

March 29, 2022

Jason Daugherty
Columbia Grain International
Chester Grain Elevator
PO Box 1969
Great Falls, MT 59403

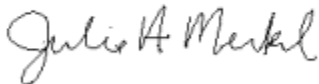
Sent via email: jdaugherty@columbiagrains.com

RE: Final Permit Issuance for MAQP #4673-01

Dear Mr. Daugherty:

Montana Air Quality Permit (MAQP) #4673-01 is deemed final as of 3/26/2022, by DEQ. This permit is for Grain Elevator. All conditions of the Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For DEQ,



Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626



Troy M. Burrows
Air Quality Scientist
Air Quality Bureau
(406) 444-1452

Montana Department of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau



Montana Air Quality Permit #4673-01

Columbia Grain International
Chester Grain Elevator
SW ¼ of Section 19, Township 32 North, Range 6 East,
Liberty County, Montana
PO Box 1969
Great Falls, MT 59403

March 26, 2022

MONTANA AIR QUALITY PERMIT

Issued to: Columbia Grain International MAQP: #4673-01
Chester Grain Elevator Application Complete: 02/22/2022
PO Box 1969 Department's Decision Issued: 03/11/2022
Great Falls, MT 59403 Permit Final: 3/26/2022

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Columbia Grain International (Columbia), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Permitted Equipment

Columbia operates a truck to rail grain handling elevator and temporary flat grain storage facility known as the Chester Grain Elevator. The facility has a grain storage capacity of approximately 988,400 bushels (bu) of permanent storage and 4,000,000 bu of temporary flat storage. A complete list of the permitted equipment is included in Section I.A of the permit analysis.

B. Plant Location

The Chester Grain Elevator is located west of Chester, Montana and immediately north of US Highway 2. The legal description of the facility is the SW ¼ of Section 19, Township 32 North, Range 6 East, Liberty County, Montana.

C. Current Permit Action

On February 22, 2022, the Montana Department of Environmental Quality (DEQ) received an Administrative Amendment request for MAQP #4673-00 to change the name of the owner from Gavilon Grain, LLC to Columbia Grain International.

SECTION II: Conditions and Limitations

A. Emission Limitations

1. Columbia shall install, operate, and maintain the following emission control equipment in accordance with manufacturer's instructions to provide maximum pollution control (ARM 17.8.752):
 - a. Receiving pit baffles, baghouse dust filter with connection to truck receiving pits #1 and #2 and associated conveyor system (grain receiving);
 - b. 2-sided roofed enclosure on truck receiving pit #1 (grain receiving);

- c. Enclosure on internal grain handling equipment; including elevator legs and bucket conveyors, bin fill conveyors, reclaim conveyors, and distribution system (internal grain handling).
 - d. Telescoping loadout spout (railcar loading).
 - e. Pit baffles and enclosed reclaim conveyor (railcar reclaim pit).
 - f. Loadout drop sock (truck loading side taps).
2. Columbia shall fully enclose internal grain handling equipment at the grain elevator; including elevator legs and bucket conveyors, bin fill conveyors, reclaim conveyors and the distribution systems (ARM 17.8.749).
 3. Columbia shall vent the truck receiving pits and truck receiving conveyors to the baghouse dust filter (ARM 17.8.749).
 4. Columbia shall handle no more than 24,000,000 bushels of grain per rolling 12-month period within the grain elevator and permanent storage bins (ARM 17.8.749).
 5. Columbia shall receive by way of straight or hopper truck into the grain elevator no more than 12,000,000 bushels of grain per rolling 12-month period (ARM 17.8.749).
 6. Columbia shall receive by way of straight or hopper truck into flat temporary storage no more than 4,000,000 bushels of grain per rolling 12-month period (ARM 17.8.749).
 7. Columbia shall ship by way of truck or rail no more than 12,000,000 bushels of grain per rolling 12-month period (ARM 17.8.749).
 8. Columbia shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
 9. Columbia shall minimize product drop height during grain loading to and unloading from the flat temporary storage area to ensure compliance with the 20% opacity limitation in Section II.A.9 (ARM 17.8.749).
 10. Columbia shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
 11. Columbia shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.10 (ARM 17.8.749).

B. Testing Requirements.

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
2. The Montana Department of Environmental Quality (Department) may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Columbia shall supply DEQ with annual production information for all emission points, as required by DEQ in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to DEQ by the date required in the emission inventory request. Information shall be in the units required by DEQ. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Columbia shall notify DEQ of any construction or improvement project conducted, pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit***, change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to DEQ, in writing, 10 days prior to start-up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. All records compiled in accordance with this permit must be maintained by Columbia as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by DEQ, and must be submitted to DEQ upon request (ARM 17.8.749).
4. Columbia shall document, by month, the total amount of grain handled by the grain elevator. By the 25th of each month, Columbia shall total the grain handled for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.4. The information for the previous months shall be submitted along with the annual emissions inventory (ARM 17.8.749).
5. Columbia shall document, by month, the total amount of grain received into the grain elevator. By the 25th of each month, Columbia shall total the grain received for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.5. The

information for the previous months shall be submitted along with the annual emissions inventory (ARM 17.8.749).

6. Columbia shall document, by month, the total amount of grain received into flat temporary storage at this facility. By the 25th of each month, Columbia shall total the grain received for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.6. The information for the previous months shall be submitted along with the annual emissions inventory (ARM 17.8.749).
7. Columbia shall document, by month, the total amount of grain shipped by way of truck or rail at this facility. By the 25th of each month, Columbia shall total the grain shipped by way of truck or rail for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.7. The information for the previous months shall be submitted along with the annual emissions inventory (ARM 17.8.749).

D. Notification

Columbia shall provide DEQ with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Commencement of construction of the truck to rail grain elevator within 30 days after commencement of construction;
2. Actual start-up date of the truck to rail grain elevator within 15 days after the actual start-up; and
3. All compliance source tests, as required by the Montana Source Test Protocol and Procedures Manual.

SECTION III: General Conditions

- A. Inspection – Columbia shall allow DEQ’s representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (Continuous Emission Monitoring System (CEMS), Continuous Emission Rate Monitoring System (CERMS)) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Columbia fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Columbia of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by DEQ’s decision may request, within 15 days after DEQ renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay DEQ’s decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of DEQ’s decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, DEQ’s decision on the application is final 16 days after DEQ’s decision is made.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by DEQ at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Columbia may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.
- H. Duration of Permit – Construction or installation must begin, or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

Montana Air Quality Permit (MAQP) Analysis
Columbia Grain International – Chester Grain Elevator
MAQP #4673-01

I. Introduction/Process Description

Columbia Grain International (Columbia) operates a truck to railcar grain elevator referred to as the Chester Grain Elevator. The facility is located approximately one mile west of Chester, Montana and immediately north of US Highway 2. The legal description of the facility is the SW ¼ of Section 19, Township 32 North, Range 6 East, Liberty County, Montana.

A. Permitted Equipment

The Chester Grain Elevator consists of grain receiving, internal handling and loading, as well as two temporary flat grain storage areas. The facility has a grain storage capacity of approximately 988,400 bushels (bu) of permanent storage and 4,000,000 bu of temporary flat storage. Equipment used at this facility includes, but is not limited to, the following:

- Two (2) grain truck receiving pits - 38,000 bushels per hour (bu/hr) each;
- Grain handling equipment (elevator legs & conveyors) - 38,000 bu/hr;
- Grain silo storage bin(s) - Six (6) 161,000 bu capacity bins (permanent storage bins);
- Grain railcar loading equipment - 70,000 bu/hr;
- Two (2) grain truck loading side taps - 20,000 bu/hr;
- Portable conveyor (flat storage area) - 15,000 bu/hr;
- Dust control systems - Baghouse dust filter, receiving baffles, enclosed conveyors and receiving pit enclosure (truck receiving pit #1 only); and ,
- Associated grain handling equipment;

B. Source Description

The proposed truck to rail grain handling facility would be designed to receive grain from local farms and country elevators and then store the grain until it is shipped to market. The storage capacity of the facility would be approximately 4,988,400 bu. Locally grown grains would be hauled to the facility via truck, whereby the trucks would be routed to the receiving area of the elevator or the temporary flat storage area.

Trucks directed to the elevator would discharge grain into one of the receiving pits, equipped with baffles and dust aspiration to a baghouse. Air with entrained dust particles from the truck receiving pits and receiving conveyor system will be collected and routed through ducts to a baghouse dust filter before exhausting to the atmosphere. All transferring of grain through the elevator will be conveyed through enclosed belt conveyors and elevator bucket legs. The main elevator legs and conveyor system is fully enclosed to minimize the release of dust to the atmosphere. Enclosed conveyors and bucket elevators, each rated at 38,000 bu/hr, will route the

grain into the storage silos, or to a bulk weigher located over the railroad track spur. An enclosed belt conveyor will be used to transport grain from below the storage silos back into the elevator legs for distribution. The grain is shipped out by either truck or railcar.

Trucks directed to the temporary flat storage area would discharge grain into one of the two flat storage areas, whereby the grain would be placed into storage piles via a portable conveyor. Grain will be removed annually from storage and loaded directly into trucks for shipment or transport to the elevator for distribution to truck or rail loadout.

C. Permit History

On August 20, 2011, Montana Department of Environmental Quality (DEQ) issued **MAQP #4673-00** to Gavilon Grain, LLC for the Chester Grain Elevator.

D. Current Permit Action

On February 22, 2022, DEQ received an Administrative Amendment request for MAQP #4673-00 to change the name of the owner from Gavilon Grain, LLC to Columbia Grain International. **MAQP #4673-01** replaces MAQP #4673-00.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Montana Department of Environmental Quality (Department). Upon request, DEQ will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8 - Subchapter 1, General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This section includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of DEQ, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by DEQ.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by DEQ, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

Columbia shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Testing Protocol and Procedures Manual is available from DEQ upon request.

4. ARM 17.8.110 Malfunctions. (2) DEQ must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter (PM)
2. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

Columbia must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate. (2) Under this section, Columbia shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
 4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.
 5. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). Subpart DD, Standards of Performance for Grain Elevators, indicates that grain terminal elevators that have a permanent storage capacity of more than 2.5 million U.S. bushels are subject to the requirements of this subpart. Columbia does not have a permanent storage capacity of 2.5 million bushels or more; therefore, NSPS Subpart DD does not apply to this facility.
- D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:
1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to DEQ. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.
 2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to DEQ by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by DEQ; and the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. DEQ may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.
- E. ARM 17.8, Subchapter 7 - Permit, Construction, and Operation of Air Contaminant Sources, including but not limited to:
1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits – When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. Columbia has PTE greater than 25 tpy of particulate matter (PM) and particulate matter with an aerodynamic diameter less than 10 microns (PM₁₀); therefore, an air quality permit is required.
3. ARM 17.8.744 Montana Air Quality Permits – General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits – Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units – Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. An affidavit of publication of public notice was not required for the current permit action because the permit change is considered an administrative permit change.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by DEQ must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability, which is technically practicable and economically feasible, except that Best Available Control Technology (BACT) shall be utilized. The required BACT analysis is included in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by DEQ at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Columbia of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*

10. ARM 17.8.759 Review of Permit Applications. This rule describes DEQ's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
 11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
 12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).
 13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
 14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to DEQ.
- F. ARM 17.8 - Subchapter 8, Prevention of Significant Deterioration of Air Quality, including, but not limited to:
1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this chapter.
 2. ARM 17.8.818 Review of Major Stationary Source and major Modifications – Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this chapter would otherwise allow.

This facility is not a major stationary source because it is not a listed source and does not have the PTE more than 250 tons tpy or more of any air pollutant from point sources of emissions.

G. ARM 17.8 - Subchapter 12, Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
 - a. PTE > 100 tpy of any pollutant;
 - b. PTE > 10 tpy of any one hazardous air pollutant (HAP), PTE > 25 tpy of a combination of all HAPs, or lesser quantity as DEQ may establish by rule; or
 - c. PTE > 70 tpy of PM₁₀ in a serious PM₁₀ non-attainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #4673-01 for the Chester Grain Elevator, the following conclusions were made:
 - a. The facility's PTE is less than 100 tpy for all criteria pollutants.
 - b. The facility's PTE is less than 10 tpy of any one HAP and less than 25 tpy of all HAPs.
 - c. This source is not located in a serious PM₁₀ non-attainment area.
 - d. This facility is not subject to any current NSPS.
 - e. This facility is not subject to any current NESHAP.
 - f. This source is not a Title IV affected source or a solid waste combustion unit.
 - g. This source is not an EPA designated Title V source.

Based on these facts, DEQ determined that the Chester Grain Elevator would be a minor source of emissions as defined under Title V.

III. BACT Determination

A BACT determination is required for each new or modified source. Columbia shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT determination was not required for the current permit action because the permit change is considered an administrative permit change.

IV. Emissions Inventory

Emission Source	Emissions Tons/Year [PTE]					
	Uncontrolled Emissions			Controlled Emissions		
	PM	PM ₁₀	PM _{2.5}	PM	PM ₁₀	PM _{2.5}
Grain Receiving - Permanent Storage	32.40	10.62	1.80	25.38	8.32	1.41
Head House & Internal Grain Handling	21.96	12.24	2.09	21.96	12.24	2.09
Storage Bin Vents	9.00	2.27	0.40	9.00	2.27	0.40
Grain Shipping - Truck Loadout	15.48	5.22	0.88	15.48	5.22	0.88
Grain Receiving - Temporary Storage ⁽¹⁾	10.80	3.54	0.60	10.80	3.54	0.60
Pile Formation - Temporary Storage ⁽¹⁾	0.05	0.02	0.003	0.05	0.02	0.003
Wind Erosion - Temporary Storage ⁽¹⁾	1.49	0.74	0.30	1.49	0.74	0.30
Unpaved Roadways - Haul Roads ⁽¹⁾	4.16	1.29	0.128	4.16	1.29	0.128
Paved Roadways - Haul Roads ⁽¹⁾	1.51	0.30	0.07	1.51	0.30	0.07
TOTAL EMISSIONS ►	96.85	36.25	6.27	89.82	33.95	5.88
<p>1. Fugitive emission inventory reflects controlled emissions pursuant to federally-enforceable requirements established under ARM 17.8.308.</p> <p>PM, particulate matter PM₁₀, particulate matter with an aerodynamic diameter of 10 microns or less PM_{2.5}, particulate matter with an aerodynamic diameter of 2.5 microns or less bu, Bushel lbs, Pounds</p>						

Columbia Grain International - Grain Handling Facility

Grain Properties: 0.03 tons/Bushel [bu]
 60.00 lbs/Bu

Throughput Capacity

Temporary: 4,000,000 bu/year 120,000 tons/year
 Permanent: 12,000,000 bu/year 360,000 tons/year

Grain Handling - Permanent Storage:

Grain Receiving - Straight Truck [SCC 3-02-005-51]

Throughput Capacity: 12,000,000 bu/year 360,000 tons/year

Control Equipment: Baghouse Filter

Estimated Control Efficiency (C_e): 21.9 % Capture Efficiency [Receiving Pit Baffles Only]
 99.0 % Control Efficiency [Baghouse]
 21.7% % Capture and Control

PM Emissions:

Emission Factor 0.18 lbs/ton grain [AP-42 Table 9.9.1-1, 3/03]
 Calculations (0.18 lbs/ton) * (360000 tons/year) * (0.0005 lbs/ton) = 32.40 tons/year (uncontrolled)
 (32.40 tons/year) * (1 - 0.217 C_e) = 25.38 tons/year (controlled)

PM₁₀ Emissions:

Emission Factor 0.059 lbs/ton grain [AP-42 Table 9.9.1-1, 3/03]
 Calculations (0.059 lbs/ton) * (360000 tons/year) * (0.0005 lbs/ton) = 10.62 tons/year (uncontrolled)
 (10.62 tons/year) * (1 - 0.217 C_e) = 8.32 tons/year (controlled)

PM_{2.5}Emissions:

Emission Factor	0.010 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.01 \text{ lbs/ton}) * (360000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$ $(1.80 \text{ tons/year}) * (1 - 0.217 \text{ Ce}) =$	1.80 tons/year (uncontrolled) 1.41 tons/year (controlled)

Head House and Internal Grain Handling [SCC 3-02-005-30]

Throughput Capacity 24,000,000 bu/year 720,000 tons/year
Control Equipment: Uncontrolled

PM Emissions:

Emission Factor	0.061 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.061 \text{ lbs/ton}) * (720000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	21.96 tons/year (uncontrolled)

PM₁₀ Emissions:

Emission Factor	0.034 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.034 \text{ lbs/ton}) * (720000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	12.24 tons/year (uncontrolled)

PM_{2.5}Emissions:

Emission Factor	0.0058 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.0058 \text{ lbs/ton}) * (720000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	2.09 tons/year (uncontrolled)

Storage Bin Vents [SCC 3-02-005-40]

Throughput Capacity 24,000,000 bu/year 720,000 tons/year
Control Equipment: Uncontrolled

PM Emissions:

Emission Factor	0.025 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.025 \text{ lbs/ton}) * (720000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	9.00 tons/year (uncontrolled)

PM₁₀ Emissions:

Emission Factor	0.0063 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.0063 \text{ lbs/ton}) * (720000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	2.27 tons/year (uncontrolled)

PM_{2.5}Emissions:

Emission Factor	0.0011 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.0011 \text{ lbs/ton}) * (720000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	0.40 tons/year (uncontrolled)

Grain Shipping - Truck Loadout [SCC 3-02-005-60]*

* Assumes 100% shipment by truck as worst case scenario

Throughput Capacity: 12,000,000 Bu/year 360,000 tons/year

PM Emissions:

Emission Factor	0.086 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.086 \text{ lbs/ton}) * (360000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	15.48 tons/year (uncontrolled)

PM₁₀ Emissions:

Emission Factor	0.0290 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
Calculations	$(0.029 \text{ lbs/ton}) * (360000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$	5.22 tons/year (uncontrolled)

PM_{2.5}Emissions:

Emission Factor	0.00490 lbs/ton grain	[AP-42 Table 9.9.1-1, 3/03]
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Calculations $(0.0049 \text{ lbs/ton}) * (360000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$ 0.88 tons/year (uncontrolled)

Grain Handling - Temporary Storage:

Grain Receiving - Straight Truck [SCC 3-02-005-51]

Throughput Capacity: 4,000,000 bu/year 120,000 tons/year

PM Emissions:

Emission Factor 0.18 lbs/ton grain [AP-42 Table 9.9.1-1, 3/03]
 Calculations $(0.18 \text{ lbs/ton}) * (120000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$ 10.80 tons/year (uncontrolled)

PM₁₀ Emissions:

Emission Factor 0.059 lbs/ton grain [AP-42 Table 9.9.1-1, 3/03]
 Calculations $(0.059 \text{ lbs/ton}) * (120000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$ 3.54 tons/year (uncontrolled)

PM_{2.5} Emissions:

Emission Factor 0.010 lbs/ton grain [AP-42 Table 9.9.1-1, 3/03]
 Calculations $(0.01 \text{ lbs/ton}) * (120000 \text{ tons/year}) * (0.0005 \text{ lbs/ton}) =$ 0.60 tons/year (uncontrolled)

Grain Storage - Pile Formation

Throughput Capacity: 4,000,000 Bu/year 120,000 tons/year

Pile Multiplier: 2 [Pile Formation → Load-In & Load-Out]

Particulate Emissions:

Emission Factor $EF = k (0.0032) * (U/5)^{1.3} / (M / 2)^{1.4}$ [AP-42 13.2.4, 11/06]

where: EF, Emission Factor = lbs emitted / ton processed

k, Dimensionless Particle Size Multiplier PM = 0.74 [AP-42 13.2.4, 11/06]

k, Dimensionless Particle Size Multiplier PM₁₀ = 0.35 [AP-42 13.2.4, 11/06]

k, Dimensionless Particle Size Multiplier PM_{2.5} = 0.053 [AP-42 13.2.4, 11/06]

U, Mean Wind Speed (mph) = 11.5 [ASOS Data Great Falls, MT 1996-2006]

M, Material Moisture Content (%) = 15.5 [“Technology and Policy for Suppressing Grain Dust Explosions in Storage Facilities”, September 1995]

PM Emissions:

Emission Factor $EF = 0.74 (0.0032) * (11.5/5)^{1.3} / (15.5 / 2)^{1.4} =$ 0.0004 lbs/ton
 Calculations $(0.0004 \text{ lbs/ton}) * (120000 \text{ tons/year}) * (2 \text{ pile Transfers}) =$ 95.46 lbs/year
 $(95.46 \text{ lbs/year}) * (0.0005 \text{ tons/lbs}) =$ 0.05 TPY

PM₁₀ Emissions:

Emission Factor $EF = 0.35 (0.0032) * (11.5/5)^{1.3} / (15.5 / 2)^{1.4} =$ 0.0002 lbs/ton
 Calculations $(0.0002 \text{ lbs/ton}) * (120000 \text{ tons/year}) * (2 \text{ pile Transfers}) =$ 45.15 lbs/hr
 $(45.15 \text{ lbs/year}) * (0.0005 \text{ tons/lbs}) =$ 0.02 TPY

PM_{2.5} Emissions:

Emission Factor $EF = 0.053 (0.0032) * (11.5/5)^{1.3} / (15.5 / 2)^{1.4} =$ 0.00003 lbs/ton
 Calculations $(0.00003 \text{ lbs/ton}) * (120000 \text{ tons/year}) * (2 \text{ pile Transfers}) =$ 6.84 lbs/hr
 $(6.84 \text{ lbs/year}) * (0.0005 \text{ tons/lbs}) =$ 0.003 TPY

Storage Pile Wind Erosion

Maximum Storage Area: 6.1 acre

Particulate Emissions:

Emission Factor $EF = k * 1.7 * (s / 1.5) * [(365 - p) / 235] * f / 15$
[Air Pollution Engineering Manual - Air & Waste Management Association (APEM-AWMA)]
where: EF, Emission Factor = lbs-day emitted / acre of storage
k, Dimensionless Particle Size Multiplier PM = 1 [APEM-AWMA]
k, Dimensionless Particle Size Multiplier PM₁₀ = 0.5 [APEM-AWMA]
k, Dimensionless Particle Size Multiplier PM_{2.5} = 0.2 [APEM-AWMA]
s, Silt Content 0.4 [USDA Foreign Matter Limit-US 1 Grade Wheat]
p, Mean Precipitation Days [≥0.01 Inch] 110 [AP-42 13.2.1-2, 01/11]
f, Unobstructed Wind Speed [%] = 40.8 [SCRAM Met Data, Great Falls 1984-1992]

PM Emissions:

Emission Factor $EF = 1.0 * 1.7 * (0.4 / 1.5) * [(365 - 110) / 235] * 40.8 / 15 =$ 1.34 lbs-day/acre
Calculations (1.34 lbs/day) * (6.1 acres) = 8.16 lbs/day
(8.16 lbs/day) * (365 days/year) * (0.0005 tons/lbs) = 1.49 TPY

PM₁₀ Emissions:

Emission Factor $EF = 0.5 * 1.7 * (0.4 / 1.5) * [(365 - 110) / 235] * 40.8 / 15 =$ 0.67 lbs-day/acre
Calculations (0.67 lbs/day) * (6.1 acres) = 4.08 lbs/day
(4.08 lbs/day) * (365 days/year) * (0.0005 tons/lbs) = 0.74 TPY

PM_{2.5} Emissions:

Emission Factor $EF = 0.2 * 1.7 * (0.4 / 1.5) * [(365 - 110) / 235] * 40.8 / 15 =$ 0.27 lbs-day/acre
Calculations (0.27 lbs/day) * (6.1 acres) = 1.63 lbs/day
(1.63 lbs/day) * (365 days/year) * (0.0005 tons/lbs) = 0.30 TPY

Unpaved Roadways

Vehicle Miles Travelled [VMT]: 22364 VMT-year
Control Method: Water Application
Control Efficiency (Ce): 50%

Emission Factor $EF = [k(s/12)^a * (S/30)^d / (M/0.5)^c] - C * [(365 - p)/365]$ [AP-42 13.2.2, 11/06]

where: EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)
k, Empirical Constant PM = 6 [AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant PM₁₀ = 1.8 [AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant PM_{2.5} = 0.18 [AP-42 Table 13.2.2-2, 11/06]
s, Surface Material Silt Content (%) = 6.4 [AP-42 Table 13.2.2-1, 11/06]
S, Mean Vehicle Speed (MPH) = 10 [Applicant Provided Data]
a, Empirical Constant = 1 [AP-42 Table 13.2.2-2, 11/06]
c, Empirical Constant PM = 0.3 [AP-42 Table 13.2.2-2, 11/06]
c, Empirical Constant PM₁₀/PM_{2.5} = 0.2 [AP-42 Table 13.2.2-2, 11/06]
d, Empirical Constant PM = 0.3 [AP-42 Table 13.2.2-2, 11/06]
d, Empirical Constant PM₁₀/PM_{2.5} = 0.5 [AP-42 Table 13.2.2-2, 11/06]
M, Mean Surface Material Moisture Content = 6.52 [AP-42 Table 13.2.2-3, 11/06]
C, EF Vehicle Exhaust, Brake/Tire wear PM/PM₁₀ = 0.00047 [AP-42 Table 13.2.2-4, 11/06]
C, EF Vehicle Exhaust, Brake/Tire Wear PM_{2.5} = 0.00036 [AP-42 Table 13.2.2-4, 11/06]
p, Mean Precipitation Days [≥0.01 Inch] = 110 [AP-42 Figure 13.2.2-1, 11/06]

PM Emissions:

Emission Factor	$EF = [6.0 * (6.4/12)^{1.0} * (10/30)^{0.3} - 0.00047] * ((365-110/365) =$	0.74	lbs/VMT
Calculations	$(0.74 \text{ lbs/VMT}) * (22364 \text{ miles/year}) * (1 - 0.50 \text{ Ce}) =$	8317.74	lbs/year
	$(8,317.74 \text{ lbs/year}) * (0.0005 \text{ tons/lb}) =$	4.16	TPY

PM₁₀ Emissions:

Emission Factor	$EF = [1.8 * (6.4/12)^{0.5} * (10/30)^{0.2} - 0.00047] * ((365-110/365) =$	0.23	lbs/VMT
Calculations	$(0.23 \text{ lbs/VMT}) * (22364 \text{ miles/year}) * (1 - 0.50 \text{ Ce}) =$	2587.06	lbs/year
	$(2,587.06 \text{ lbs/year}) * (0.0005 \text{ tons/lb}) =$	1.29	TPY

PM_{2.5} Emissions:

Emission Factor	$EF = [0.18 * (6.4/12)^{0.5} * (10/30)^{0.2} - 0.00036] * ((365-110/365) =$	0.02	lbs/VMT
Calculations	$(0.02 \text{ lbs/VMT}) * (22364 \text{ miles/year}) * (1 - 0.50 \text{ Ce}) =$	256.26	lbs/year
	$(256.26 \text{ lbs/year}) * (0.0005 \text{ tons/lb}) =$	0.13	TPY

Paved Roadways:

Vehicle Miles Travelled [VMT]: 1636 VMT-year

Emission Factor	$EF = [k(sL)^{0.91} * (W)^{1.02}] * (1-p/4N)$	[AP-42 13.2.1, 01/11]
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where: EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)

- k, Particle Size Multiplier PM = 0.011 [AP-42 Table 13.2.1-1, 01/11]
- k, Particle Size Multiplier PM₁₀ = 0.0022 [AP-42 Table 13.2.1-1, 01/11]
- k, Particle Size Multiplier PM_{2.5} = 0.00054 [AP-42 Table 13.2.1-1, 01/11]
- sL, Mean Surface Material Silt Content [g/m²] = 7.4 [AP-42 Table 13.2.1-3, 01/11]
- W, Mean Vehicle Weight [tons] = 27.5 [Applicant Provided Data]
- p, Mean Precipitation Days [≥0.01 Inch] = 110 [AP-42 Figure 13.2.1-2, 01/11]

PM Emissions:

Emission Factor	$[0.011 * (7.4)^{0.91} * (27.5)^{1.02}] * (1-110 / (4*365) =$	1.85	lbs/VMT
Calculations	$(1.85 \text{ lbs/VMT}) * (1,636.00 \text{ miles/year}) =$	3021.88	lbs/year
	$(3,021.88 \text{ lbs/year}) * (0.0005 \text{ tons/lb}) =$	1.51	TPY

PM₁₀ Emissions:

Emission Factor	$[0.0022 * (7.4)^{0.91} * (27.5)^{1.02}] * (1-110 / (4*365) =$	0.369	lbs/VMT
Calculations	$(0.37 \text{ lbs/VMT}) * (1,636.00 \text{ miles/year}) =$	604.38	lbs/year
	$(604.38 \text{ lbs/year}) * (0.0005 \text{ tons/lb}) =$	0.30	TPY

PM_{2.5} Emissions:

Emission Factor	$[0.00054 * (7.4)^{0.91} * (27.5)^{1.02}] * (1-110 / (4*365) =$	0.091	lbs/VMT
Calculations	$(0.09 \text{ lbs/VMT}) * (1,636.00 \text{ miles/year}) =$	148.35	lbs/year
	$(148.35 \text{ lbs/year}) * (0.0005 \text{ tons/lb}) =$	0.07	TPY

V. Existing Air Quality

The Chester Grain Elevator is located in the SW ¼ of Section 19, Township 32 North, Range 6 East, Liberty County, Montana. The air quality of this area is classified as

unclassifiable/attainment for National Ambient Air Quality Standards (NAAQS) criteria pollutants, including particulate matter (PM₁₀/PM_{2.5}).

VI. Ambient Air Impact Analysis

The current action is an administrative amendment, incorporating a name and ownership change. As such, DEQ believes this action will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, DEQ conducted the following private property taking and damaging assessment.

YES	NO	
✓		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	✓	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	✓	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	✓	4. Does the action deprive the owner of all economically viable uses of the property?
	✓	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	✓	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	✓	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	✓	7a. Is the impact of government action direct, peculiar, and significant?
	✓	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	✓	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	✓	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, DEQ determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

This permitting action updates the permit to change the name of the owner via administrative amendment. Therefore, no environmental assessment is required.

Analysis Prepared By: Troy Burrows
Date: 3/10/2022