



Montana Department of
ENVIRONMENTAL **Q**UALITY

Brian Schweitzer, Governor

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November 27, 2012

Ms. Beth Pierson
Gavilon Grain, LLC
11 ConAgra Drive
Omaha, NE 68102

Dear Ms. Pierson:

Montana Air Quality Permit #4751-00 is deemed final as of November 27, 2012, by the Department of Environmental Quality (Department). This permit is for a grain elevator in Moore, Montana. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie Merkel
Air Permitting Supervisor
Air Resources Management Bureau
(406) 444-3626

Shawn Juers
Environmental Engineer
Air Resources Management Bureau
(406) 444-2049

JM:SJ
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #4751-00

Gavilon Grain, LLC
11 ConAgra Drive
Omaha, NE 68102

November 27, 2012



MONTANA AIR QUALITY PERMIT

Issued To: Gavilon Grain, LLC
11 ConAgra Drive
Omaha, NE 68102

MAQP: #4751-00
Application Complete: 10/15/2012
Preliminary Determination Issued: 10/17/2012
Department's Decision Issued: 11/9/2012
Permit Final: 11/27/2012
AFS #: 027-0011

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Gavilon Grain, LLC (Gavilon), 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

Gavilon owns and operates a grain elevator facility which is conservatively projected to handle no more than 10 million bushels per year. The facility consists of three elevators, a 1 million bushel storage bin covered with a tarp, a 2 million bushel ground pile, a portable propane-fired grain dryer, a diesel generator engine, and a portable grain screen/cleaner. The facility also has several unpaved haul roads.

Emissions sources and maximum rated throughputs are presented in the following manner:

- Grain Elevator Truck Unloading (Straight or Hopper Bottom Trucks)
 - Elevator 3: 25,000 bushels per hour (bu/hr)
 - Elevator 4: 10,000 bu/hr
 - Elevator 5: 20,000 bu/hr
- Grain Elevator Railcar Unloading
 - 10,000 bu/hr
- Grain Handling via covered conveyors
- Grain Storage
 - Storage Bin Vents – Elevator 3, Elevator 4, and Elevator 5
 - Tarp Covered Bin – 1 million bushel
 - Covered Ground Pile – 2 million bushels capacity at 15,000 bu/hr unloading rate
- Grain Loading – shipping and internal transfers
 - Elevator 3: 25,000 bu/hr
 - Elevator 4: 10,000 bu/hr
 - Elevator 5: 50,000 bu/hr
- Portable Grain Cleaning – 200 bu/hr
- Grain Dryer – 9 million British thermal units per hour (MMBtu/hr) heat input and 500 bu/hr grain drying throughput
- Unpaved Haul Roads
- De Minimis Friendly Generator Engine – limited to a maximum rating of 200 horsepower.

B. Plant Location

Gavilon's Moore Grain Elevator is located in the Southeast ¼ of Section 16, Township 14 North, Range 16 East, in Fergus County, Montana. The physical address is 117 1st Street Southwest, Moore, Montana, 59464.

Section II: Conditions and Limitations

A. Emission Limitations

1. Gavilon shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes (ARM 17.8.304).
2. Gavilon 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).
3. Gavilon shall utilize good work practices, such as utilizing choke flow operations and minimizing, to the extent practical, grain free-fall distances, during all grain handling, receiving and loading operations to minimize particulate emissions and opacity (ARM 17.8.752).
4. Gavilon shall properly operate and maintain enclosed conveyors for grain handling operations at Elevator 3 and Elevator 4 (ARM 17.8.752).
5. Gavilon shall utilize the existing oil suppression system to apply oil to inbound grain at elevator 5 (ARM 17.8.752).
6. Gavilon shall unload grain trucks at Elevator 3 and 5 utilizing receiving pits equipped with gravity actuated mechanical dust control baffles. Gavilon shall install a gravity-activated mechanical dust control baffle system on the existing truck receiving pits of Grain Elevator 3 and Grain Elevator 5 (ARM 17.8.752).
7. Gavilon shall install a gravity-activated mechanical dust control baffle system upon construction of a receiving pit at Grain Elevator 4 (ARM 17.8.752.)
8. Railcar unloading shall occur utilizing a receiving pit equipped with gravity actuated mechanical dust control baffles. Gavilon shall install a gravity-activated mechanical dust control baffle system for the railcar receiving pit (ARM 17.8.752).
9. Gavilon shall properly operate and maintain flexible socks for all truck loadout operations to minimize particulate emissions (ARM 17.8.752).
10. Gavilon shall properly operate and maintain a telescoping spout for all railcar loadout operations to minimize particulate emissions (ARM 17.8.752).
11. Gavilon shall receive by way of truck no more than 10,000,000 bushels of grain less the quantity of grain received by rail per rolling 12-month period (ARM 17.8.749).
12. Gavilon shall ship by way of truck or rail no more than 10,000,000 bushels of grain per rolling 12-month period (ARM 17.8.749).

13. Gavilon shall not clean more than 1,752,000 bushels of grain per rolling 12-month period (ARM 17.8.749).
14. Gavilon shall not dry more than 2,000,000 bushels of grain per rolling 12-month period (ARM 17.8.749).
15. Gavilon 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).
16. Gavilon 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.15 (ARM 17.8.749, ARM 17.8.752).
17. Gavilon shall not operate, or have on-site, more than 1 diesel generator engine. The maximum brake horsepower rating of the engine driving the electrical generator shall not exceed 200 horsepower (ARM 17.8.749).
18. Gavilon shall comply with all applicable standards and limitations, and the reporting, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart III; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Upon written request of the Department of Environmental Quality (Department), Gavilon shall conduct Method 9 opacity test(s) (ARM 17.8.105).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).
3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. Gavilon shall supply the Department with annual production information for all emission points, as required by the Department 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 the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Gavilon shall notify the Department 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. The notice must be

submitted to the Department, in writing, 10 days prior to startup 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 Gavilon 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 the Department, and must be submitted to the Department upon request (ARM 17.8.749).
4. Gavilon shall document, by month, the total bushels of grain received. By the 25th day of each month, Gavilon shall total the bushels of grain received for the previous month, and calculate and record the rolling 12 month sum. The monthly information will be used to verify compliance with the rolling 12-month grain receiving limitation. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
5. Gavilon shall document, by month, the total bushels of grain shipped. By the 25th day of each month, Gavilon shall total the bushels of grain shipped for the previous month, and calculate and record the rolling 12 month sum. The monthly information will be used to verify compliance with the rolling 12-month shipping limitation. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
6. Gavilon shall document, by month, the total bushels of grain dried. By the 25th day of each month, Gavilon shall total the bushels of grain dried for the previous month, and calculate and record the rolling 12 month sum. The monthly information will be used to verify compliance with the rolling 12-month drying limitation. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).
7. Gavilon shall document, by month, the total bushels of grain cleaned. By the 25th day of each month, Gavilon shall total the bushels of grain cleaned for the previous month, and calculate and record the rolling 12 month sum. The monthly information will be used to verify compliance with the rolling 12-month cleaning limitation. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

D. Notification

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

1. A proposed schedule for installation of the receiving pit baffles at the rail receiving pit, and the truck receiving pits at Elevators 3 and 5, submitted to the Department within 90 days of final permit issuance.
2. Actual start-up date of the receiving pit baffles located on the rail receiving pit and the truck receiving pits at Elevator 3 and Elevator 5 within 15 days after the actual start-up.
3. Actual start-up date of the receiving pit baffles located on the truck receiving pit at Elevator 4, within 15 days after the actual start-up.

Section III: General Conditions

- A. Inspection – Gavilon shall allow the Department’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 Emissions Monitoring System (CEMS), Continuous Emissions 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 Gavilon fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Gavilon 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 the Department’s decision may request, within 15 days after the Department 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 the Department’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 the Department’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, the Department’s decision on the application is final 16 days after the Department’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 the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Gavilon 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 Analysis
Gavilon Grain, LLC
MAQP #4751-00

I. Introduction/Process Description

Gavilon Grain, LLC (Gavilon) owns and operates a grain elevator in Moore, Montana. The facility's legal address is the southeast ¼ of Section 16, Township 14 North, Range 16 East, in Fergus County, Montana. The physical address is 117 1st Street Southwest, Moore, Montana, 59464.

A. Permitted Equipment

Gavilon owns and operates a grain elevator which is projected to handle no more than 10 million bushels per year. The grain elevator operations include, but are not limited to, the following emissions sources:

- Grain Elevator Truck Unloading (Straight or Hopper Bottom Trucks)
 - Elevator 3: 25,000 bushels per hour (bu/hr)
 - Elevator 4: 10,000 bu/hr
 - Elevator 5: 20,000 bu/hr
- Grain Elevator Railcar Unloading
 - 10,000 bu/hr
- Grain Handling via covered conveyors
- Grain Storage
 - Storage Bin Vents – Elevator 3, Elevator 4, Elevator 5
 - Tarp Covered Bin -
 - Covered Ground Pile – 2 million bushels capacity at 15,000 bu/hr unloading rate
- Grain Loading – shipping and internal transfers
 - Elevator 3: 25,000 bu/hr
 - Elevator 4: 10,000 bu/hr
 - Elevator 5: 50,000 bu/hr
- Portable Grain Cleaning – 200 bu/hr
- Grain Dryer – 9 million British thermal units per hour (MMBtu/hr) heat input and 500 bu/hr grain drying throughput
- Unpaved Haul Roads
- De Minimis Friendly Generator Engine – limited to a maximum rating of 200 horsepower.

B. Source Description

Gavilon owns and operates three grain elevators within the city limits of Moore, Montana; Elevators 3, 4 and 5.

C. Response to Public Comments

Person/Group Commenting	Preliminary Permit Determination Reference	Summarized Comment	Department Response
Gavilon	Section I.A	Between submittal of application and initial posting of the permit, Gavilon demolished the two grain elevators listed as out of service.	The Department deleted the reference to Elevators 1 and 2.
Gavilon	Section I.A	The facility currently has a legging capacity of 10,000 bushels per hour at Elevator 3. Upgrades listed in the permit application were included to increase legging capacity to 25,000 bushels per hour.	The Department listed the legging capacity as 25,000 bushels per hour. Gavilon is permitted to upgrade up to 25,000 bushels per hour legging capacity on Elevator 3.
Gavilon	Section I.A	The facility currently has a legging capacity of 4,000 bushels per hour at Elevator 4. Upgrades listed in the permit application were included to increase legging capacity to 10,000 bushels per hour.	The Department has corrected the legging capacity as 10,000 bushels per hour for Elevator 4. Gavilon is permitted to upgrade the legging capacity up to 10,000 bushels per hour on Elevator 4.
Gavilon	Section I.A	What is a de minimis friendly generator engine?	Gavilon may utilize any generator engine, up to the listed maximum horsepower rating. No limitation on make, model, or emissions guarantee is required. Notification requirements may apply when switching out an engine; however, permit modification is not required to change out an engine.
Gavilon	Section II.A.8	Gavilon requests that the company name reference be listed as "Gavilon" instead of "Gavilon Grain".	The Department incorporated the changes as requested.
Gavilon	Section II.A.11	Gavilon requests clarification of intent of this condition. Oil is applied to incoming grain at Elevator 5, but is not reapplied at loadout.	The intent of the condition was to indicate the existing oil system, as currently configured, be used to minimize emissions from grain handling in Elevator 5. The Department further clarified condition II.A.5, and therefore deleted condition II.A.11.
Gavilon	Sections II.A.12 and II.A.13	We normally don't keep the tarp on the ground piles all of the time. When the pile is being picked up, we normally open up the pile and leave the tarp off unless there is rain in the forecast.	With wind erosion accounting for a very small portion of the emissions associated with this emissions source, and potential compliance demonstration issues, the conditions requiring that the tarp system be in place when piles are not actively being worked were removed. However, use of the tarps as possible is expected, as use of tarps is presented in the application.

Gavilon	Section II.A.18	Gavilon fears the condition requiring control of dust emissions from unpaved haul roads and access roads can be misconstrued to apply to public roads	The referenced condition is standard permit language. The permit condition applies to Gavilon property.
Gavilon	Emissions Inventory	Is there a reason the 50% control efficiency assigned to PM and PM ₁₀ from grain shipping and internal handling is not applied to PM _{2.5} ?	No information is available, or was presented, regarding control efficiency of PM _{2.5} for these emissions. The Department conservatively estimated 0% control efficiency for permit review purposes.
Gavilon	Emissions Inventory	The grain cleaning throughput should reflect 1,752,000 bushels per year	The Department updated the calculations from 2,000,000 to 1,750,000 bushels per year throughput
Gavilon	Emissions Inventory	For the cleaning calculations, what does the emissions factor documentation of AP-42 Appendix F refer to?	The calculations should reference Appendix G. Appendix G recorded the control efficiency of the testing completed in forming the emissions factors for cleaning (controlled via cyclone). This information was used to back calculate uncontrolled emissions. The Department updated the note to reflect Appendix G as the reference.
Gavilon	Emissions Inventory	The assumed heat content of propane should be listed as 91.5 MMBtu instead of 91.5 Btu	The Department corrected the note. No change in calculated emissions was necessary
Gavilon	Emissions Inventory	Can some control efficiency be claimed for application of oil?	No permit limitations are included to decipher between grain received at Elevator 5 vs. Elevator 3 or Elevator 4. This was in consultation with Gavilon to eliminate the need for additional recordkeeping. Therefore, the Department conservatively estimated emissions for permit review purposes.
Gavilon	Emissions Inventory	Can the source of the emission factor used for pile forming be listed?	The emissions factors used were the same as in the application. The Department made a note of the relevant AP-42 chapter
Gavilon	Emissions Inventory	Should both piles be represented in the wind erosion calculations?	The Department inadvertently omitted the calculations from one of the piles; however, the emissions were accounted for in the summarizing table. The Department has inserted the calculations.
Gavilon	Emissions Inventory	Should the constant “a” for the PM emission factor calculations for unpaved haul road emissions be 0.7 instead of 0.9?	In AP-42, the constant “a” is defined as 0.9 for PM and PM ₁₀ , and 0.7 for PM _{2.5} .

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 Department of Environmental Quality (Department). Upon request, the Department 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 rule 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 the Department, 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 the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, 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).

Gavilon 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 Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department 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 that, without resulting in reduction of 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 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.223 Ambient Air Quality Standard for PM₁₀

Gavilon 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 the 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 less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Gavilon 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 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Gavilon is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.
 - a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart.
 - b. 40 CFR 60, Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines: The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of 40 CFR 60.4200(a)(1) through (4).

Based on the information presented in the MAQP #4751-00 application, the generator engine used would likely be portable in nature, and is brought onsite only as needed; therefore, the engine would likely not meet the definition of a stationary engine. However, if the engine were left on-site and became stationary, 40 CFR 60 Subpart III may apply.
8. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This source shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories:
- a. 40 CFR 63, Subpart A – General Provisions may apply to any equipment or facilities subject to a 40 CFR 63 Subpart
 - b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE): An owner or operator of a stationary RICE is subject to this subpart except if the stationary RICE is being tested as a stationary RICE test cell/stand.

Based on the information presented in the MAQP #4751-00 application, the generator engine used would likely be portable in nature, and is brought onsite only as needed; therefore, the engine would likely not meet the definition of a stationary engine. However, if the engine were left on-site and became stationary, 40 CFR 63 Subpart ZZZZ may apply.

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 the Department. Gavilon submitted the appropriate permit application fee for the current permit action.
- 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 the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. 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. The Department 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 modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year of any pollutant. Gavilon has a PTE greater than 25 tons per year of particulate matter, particulate matter with an aerodynamic diameter of 10 microns or less, and oxides of nitrogen; 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, modification, or use of a source. Gavilon submitted the required permit application for the current permit action. (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. Gavilon submitted an affidavit of publication of public notice for the May 9, 2012 issue of *the Lewistown News-Argus*, a newspaper of general circulation in the Town of Lewistown in Fergus County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department 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 that is technically practicable and economically feasible, except that 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 the Department 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 Gavilon 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 the Department'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 modified 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 the Department.

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 subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 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 subchapter would otherwise allow.

This facility is not a major stationary source because this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive 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 tons/year of any pollutant;
 - b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
 - c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) in a serious PM₁₀ nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) 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 #4751-00 for Gavilon, the following conclusions were made:
 - a. The facility's PTE is less than 100 tons/year for any pollutant.

- b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.
- c. This source is not located in a serious PM₁₀ nonattainment area.
- d. This facility is not subject to any current NSPS.
- e. This facility is not subject to any current NESHAP standards.
- 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, the Department determined that Gavilon will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Gavilon may be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. Gavilon 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 analysis was submitted by Gavilon in correspondence related to permit application #4751-00, addressing some available methods of controlling particulate matter emissions from the facility. The Department reviewed these methods, as well as previous BACT determinations.

Grain Receiving

Baffles

Baffles are a gravity-activated mechanical dust control system which is installed in a receiving pit just below the pit grating. The default baffle position is closed. When grain is dumped, the weight of the grain opens only the baffles that the grain contacts. The other baffles remain closed, reducing airflow and entrained dust from escaping the pit. Gavilon represented this control technology as having a 40% control efficiency for PM and PM₁₀.

Total Enclosures

Enclosures reduce particulate emissions by containing the material and preventing release of particulates. Enclosures are typically used to capture emissions from operations like truck unloading such that the dust emitted can be collected and vented to a control device. Due to health and safety reasons, most enclosed operations require ventilation to remove the particulates generated by the operations.

Total Enclosures, combined with controlled ventilation, can provide for emissions reductions of 99% or more. However, construction of total enclosures and ventilation systems, at a facility not already constructed to accommodate operations in this manner, can be economically prohibitive.

Partial Enclosures

Partial enclosures reduce emissions by reducing the wind that can entrain small exposed particles. The effectiveness of the enclosure is directly impacted by the degree to which the operation is enclosed, and the wind direction compared to the enclosure opening.

A three sided enclosure can be estimated to provide an average emissions reduction of 50%.

Grain Receiving BACT Determination

Emissions factors for grain receiving vary depending on cargo vehicle (truck vs. railcar) and further by type of truck (straight or hopper truck). The layout of the already existing Moore Grain Facility lead to differing cost per ton impacts to employ the same control technology at different receiving pits at the facility. This analysis was further complicated by a request for vehicle type receiving limits. A thorough BACT analysis, considering the economic impacts of control technologies on a cost per ton basis, as proposed by Gavilon, is on file with the Department.

Gavilon proposed truck type limits on the receiving pits, as well as baffles and partial enclosure on Grain Elevator 3, work practices only at Elevator 4, baffles plus partial enclosure on Grain Elevator 5, and work practices and grain receiving limits at the Rail Receiving pit.

The Department further analyzed economic impacts of various control technology in a method similar to the least cost envelope method. In consultation with Gavilon, the Department's final BACT determination varied slightly to that originally proposed.

The Department determined, in consideration of additional cost expected for the additional emissions control expected, that addition of partial enclosure to baffles alone is not required for the Elevator 3 receiving pit. In similar fashion, as baffles was presented as the most economical control available compared to partial enclosures, it was determined that baffles are appropriate at all receiving pits, including the railcar pit. Further, best management practices, such as choke flow practices, are included at all receiving pits. Pursuant to ARM 17.8.304, Gavilon will be required to meet applicable opacity limitations.

Grain Handling

Design and Work Practices

Material handling designs and work practices that minimize grain free fall distances and grain velocities can help with particulate emissions from grain handling activities. Choke flow practices, which limit the total flowrate of grain, for example, combined with minimizing free-fall distances between conveyors and piles, minimizes the rate of particulate emissions and the effect of air currents.

Enclosed Conveyors

Conveyors with dust tight enclosures prevent the escape of dust from grain handling operations. The grain conveyors at the Moore facility are completely enclosed essentially from the grain unloading point to the point at which grain is deposited to the bin and also from the storage bins to the loading point.

Enclosure Vented to Control Device

An aspiration system serving elevator legs, conveyors, and transfer points may be ducted to a dust collector such as a baghouse or cyclone. Gavilon presented, and the Department concurred, that in the case of the Moore elevator, this control technology is not economically feasible, based on the cost per ton analysis submitted by Gavilon.

Oil Suppression

The driving factor for development of oil suppression had been largely for control of elevator explosion risks. These systems control dust using oil in accordance with Food and Drug Administration requirements. An oil suppression system can reduce particulate emissions by 60%. In cases where oil suppression is proposed to be included as part of facility safety, utilization of that system in a manner which minimizes particulate emissions can constitute BACT. However, the system, employed solely for emissions control, can become uneconomical on a cost per ton of emissions removed basis for small operations.

Grain Handling BACT Determination

Elevator 5 has an existing oil application system for dust control on the receiving conveyor. Therefore, the Department determined that utilization of the existing oil suppression system at Elevator 5, with enclosed conveyors, and utilization of good work practices, constitutes BACT for grain handling at Elevator 5.

The Department determined that grain conveyors which are completely enclosed essentially from the grain unloading point to the point at which grain is deposited to the bin and also from the storage bins to the loading point constitutes BACT. The Department determined that enclosed conveyors along with good design and work practices, constitutes BACT for Elevator 3 and Elevator 4 grain handling. A detailed BACT analysis submitted by Gavilon is on file with the Department.

Grain Shipping

Grain is shipped to customers from the facility via railcars and trucks. Trucks are also used to move grain from Elevator 4 to Elevator 5, and between the elevators and storage piles (i.e. internal transfer of grain). Control options include total or partial enclosures, enclosures vented to a control device, oil suppression, flexible sock for truck loading, and telescoping spout for rail loading.

As enclosures were cost prohibitive for this existing facility, the Department determined that the telescoping spout for rail loading, and flexible socks for all truck unloading, utilization of oil suppression in Grain Elevator 5, and good design and work practices constitutes BACT for grain shipping. A detailed analysis is on file with the Department.

Generator Engine

Generally, any newer diesel engines would likely be required to comply with federal engine emission limitations including, for example, EPA Tier emission standards for non-road engines (40 CFR Part 1039), New Source Performance Standard emission limitations for stationary compression ignition engines (40 CFR 60, Subpart IIII), or National Emissions Standards for Hazardous Air Pollutant Sources for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ).

The Department has determined that compliance with any applicable federal standards, with no additional requirements, constitutes BACT for the generator engine.

Haul Roads

Dust is created from driving on unpaved haul roads. Options available for dust control include application of water or chemical dust suppressant. Further, ARM 17.8.308 requires control of particulate emissions from unpaved roads. The Department determined that application of water and/or chemical dust suppressant, as needed, constitutes BACT for unpaved haul roads.

IV. Emission Inventory

Gavilon Grain, LLC Moore Grain Elevator MAQP #4751-00 Potential To Emit in Tons Per Year						
Source	PM	PM₁₀	PM_{2.5}	NO_x	CO	VOC
Grain Receiving (Truck and/or Railcar)	34.29	11.24	1.91			
Grain Loadout (Truck and/or Railcar)	7.87	2.65	0.90			
Grain Cleaning	4.50	1.14	0.19			
Grain Drying	5.78	1.45	0.25			
Grain Drying - Propane Combustion	0.30	0.30	0.30	5.60	3.23	0.43
Internal Handling	11.62	6.48	2.21			
On-site and Offsite Piles	6.13	2.14	0.44			
Storage Bin Vents	9.53	2.40	0.42			
Diesel Generator Engine	1.93	1.93	1.93	27.16	5.85	2.20
Haul Roads	13.89	4.25	0.48			
TOTAL:	95.83	33.98	9.02	32.76	9.08	2.63

bu = bushels
 CO = carbon monoxide
 hp = horsepower
 hr = hour
 lb = pound
 MMBtu = million British thermal units
 NO_x = oxides of nitrogen
 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
 TPY = ton per year
 yr = year
 VMT = vehicle miles traveled
 VOC = volatile organic compounds

Grain Receiving (SCC 3-02-005-05)

Grain can be received via truck or railcar. It is assumed 100% of grain received will be via straight grain truck at Elevator 4 as doing so provides the most conservative emissions estimate. This calculation overestimates emissions.

Maximum projected grain available: 10,000,000 bushels/yr (MAQP #4751-00 Application)

Assumed Grain Density: 60 lb/bushel (highest density grain - AP-42 Appendix B)

Assumed mass grain handled: 381,000 ton/yr (see MAQP #4751-00 application - Table B-2)

PM Emissions (all filterable)

Emissions Factor: 0.18 lb/ton handled (Max emissions rate, AP-42 Table 9.9.1-1, 3/2003)

Calculations: $0.18\text{lb/ton handled} * 381000\text{ton/yr} * 0.0005\text{ ton/lb}$ **34.29 TPY**

PM₁₀ Emissions

Emissions Factor: 0.059 lb/ton handled (Max emissions rate, AP-42 Table 9.9.1-1, 3/2003)

Calculations: $0.059\text{lb/ton handled} * 381000\text{ton/yr} * 0.0005\text{ ton/lb}$ **11.24 TPY**

PM_{2.5} Emissions

Emissions Factor: 0.01 lb/ton handled (Max emissions rate, AP-42 Table 9.9.1-1, 3/2003)

Calculations: $0.01\text{lb/ton handled} * 381000\text{ton/yr} * 0.0005\text{ ton/lb} =$ **1.91 TPY**

Grain Shipping (SCC 3-02-005-06)

Grain shipping can occur via truck or railcar. It is assumed 100% of the grain shipped will be via truck as doing so provides the most conservative emissions estimate

Maximum projected grain available: 10,000,000 bushels/yr (MAQP #4751-00 Application)

Assumed Grain Density: 60 lb/bushel (highest density grain - AP-42 Appendix B)

Assumed mass grain handled: 366,000 ton/yr (see MAQP #4751-00 application - Table B-2)

PM Emissions (all filterable)

Emissions Factor: 0.086 lb/ton handled (Max emissions rate, AP-42 Table 9.9.1-1, 3/2003)

Calculations: $0.086\text{lb/ton handled} * 366000\text{ton/yr} * 0.0005\text{ ton/lb} * 50\% \text{ control} =$ **7.87 TPY**

PM₁₀ Emissions

Emissions Factor: 0.029 lb/ton handled (Max emissions rate, AP-42 Table 9.9.1-1, 3/2003)

Calculations: $0.029\text{lb/ton handled} * 366000\text{ton/yr} * 0.0005\text{ ton/lb} * 50\% \text{ control} =$ **2.65 TPY**

PM_{2.5} Emissions

Emissions Factor: 0.0049 lb/ton handled (Max emissions rate, AP-42 Table 9.9.1-1, 3/2003)

Calculations: $0.0049\text{lb/ton handled} * 366000\text{ton/yr} * 0.0005\text{ ton/lb} =$ **0.90 TPY**

Grain Cleaning - Internal Vibrating (SCC 3-02-005-37)

