PM_{2.5} control efficiency of 40% is used in the calculation of unpaved haul-road emission because of the surfactant spray that will be used and documented. Ray-Carroll estimates that the percentage of straight trucks entering the facility does not exceed 10%. For the haul road and grain receiving emissions calculation, Ray-Carroll proposed using a 50/50 split of straight to hopper trucks to avoid record keeping requirements.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/A	N/A	2041.52	42.93
PM ₁₀	15.0	N/A	N/A	713.29	<15
PM _{2.5}	10.0	N/A	N/A	149.51	3.14
SOx	40.0	N/A	N/A	2.72	N/A
NOx	40.0	N/A	N/A	23.56	N/A
VOC	40.0	N/A	N/A	1.81	N/A
CO	100.0	N/A	N/A	13.59	N/A
HAPs	10.0/25.0	N/A	N/A	0.31	N/A
GHG mass	250.0	N/A	N/A	22,653	N/A
CO ₂ e	100,000.	N/A	N/A	23,165	N/A

N/A = Not Applicable

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM are above de minimis levels but below major source levels. PM₁₀ emissions are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Ray-Carroll County Grain Growers, Inc. 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

- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405*
- *Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400*

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), 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 June 11, 2012, received July 12, 2012, 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.

Attachment A – PM₁₀ Compliance Worksheet

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

(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)
Month	Grain Handled (tons)		PM ₁₀ Emission Factor (lb/ton)	Monthly PM ₁₀ Emissions (pounds)	Monthly PM ₁₀ Emissions (tons)	Previous Month's 12-Month PM ₁₀ Emissions (tons)	Monthly PM ₁₀ Emissions from Previous Year (tons)	Current 12-Month PM ₁₀ Emissions (tons)
<i>Example 09/2012</i>	<i>Received</i>	<i>10,000</i>	<i>0.08777</i>	<i>877.7</i>	<i>0.578</i>	<i>2.0</i>	<i>1.0</i>	<i>1.578</i>
	<i>Dried</i>	<i>5,000</i>	<i>0.0557</i>	<i>278.5</i>				
<i>Example 10/2012</i>	<i>Received</i>	<i>10,000</i>	<i>0.08777</i>	<i>877.7</i>	<i>0.717</i>	<i>1.5781</i>	<i>0.578</i>	<i>1.717</i>
	<i>Dried</i>	<i>10,000</i>	<i>0.0557</i>	<i>557.0</i>				
	Received		0.08777					
	Dried		0.0557					
	Received		0.08777					
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	Received		0.08777					
	Dried		0.0557					

- a) Record the current date.
- b) Record this month's grain that has been processed by the grain receiving pit and grain column dryer.
- c) PM₁₀ emission factor for each process.
- d) Calculate using the following equation: (d) = (b) x (c).
- e) Calculate using the following equation: (e) = [(d) for grain receiving + (d) for grain drying] / 2,000
- f) Record the 12-month PM₁₀ emissions (h) from last month.
- g) Record the monthly PM₁₀ emissions (e) from this month last year.
- h) Calculate the new 12-month PM₁₀ emissions using the following equation: (h) = (e) + (f) – (g)

A 12-month rolling total less than 15.0 tons of PM₁₀ 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 Sheets
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	
CFR	Code of Federal Regulations	National Emissions Standards for Hazardous Air Pollutants
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	NSPS	New Source Performance Standards
CO_{2e}	carbon dioxide equivalent	NSR	New Source Review
COMS	Continuous Opacity Monitoring System	PM	particulate matter
CSR	Code of State Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
dscf	dry standard cubic feet	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
EQ	Emission Inventory Questionnaire	ppm	parts per million
EP	Emission Point	PSD	Prevention of Significant Deterioration
EPA	Environmental Protection Agency	PTE	potential to emit
EU	Emission Unit	RACT	Reasonable Available Control Technology
fps	feet per second	RAL	Risk Assessment Level
ft	feet	SCC	Source Classification Code
GACT	Generally Available Control Technology	scfm	standard cubic feet per minute
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	tpy	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		

Mr. Tim Phillips
Operations Manager
Ray-Carroll County Grain Growers, Inc.
807 West Main
Richmond, MO 64085

RE: New Source Review Permit - Project Number: 2012-07-030

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 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 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 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: Kansas City Regional Office
PAMS File: 2012-07-030

Permit Number: