

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: **062019-009**

Project Number: 2019-02-037
Installation Number: 177-0021

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

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

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

Installation Address: 202 East Main Street, Hardin, MO 64035

Location Information: Ray County, S33, T52N, R26W

Application for Authority to Construct was made for:
Installation of a new grain elevator and the construction of an additional haul road. 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.

Director or Designee
Department of Natural Resources

JUN 13 2019

Effective Date

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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of startup of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 source(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 using the contact information below.

Contact Information:

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:

<http://dnr.mo.gov/regions/>

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 to 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 (3)(E). "Conditions required by permitting authority."

Ray-Carroll County Grain Growers, Inc.
Ray County, S33, T52N, R26W

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 grain handling operations stated in Table 2.
 - B. Ray-Carroll County Grain Growers, Inc. shall develop and use forms to demonstrate compliance with Special Condition 1.A. using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
2. **Haul Road Control-Chemical Dust Suppressant Usage**
 - A. Ray-Carroll County Grain Growers, Inc. shall apply a chemical dust suppressant agent to control the emission of PM₁₀ from the fugitive emission sources on the following haul roads. Ray-Carroll County Grain Growers, Inc. shall apply this chemical dust suppressant agent, as necessary, to maintain the high level of PM₁₀ emission control (i.e. 90%) predicted for these sources or whenever conditions exist that would allow the "visible emission" of particulate matter from these sources. This chemical dust suppressant agent shall also be applied whenever conditions exist that would allow visible fugitive emissions from these sources to enter the ambient air beyond the property boundaries.
 - 1) Unpaved Haul Road 4017 between the new and existing main elevators (0.3 miles)
 - 2) Unpaved Haul Road 4018 starting at the new elevator and extending northeast (0.3 miles)
 - B. The chemical dust suppressant agent shall be applied to the above fugitive emission sources at the manufacturer's recommended application rate (i.e. at least 0.5 gallons per square yard of surface area) for the specific dust control agent (i.e. Magnesium Chloride, Calcium Chloride, AE-P Cutback Asphalt Emulsion or MC-30 Cutback Asphalt) to be used at this site.

SPECIAL CONDITIONS:

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

- C. The installation shall keep the following records, with the plant, for not less than five years and shall make these records available to Department of Natural Resources' personnel upon request:
 - 1) The estimated surface area of the unpaved haul roads and vehicle traffic areas
 - 2) The time, date and the approximate amount of material applied for each application of the chemical dust suppressant agent on the above sources
 - D. Records of breakdowns and repairs for the equipment used to apply the chemical dust suppressant agent.
 - E. If the installation desires to use an alternate chemical dust suppressant agent, the installation shall submit this request, in writing, to the Air Pollution Control Program's Compliance/Enforcement Section for approval. Upon Air Pollution Control Program approval, this alternate chemical dust suppressant agent shall also be applied to the above fugitive emission sources at the manufacturer's recommended dosage rate for this new material. The installation shall also keep a record of the manufacturer's recommended dosage rate for this new chemical dust control agent with the plant and shall make this information available to Department of Natural Resources' personnel upon request.
 - F. The installation shall conduct and record the results of periodic visual inspections on the unpaved roads controlled by a chemical dust suppressant agent(s). This visual inspection(s) shall examine and note the condition of the road surface(s) especially for signs of wear (surface potholes, wash-boarding, ruts, etc.) to help determine the effectiveness of the dust control agent(s) being used and when the material needs to be reapplied to maintain the high level of control efficiency predicted for the above sources.
3. Control Device Requirement-Ventilation System & Baghouse
- A. Ray-Carroll County Grain Growers, Inc. shall control emissions from the following equipment using baghouses as specified in the permit application.
 - 1) EP 301A Straight Truck and Hopper Receiving
 - 2) EP 301B Straight Truck and Hopper Receiving
 - 3) EP 303 Loadout Bin
 - 4) EP 306 Grain Handling
 - B. Ray-Carroll County Grain Growers, Inc. shall operate the ventilation system at all times when grain is being received and loaded out.

SPECIAL CONDITIONS:

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

- C. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications.
 - D. The baghouses 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.
 - E. 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).
 - F. Ray-Carroll County Grain Growers, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours, while the equipment is operating. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - G. Ray-Carroll County Grain Growers, Inc. shall maintain a copy of the baghouse manufacturer's performance warranty on site.
 - H. 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. Haul Road Control – Paving
- A. Ray-Carroll County Grain Growers, Inc. shall maintain as paved the following haul roads with asphalt, concrete, or other materials approved by the Missouri Air Pollution Control Program:
 - 1) Haul Road 4011A west of office from E Main Street to Haul Road 4011B (0.02 miles)
 - 2) Haul Road 4011B south of office from SE 3rd Street to SE 1 St Street (0.08 miles)
 - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.

SPECIAL CONDITIONS:

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

- C. Ray-Carroll County Grain Growers, Inc. shall periodically water, wash, or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is in operation.
5. 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.
 - B. Ray-Carroll County Grain Growers, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, 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: 2019-02-037
Installation ID Number: 177-0021
Permit Number: 062019-009

Installation Address:

Ray-Carroll County Grain Growers, Inc.
202 East Main Street
Hardin, MO 64035

Parent Company:

Ray-Carroll County Grain Growers, Inc.
807 Main Street
Richmond, MO 64085

Ray County, S33, T52N, R26W

REVIEW SUMMARY

- Ray-Carroll County Grain Growers, Inc. has applied for authority to build a new grain elevator with a MHDR of 1,710 tph to function as the facility's primary location for receiving and loadout of grain and to construct two new haul roads.
- The application was deemed complete on March 8, 2019.
- HAP emissions are expected from the combustion of propane in the dryer.
- 40 CFR 60 Subpart DD, "Standards of Performance for Grain Elevators" applies to the equipment, because the maximum storage capacity is greater than 2.5 million bushels of grain
- 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 particulate emissions from truck receiving EP 301A and 301B, loadout bin EP 303, and grain handling EP 306 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 PM₁₀ are conditioned below de minimis levels.
- This installation is located in Ray County, an attainment/unclassified 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. PM emissions are above de minimis; however, there is no PM NAAQS. All other pollutants are conditional below de minimis.
- No operating permit is required for this installation
 - PM emissions are NSR minor source levels, but PM is not used for operating permit applicability.
 - The installation is a *country grain elevator*. Therefore, PTE for operating permit applicability is subject to the November 14, 1995, EPA memo *Calculating Potential to Emit (PTE) and Other Guidance for Grain Handling Facilities* and the April 2, 1996, Air Pollution Control Program memo *Definition of "Country Grain Elevator"*. Actual PM₁₀ emissions are much less than de minimis, and including 120% of actuals makes the potential emissions for operating permit applicability below de minimis by a wide margin. Also, the installation is not otherwise subject to an NSPS or MACT that requires an operating permit. Therefore, no operating permit is required. As the installation is not a named source, fugitive emissions are not included towards operating permit applicability. Therefore, the PTE for operating permit applicability could be even further reduced.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Ray-Carroll County Grain Growers, Inc. (RCCGG) operates a grain elevator and fertilizer terminal in Hardin, Missouri. The installation includes a main elevator and small elevator, constructed in accordance with Construction Permit Amendment Number 092002-003A, and a fertilizer terminal authorized under Construction Permit Number 032015-011.

The following New Source Review permits have been issued to Ray-Carroll County Grain Growers, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
092002-003A	Update emission points
032015-011	Installation of new fertilizer terminal
092002-003	Increase rail loadout capacity
0597-011	Installation of two new grain receiving pits, a new elevator leg, two new pit drags, and concrete storage.
0396-017	Installation of a dry bulk fertilizer blending installation
0395-023	Replacement of a railcar loadout swivel spout
0694-013	Replacement of grain dryer

PROJECT DESCRIPTION

Ray-Carroll County Grain Growers, Inc. has applied for authority to build a new grain elevator to function as the facility's primary location for receiving and loadout of grain. The existing elevators will function as supplementary locations for receiving and storage of grain, with the ability to transfer grain from the existing main elevator to the new elevator for loadout. No changes will be made to the small elevator, existing main elevator, or fertilizer plant for the sake of this permit. However, at the same time of this permit's creation, equipment from the existing main elevator will be repurposed for use at the new elevator as stated in permit amendment #092002-003B. The new elevator at the Hardin installation will predominantly receive grain by truck. The grain will be stored, dried, and loaded out via truck and rail. The construction of the new elevator will also include a new unpaved haul road through the facility with an estimated total length of 0.6 miles.

Receiving of grain from trucks will occur in the new receiving building and railcar receiving will occur at the pit located by the loadout spout. The new elevator will be capable of receiving grain at both truck receiving pits and the railcar receiving area at the same time, however, it will not be able to receive grain from a railcar and loadout grain at the same time. In addition, rail receiving will only be used for unloading of railcars that fail quality control testing during grain loadout. Based on operations at similar grain elevators, RCCGG anticipates receiving approximately 90% of the grain by hopper truck with the remainder coming from straight trucks, however, for purposes of estimating emissions, the calculations conservatively assume 50% of receiving through hopper truck.

The maximum capacity of the drag conveyor and leg for each truck lane is 855 tons per hour (tph). Rail receiving will use the 570 tph elevator leg used for the grain dryer. The new elevator will also receive grain that is transferred from the existing elevator, but the total maximum rate of receiving cannot physically exceed 1,710 tph. These rates were used as the basis for emission calculations for the facility. Emissions from the new grain receiving pit are given a 50% capture efficiency, are controlled by a baghouse, and partially enclosed inside a building with large garage doors open on either end. This receiving pit will be under negative pressure and ventilated to the baghouse. Conveying operations from the receiving pits to the storage silos are completely enclosed. This receiving area bottlenecks the operation to 1,710 tons per hour. This is because this is the combined flow rate of both truck receiving areas (EP 301A/B). The rail receiving area (EP 301C) is at the same location as both loadout areas (EP 305A/B) and cannot occur at the same time, so it was not taken into account for the MHDR.

From the receiving pits, the grain will be transported by drag conveyors to one of two elevator legs, which will transport the grain to the top of the elevator through the headhouse. The grain may be processed through a gravity cleaner, which was repurposed from the existing main elevator (as stated in permit amendment #092002-003B). There are no vents on the cleaner and the conveyance to and from the cleaner is fully enclosed and connected to a baghouse. The fines collected in the cleaners will be collected in one of two fines bins based on the material (corn or beans) processed, and recycled back into storage. Following the cleaners, the grain will be transported to

new storage consisting of a 1.2 million bushel bin and nine silos; 4-110,500 bushel silos, 2-455,000 bushel silos, 2-10,000 bushel silos, and 1-28,500 bushel silo. As necessary, grain can be conveyed through a new grain dryer to remove moisture and back into storage or directly to loadout through a third elevator leg.

Grain will be loaded out at the elevator to both rail and truck, with the majority of grain loaded out by rail. The grain will be conveyed from new storage to one of two elevator legs and then into the new loadout bin. The grain can also be conveyed directly from the receiving pit to the elevator legs and into the new loadout bin. Additionally, the facility will be able to convey grain from the existing main elevator to the new loadout bin via the repurposed conveyor (was EP 107, but is now EP 303) connecting the two elevators. The loadout bin will discharge into a scale prior to the grain being loaded to either truck or rail. There will be one loadout spout at the new elevator, consequently, grain can only be loaded to rail or truck at any one time. The maximum capacity of the loadout spout is 2,280 tph, however, the facility will not load to a truck at a rate faster than 855 tph to avoid blowing out the tires on the truck. This lower rate was used as the basis for emission calculations for the facility. There is a ventilation system which captures emissions from grain handling, the loadout bin, and the scale, and routes the emissions to a baghouse for control

RCCGG will install a new column grain dryer as part of the project. The proposed dryer will process up to 171 tph of grain. The dryer will be fueled by propane at a rate of 65.8 million British Thermal Units per hour (MMBTU), with the use of a heat reclamation package, which will reduce the propane usage rate by 7%.

Below, Table 2 lists the emission points associated with this project including those located at the new elevator, and the haul roads that will be used. MHDR specific to this project are listed.

Table 2: Project Emission Points

Location	Emission Point	Current Permit Name/ Description	Proposed Permit Name/ Description	True MHDR (TPH)	Equivalent Bottlenecked MHDR (TPH)	Comment
New Elevator	EP301A		Truck Receiving Pit 1	855	855	New Emission Unit
New Elevator	EP301B		Truck Receiving Pit 2	855	855	New Emission Unit
New Elevator	EP301C		Rail Receiving Pit	855	0	New Emission Unit
New Elevator	EP302		New Grain Storage	1,710	0	New Emission Unit
New Elevator	EP 303		Loadout Bin	1,710	1,710	New Emission Unit
New Elevator	EP 304A		Grain Dryer (Grain Processing)	171	171	New Emission Unit (6,000 bushel/hr)

New Elevator	EP 304B		Grain Dryer (Fuel Combustion)	65.8 MMBTUH	61.2 MMBTUH	New Emission Unit (Heat recovery unit will reduce fuel by 7%)
New Elevator	EP305A		Loadout (to rail)	2,280	1,417.5	New Emission Unit
New Elevator	EP 305B		Loadout (to truck)	855	855	New Emission Unit
Location	Emission Point	Current Permit Name/Description	Proposed Permit Name/Description	True MHDR (TPH)	Equivalent Bottlenecked MHDR (TPH)	Comment
New Elevator	EP 306		Receiving Legs, Cleaner, and Loadout Scale	1,710	1,710	New Emission Unit
Haul Road	HR 4011A	Haul Road	<i>No Change</i>	2.5 VMT ¹	2.5 VMT ¹	Emissions Increase
Haul Road	HR 4011B	Haul Road	<i>No Change</i>	8.9 VMT ¹	8.9 VMT ¹	Emissions Increase
Haul Road	HR 4017		Haul Road	29.9 VMT	29.9 VMT	New Haul Road
Haul Road	HR 4018		Haul Road	39.2 VMT	39.2 VMT	New Haul Road

¹MHDR for HR 4011A/B listed in Table 2 are for the New Elevator related emissions only

Below, Table 3 lists emission points at the main, small, and new elevators located at the Hardin site. The highlighted emission points were previously existing main elevator emissions points, but are being removed in permit amendment #092002-003B (Project Number AP2019-05-004) simultaneously with this permit.

Table 3: Plant-wide Emission Points

Location	Emission Point	Current Permit Name/Description	Proposed Permit Name/Description	True MHDR (TPH)	Equivalent Bottlenecked MHDR (TPH)	Comment
Main elevator	EP101A	Truck Receiving Pit 1	Truck Receiving Pit 1	285	285	10,000 Bushel per hour
Main elevator	EP101B	Truck Receiving Pit 2	Truck Receiving Pit 2	427.5	427.5	15,000 Bushel per hour
Main elevator	EP101C	Rail Receiving	Permanently Removed From Operation			
Main elevator	EP102A	Grain dryer - grain processed	Permanently Removed From Operation			
Main elevator	EP102B	Grain dryer - fuel combustion	Permanently Removed From Operation			
Main elevator	EP103	Loadout to Truck	Loadout to Truck	150	150	
Main elevator	EP107	Loadout to Railcar	Transfer to Loadout Bin (from existing elevator)	1,710	562.5	60,000 Bushel per hour (Bin controlled by baghouse)
Main elevator	EP109	Storage Bins	Storage Bins	712.5	712.5	

Main elevator	EP110	Dried Grain Storage	Permanently Removed From Operation			
Main elevator	EP111	Rail Scale	Permanently Removed From Operation			
New Elevator	EP112	Cleaner	Permanently Removed From Operation - existing cleaner moved to new elevator. No vents on the cleaners and ducting to and from cleaner is enclosed.			
Location	Emission Point	Current Permit Name/ Description	Proposed Permit Name/ Description	True MHDR (TPH)	Equivalent Bottlenecked MHDR (TPH)	Comment
New Elevator	EP113	Fines Bin	Fines Bins	85.5	85.5	3,000 Bushel per hour anticipated - Moving to new elevator
Main elevator	EP114	Loadout Fines to Truck	Permanently Removed From Operation - recycle fines back into process			
New Elevator	EP301A		Truck Receiving Pit 1	855	855	New Emission Unit
New Elevator	EP301B		Truck Receiving Pit 2	855	855	New Emission Unit
New Elevator	EP301C		Rail Receiving Pit	855	0	New Emission Unit
New Elevator	EP302		New Grain Storage	1,710	0	New Emission Unit
New Elevator	EP 303		Loadout Bin	1,710	1,710	New Emission Unit
New Elevator	EP 304A		Grain Dryer (Grain Processing)	171	171	New Emission Unit (6,000 bushel/hr)
New Elevator	EP 304B		Grain Dryer (Fuel Combustion)	65.8 MMBTUH	61.2 MMBTUH	New Emission Unit (Heat recovery unit will reduce fuel by 7%)
New Elevator	EP305A		Loadout (to rail)	2,280	1,417.5	New Emission Unit
New Elevator	EP 305B		Loadout (to truck)	855	855	New Emission Unit
New Elevator	EP 306		Receiving Legs, Cleaner, and Loadout Scale	1,710	1,710	New Emission Unit
Small elevator	EP201B	Small elevator receiving pit(hopper truck)	<i>No Change</i>	150	150	No Change
Small elevator	EP203	Loadout to Truck at small elevator	<i>No Change</i>	150	150	No Change
Small elevator	EP204	Small elevator grain handling	<i>No Change</i>	150	150	No Change
Small elevator	EP205	Small elevator storage bins	<i>No Change</i>	150	150	No Change

Haul Road	HR 4011A	Haul Road	<i>No Change</i>	3.8 VMT	3.8 VMT	Emissions Increase
Haul Road	HR 4011B	Haul Road	<i>No Change</i>	13.8 VMT	13.8 VMT	Emissions Increase
Haul Road	HR 4012	Haul Road	<i>No Change</i>	1.0 VMT	1.0 VMT	No Change
Haul Road	HR 4013A	Haul Road	<i>No Change</i>	1.9 VMT	1.9 VMT	No Change
Location	Emission Point	Current Permit Name/ Description	Proposed Permit Name/ Description	True MHDR (TPH)	Equivalent Bottlenecked MHDR (TPH)	Comment
Haul Road	HR 4013B	Haul Road	<i>No Change</i>	4.4 VMT	4.4 VMT	No Change
Haul Road	HR 4014	Haul Road	<i>No Change</i>	0.2 VMT	0.2 VMT	No Change
Haul Road	HR 4015	Haul Road	<i>No Change</i>	0.2 VMT	0.2 VMT	No Change
Haul Road	HR 4017		Haul Road	29.9 VMT	29.9 VMT	New Haul Road
Haul Road	HR 4018		Haul Road	39.2 VMT	39.2 VMT	New Haul Road

EMISSIONS/CONTROLS EVALUATION

The emission factors 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 & Processes*, Table 8.9.1-1, May 1998. Emission factors for the unpaved and paved haul roads were taken from AP-42, Section 13.2.2, *Miscellaneous Sources, Unpaved Roads*, November 2006, and Section 13.2.1, *Miscellaneous Sources, Paved Roads*, January 2011, respectively. Emission factors for the propane combustion were taken from AP-42, Section 1.5, *Liquefied Petroleum Gas Combustion*, July 2008.

Receiving trucks at the new elevator are estimated to be 50% hopper and 50% straight. Therefore, the average truck was estimated to be 11.5 tons when empty and 33.25 tons when arriving full. Loadout trucks at the new elevator will also be partially hopper and straight trucks, but a worst-case scenario of 100% hopper trucks that are 13 tons when empty and 40 tons when full was used for calculations

Table 4: Emissions Summary provides an emissions summary for this project. The existing potential emissions are taken from the most recent permit. The existing actual emissions are taken from the 2018 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). Conditioned emissions of the application represent the potential to emit after taking a de minimis limit on particulate matter less than ten microns in aerodynamic diameter. New installation conditioned potential emissions represent the updated potential to emit from all of the on-site equipment and operations included in previous permits.

Table 4: Emissions Summary (tpy)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (2018 EIQ)	Potential Emissions of the Project	Conditioned Emissions of the Application	New Installation Conditioned Potential
PM	25.0	117.70	N/D	1804.37	40.32	158.02
PM ₁₀	15.0	<30.00	11.2565	400.54	<15.00	<45.00 ¹
PM _{2.5}	10.0	8.16	2.2603	99.77	2.25	10.41
SO _x	40.0	1.07	N/A	N/A	N/A	1.07
NO _x	40.0	11.12	N/A	N/A	N/A	11.12
VOC	40.0	0.37	N/A	N/A	N/A	0.37
CO	100.0	5.77	N/A	N/A	N/A	5.77
GHG (CO _{2e})	N/A	N/A	N/A	N/A	N/A	N/A
GHG (mass)	N/A	N/A	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	0.32	N/A	N/A	0.50	0.80

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 PM₁₀ are 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
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170

¹ Representative of three different 15 ton limits and not a single 45 ton limit. These additional limits were previously stated in Permit #032015-011 and #092002-003.

- *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 Standard (NSPS) 40 CFR 60 Subpart DD, "Standards of Performance for Grain Elevators" applies to the equipment.
- *No MACT Regulations (10 CSR 10-6.075) apply.*
- *No Emission Standards for Hazardous Air Pollutants (10 CSR 10-6.080) apply.*
- *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 (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 21, 2019, received February 21, 2019, designating Ray-Carroll County Grain Growers, Inc. as the owner and operator of the installation.

Attachment A: PM₁₀ Compliance Worksheet

Ray-Carroll County Grain Growers, Inc.
 Ray County, S33, T52N, R26W
 Project Number: 2019-02-037
 Installation ID Number: 177-0021
 Permit Number: **062019-009**

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

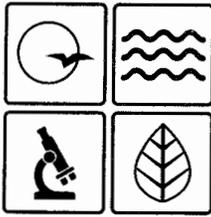
Process Description	Emission Point	(a)	(b)	(c)	(d)
		Monthly Throughput (tons)	Composite Emission Factor (lb/ton)	SSM PM ₁₀ Emissions (lbs)	Monthly PM ₁₀ Emissions (lbs)
Grain Received at New Elevator	EP-301A, EP-301B, EP-301C		0.0415		
Grain Dried at New Elevator	EP-304A		0.0578		
(e) Total Monthly PM₁₀ Emissions (lbs)					
(f) Total Monthly PM₁₀ Emissions (tons)					
(g) 12-Month Rolling Total PM₁₀ Emissions (i) from Previous Month's Attachment A (tons)					
(h) Total Monthly PM₁₀ Emissions (f) from Previous Year's Attachment A (tons)					
(i) Current 12-Month Rolling Total PM₁₀ Emissions (tons) (i) = [(f) + (g) - (h)]					

- (a) Record this month's throughput.
- (b) Composite Emission Factor is the total emission factor of each process at this installation.
- (c) Startup, shutdown, and malfunction emissions as reported to the Air Pollution Control Program's Compliance/Enforcement section according to the provisions of 10 CSR 10-6.050 for the month
- (d) Multiply the Monthly Throughput (a) by the respective Composite Emission Factor (b), then add the SSM PM₁₀ Emissions (c).
- (e) Sum both individual Monthly PM₁₀ Emissions.
- (f) Divide the Total Monthly PM₁₀ Emissions (e) by 2,000.
- (g) Record the 12-Month Rolling Total PM₁₀ Emissions (i) from the Previous Month's Attachment A.
- (h) Record the Total Monthly PM₁₀ Emissions (f) from the Previous Year's Attachment A.
- (i) Calculate the Current 12-Month Rolling Total PM₁₀ Emissions. A total less than **15.0 tons** indicates compliance

APPENDIX A

Abbreviations and Acronyms

%	percent	Mgal	1,000 gallons
°F	degrees Fahrenheit	MW	megawatt
acfm	actual cubic feet per minute	MHDR	maximum hourly design rate
BACT	Best Available Control Technology	MMBtu	Million British thermal units
BMPs	Best Management Practices	MMCF	million cubic feet
Btu	British thermal unit	MSDS	Material Safety Data Sheet
CAM	Compliance Assurance Monitoring	NAAQS	National Ambient Air Quality Standards
CAS	Chemical Abstracts Service	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CEMS	Continuous Emission Monitor System	NO_x	nitrogen oxides
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	carbon monoxide	NSR	New Source Review
CO₂	carbon dioxide	PM	particulate matter
CO_{2e}	carbon dioxide equivalent	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
COMS	Continuous Opacity Monitoring System	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
CSR	Code of State Regulations	ppm	parts per million
dscf	dry standard cubic feet	PSD	Prevention of Significant Deterioration
EIQ	Emission Inventory Questionnaire	PTE	potential to emit
EP	Emission Point	RACT	Reasonable Available Control Technology
EPA	Environmental Protection Agency	RAL	Risk Assessment Level
EU	Emission Unit	SCC	Source Classification Code
fps	feet per second	scfm	standard cubic feet per minute
ft	feet	SDS	Safety Data Sheet
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	SSM	Startup, Shutdown & Malfunction
hr	hour	tph	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		
m/s	meters per second		



Missouri Department of

dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

JUN 13 2019

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

RE: New Source Review Permit - Project Number: 2019-02-037

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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

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 RSMo. To appeal, you must file a petition with the Administrative Hearing Commission 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 Administrative Hearing Commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

Mr. Tim Phillips
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Dakota Fox 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:dfd

Enclosures

c: Kansas City Regional Office
PAMS File: 2019-02-037

Permit Number: **06 2 0 1 9 - 0 0 9**