Maximum Rated Throughput: 200 bushel/hour (MAQP #4751-00 Application)
Assumed Grain Density: 60 lb/bushel (highest density grain - AP-42 Appendix B)
Maximum projected grain available: 2,000,000 bushels/yr (MAQP #4751-00 Condition)
Allowable Throughput: 60,000 ton/yr

PM Emissions (All filterable)

Emissions Factor: 0.15 lb/ton adjusted for uncontrolled assuming 50% (AP-42 Emissions Factor Documentation - Appendix G)
Calculations: $0.15\text{lb/ton} * 60000\text{ton/yr} * 0.0005\text{ ton/lb} =$ **4.5 TPY**

PM₁₀ Emissions

Emissions Factor: 0.038 lb/ton adjusted for uncontrolled assuming 50% (AP-42 Emissions Factor Documentation - Appendix G)
Calculations: $0.038\text{lb/ton} * 60000\text{ton/yr} * 0.0005\text{ ton/lb} =$ **1.14 TPY**

PM_{2.5} Emissions

Emissions Factor: 0.0064 lb/ton adjusted for uncontrolled assuming 50% (AP-42 Emissions Factor Documentation - Appendix G)
Calculations: $0.0064\text{lb/ton} * 60000\text{ton/yr} * 0.0005\text{ ton/lb} =$ **0.19 TPY**

Grain Drying - Column Dryer (SCC 3-02-005-27)

Assumed Grain Density: 60 lb/bushel (highest density grain - AP-42 Appendix B)
Maximum projected grain available: 1,752,000 bushels/yr (MAQP #4751-00 Application)
Allowable Throughput: 52,560 ton/yr (MAQP #4751-00 Permit Condition)

PM Emissions (All Filterable)

Emissions Factor: 0.22 lb/ton (AP-42 Table 9.9.1-1, 3/03)
Calculations: $0.22\text{lb/ton} * 52,560\text{ ton/yr} * 0.0005\text{ ton/lb} =$ **5.78 TPY**

PM₁₀ Emissions

Emissions Factor: 0.055 lb/ton (AP-42 Table 9.9.1-1, 3/03)
Calculations: 0.055lb/ton*52,560ton/yr*0.0005 ton/lb = **1.45 TPY**

PM_{2.5} Emissions

Emissions Factor: 0.0094 lb/ton (AP-42 Table 9.9.1-1, 3/03)
Calculations: 0.0094lb/ton*52,560ton/yr*0.0005 ton/lb = **0.25 TPY**

Grain Drying - Propane Combustion (SCC 1-02-010-02)

Maximum Firing Rate: 9 MMBtu/hr
Hours of Operation: 8760 hr/yr
Assumed heat content: 91.5 MMBtu/10³ gallon (AP-42 Table 1.5-1, 07/2008 note a)

PM Emissions - Filterable

Emissions Factor: 0.00219 lb/MMBtu (AP-42 Table 1.5-1, 07/2008)
Calculations: 0.00218579234972678lb/MMBtu*9MMBtu/hr= 0.02 lb/hr
0.019672131147541lb/hr*8760hr/yr*0.0005ton/lb= **0.09 ton/y**

PM Emissions - Condensable

Emissions Factor: 0.00546 lb/MMBtu (AP-42 Table 1.5-1, 07/2008)
Calculations 0.00546448087431694lb/MMBtu*9MMBtu/hr= 0.05 lb/hr
0.0491803278688525lb/hr*8760hr/yr*0.0005ton/lb= **0.22 ton/y**

NO_x Emissions

Emissions Factor: 0.14208 lb/MMBtu (AP-42 Table 1.5-1, 07/2008)
Calculations 0.14207650273224lb/MMBtu*9MMBtu/hr= 1.28 lb/hr
1.27868852459016lb/hr*8760hr/yr*0.0005ton/lb= **5.60 ton/y**

CO Emissions

Emissions Factor: 0.08197 lb/MMBtu (AP-42 Table 1.5-1, 07/2008)
Calculations 0.0819672131147541lb/MMBtu*9MMBtu/hr= 0.74 lb/hr
0.737704918032787lb/hr*8760hr/yr*0.0005ton/lb= **3.23 ton/y**

VOC Emissions

Emissions Factor: 0.010928962 lb/MMBtu (AP-42 Table 1.5-1, 07/2008)
Calculations: 0.0109289617486339lb/MMBtu*9MMBtu/hr= 0.10 lb/hr
0.0983606557377049lb/hr*8760hr/yr*0.0005ton/lb= 0.43 ton/y

Internal Handling (SCC 3-02-005-30)

Grain is transported from the unloading areas (i.e. dump pits) to various storage locations and the loadout areas by a series of conveyors (i.e. belt, drag and/or bucket conveyors).

Assumed Throughput: 762,000 ton/yr (MAQP #4751-00 Application)

PM Emissions (All Filterable)

Emissions Factor: 0.061 lb/ton (AP-42 Table 9.9.1-1, 3/2003)
Calculations: 0.061lb/ton*762000ton/yr*0.0005 ton/lb = 23.24 ton/y
50% control efficiency for practices, covers, and oil suppression 11.62 ton/y

PM₁₀ Emissions (All Filterable)

Emissions Factor: 0.034 lb/ton (AP-42 Table 9.9.1-1, 3/2003)
Calculations: 0.034lb/ton*762000ton/yr*0.0005 ton/lb = 12.95 ton/y
50% control efficiency for practices, covers, and oil suppression 6.48 ton/y

PM_{2.5} Emissions (All Filterable)

Emissions Factor: 0.0058 lb/ton (AP-42 Table 9.9.1-1, 3/2003)
Calculations: 0.0058lb/ton*762000ton/yr*0.0005 ton/lb = 2.21 ton/y

Storage Bin Vents (SCC 3-02-005-40)

Assumed Throughput: 762,000 ton/yr (MAQP #4751-00 Application)

PM Emissions (All Filterable)

Emissions Factor: 0.025 lb/ton (AP-42 Table 9.9.1-1, 3/2003)
Calculations: 0.025lb/ton*762000ton/yr*0.0005 ton/lb = 9.53 ton/y

PM₁₀ Emissions (All Filterable)

Emissions Factor: 0.0063 lb/ton (AP-42 Table 9.9.1-1, 3/2003)
Calculations: 0.0063lb/ton*762000ton/yr*0.0005 ton/lb = 2.40 ton/y

PM_{2.5} Emissions (All Filterable)

Emissions Factor: 0.0011 lb/ton (AP-42 Table 9.9.1-1, 3/2003)

Calculations: 0.0011lb/ton*762000ton/yr*0.0005 ton/lb =

0.42 ton/y

On-Site Piles - Pile Forming and Wind Erosion

Throughput:

120,000 ton/yr

Pile Forming

PM Emissions (all filterable)

Emissions Factor: 0.000366 lb/ton

0.000366lb/ton*120000ton/yr*0.0005 ton/lb

Calculations: =

0.02 ton/yr

PM₁₀ Emissions

Emissions Factor: 0.000173 lb/ton

0.000173lb/ton*120000ton/yr*0.0005 ton/lb

Calculations: =

0.01 ton/yr

PM_{2.5} Emissions

Emissions Factor: 0.000026 lb/ton

0.000026lb/ton*120000ton/yr*0.0005 ton/lb

Calculations: =

0.00 ton/yr

Wind Erosion

Pile Size = 4.82 acres

$E = k \cdot 1.7 \cdot (s/1.5) \cdot [(365-p)/235] \cdot (f/15)$ (See MAQP #4751-00 Application for details)

k = 1 for PM
for
0.5 PM10
0.2 for PM2.5

s = 0.4

p = 110 (AP-42 13.2.1-2, 1/2011)
Lewistown MET

f = 24.7 data

PM Emissions

Emissions Factor: 0.81 lb/day/acre
Calculations: $0.81\text{lb/day/acre} \times 4.82\text{acres} = 3.9042 \text{ lb/day}$
 $3.9042\text{lb/day} \times 365 \text{ day/yr} \times 0.0005 \text{ ton/lb} = \mathbf{0.71 \text{ ton/yr}}$

PM₁₀ Emissions

Emissions Factor: 0.41 lb/day/acre
Calculations: $0.41\text{lb/day/acre} \times 4.82\text{acres} = 1.9762 \text{ lb/day}$
 $1.9762\text{lb/day} \times 365 \text{ day/yr} \times 0.0005 \text{ ton/lb} = \mathbf{0.36 \text{ ton/yr}}$

PM_{2.5} Emissions

Emissions Factor: 0.16 lb/day/acre
Calculations: $0.16\text{lb/day/acre} \times 4.82\text{acres} = 0.7712 \text{ lb/day}$
 $0.7712\text{lb/day} \times 365 \text{ day/yr} \times 0.0005 \text{ ton/lb} = \mathbf{0.14 \text{ ton/yr}}$

Diesel Generator Engine

Maximum rated Horsepower: 200 hp
Hour of Operation: 8760 hr/yr

PM/PM₁₀/PM_{2.5} Emissions

Emissions Factor: 0.0022 lb/hp-hr (AP-42 Table 3.3-1, 10/1996)
Calculations: $0.0022\text{lb/hp-hr} \times 200\text{hp} = 0.44 \text{ lb/hr}$
 $0.44\text{lb/hr} \times 8760\text{hr/yr} \times 0.0005 \text{ ton/lb} = \mathbf{1.93 \text{ ton/yr}}$

NO_x Emissions

Emissions Factor: 0.031 lb/hp-hr (AP-42 Table 3.3-1, 10/1996)
Calculations: $0.031\text{lb/hp-hr} \times 200\text{hp} = 6.2 \text{ lb/hr}$
 $6.2\text{lb/hr} \times 8760\text{hr/yr} \times 0.0005 \text{ ton/lb} = \mathbf{27.16 \text{ ton/yr}}$

CO Emissions

Emissions Factor: 0.00668 lb/hp-hr (AP-42 Table 3.3-1, 10/1996)
Calculations: $0.00668\text{lb/hp-hr} \times 200\text{hp} = 1.336 \text{ lb/hr}$
 $1.336\text{lb/hr} \times 8760\text{hr/yr} \times 0.0005 \text{ ton/lb} = \mathbf{5.85 \text{ ton/yr}}$

VOC Emissions

Emissions Factor: 0.0025141 lb/hp-hr (AP-42 Table 3.3-1, 10/1996)
Calculations: 0.0025141lb/hp-hr*200hp= 0.50282 lb/hr
0.50282lb/hr*8760hr/yr *0.0005 ton/lb = **2.20 ton/yr**

Haul Roads:

Assumed VMT/year: 7,490 VMT/yr (MAQP #4751-00 Application)
Assumed vehicle weight: 38.5 tons
Assumed empty weight: 14.5 tons

Where:

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

s = 6.40 0.43

W = 26.5 tons

PM Emissions

Emissions Factor Calculations:

k = 4.9

a = 0.9

b = 0.45

E = 7.42 lb/VMT

Emissions Calculations: 7.42lb/VMT*7490VMT/yr*0.0005 ton/lb = 27.78 TPY
27.781191139147TPY*50% Control = **13.89 TPY**

PM₁₀ Emissions

Emissions Factor Calculations:

k = 1.5

a = 0.9

b = 0.45

E = 2.27

Emissions Calculations: 2.27*7490VMT/yr*0.0005 ton/lb = 8.50 TPY
8.50350585119837TPY*50% Control = **4.25 TPY**

PM_{2.5} Emissions

Emissions Factor Calculations:

$$\begin{aligned}
 k &= 0.15 \\
 a &= 0.7 \\
 b &= 0.45 \\
 \\ \\
 E &= 0.23
 \end{aligned}$$

$$\begin{aligned}
 \text{Emissions Calculations: } & 0.23 * 7490 \text{VMT/yr} * 0.0005 \text{ ton/lb} = && 0.96 \text{ TPY} \\
 & 0.850350585119837 \text{TPY} * 50\% \text{ Control} = && \mathbf{0.48 \text{ TPY}}
 \end{aligned}$$

Truck Receiving: Piles			
PM Emissions			
Emissions Factor:	0.18 lb/ton		
Calculations:	$0.18 \text{lb/ton} * 120000 \text{ton/yr} * 0.5 * 0.0005 \text{ ton/lb} =$		5.40 ton/yr
PM10 Emissions			
Emissions Factor:	0.059 lb/ton		
Calculations:	$0.059 \text{lb/ton} * 0.000366 \text{lb/ton} * 0.5 * 0.0005 \text{ ton/lb} =$		1.77 ton/yr
PM2.5 Emissions			
Emissions Factor:	0.01 lb/ton		
Calculations:	$0.01 \text{lb/ton} * 0.000173 \text{lb/ton} * 0.5 * 0.0005 \text{ ton/lb} =$		0.30 ton/yr

V. Existing Air Quality

Gavilon’s Moore facility is located in an area currently designated as unclassifiable for all pollutants.

VI. Ambient Air Impact Analysis

The Department determined that the impacts from the permitting of this existing facility will be minor. The Department believes it 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, the Department conducted the following private property taking and damaging assessment.

YES	NO	
XX		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	XX	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	XX	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	XX	4. Does the action deprive the owner of all economically viable uses of the property?
	XX	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?
	XX	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	XX	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?
	XX	7a. Is the impact of government action direct, peculiar, and significant?
	XX	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	XX	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?
	XX	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, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Gavilon Grain, LLC
 11 ConAgra Drive
 Omaha, NE 68102

Montana Air Quality Permit Number: 4751-00

Preliminary Determination Issued: 10/17/2012

Department Decision Issued: 11/9/2012

Permit Final: 11/27/2012

1. *Legal Description of Site:* Southeast 1/4, Section 16, Township 14 North, Range 16 East in Fergus County, Montana. The physical address is 117 1st Street SW, Moore, MT 59464
2. *Description of Project:* Gavilon Grain, LLC (Gavilon) owns and operates a grain elevator. The facility receives, cleans, dries, stores, and ships grain. Grain is shipped via truck and/or rail.
3. *Objectives of Project:* To receive, store, clean, dry, and ship grain.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the “no-action” alternative. The “no-action” alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the “no-action” alternative to be appropriate because Gavilon demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the “no-action” alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis, would be included in MAQP #4751-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.
7. *The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			XX			Yes
B	Water Quality, Quantity, and Distribution			XX			Yes
C	Geology and Soil Quality, Stability and Moisture			XX			Yes
D	Vegetation Cover, Quantity, and Quality			XX			Yes

		Major	Moderate	Minor	None	Unknown	Comments Included
E	Aesthetics			XX			Yes
F	Air Quality			XX			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			XX			Yes
H	Demands on Environmental Resource of Water, Air and Energy			XX			Yes
I	Historical and Archaeological Sites			XX			Yes
J	Cumulative and Secondary Impacts			XX			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Terrestrials may be present in the general area of the facility. The Department would expect minor, if any, effects to terrestrial and aquatic life and habitats as a result of issuance of MAQP #4751-00, as the facility has been in operation since 1906.

B. Water Quality, Quantity and Distribution

Water may be used in the general area for purposes of dust suppression. The Department would expect no more than minor impacts to water quality, quantity and distribution.

C. Geology and Soil Quality, Stability and Moisture

Minor, if any, impacts to geology would be expected as a result of issuing MAQP #4751-00. Dust suppression via water and/or chemical dust suppressant would be required to control emissions from unpaved haul roads and the general plant area. Minor impacts to soil quality, stability, and moisture would be expected.

D. Vegetation Cover, Quantity, and Quality

MAQP #4751-00 would contain conditions and limitations derived from rules intended to protect air quality. Deposition of particulate matter would be expected, however, the impacts to vegetation cover, quality, and quantity would be expected to be minor. Furthermore, the current permit action permits the operations and modification of an existing and operating facility.

E. Aesthetics

The Department would expect no more than minor impacts to aesthetics in the area as the facility is currently existing and operating.

F. Air Quality

MAQP #4751-00 would contain conditions and limitations derived from rules intended to protect air quality. Furthermore, the current permit action would permit operations and modification of an existing facility. No more than minor impacts would be expected as a result of issuance of MAQP #4751-00.

G. Unique Endangered, Fragile, or Limited Environmental Resources

The Department contacted the Montana Natural Heritage Program requesting any information available regarding records of species of special concern in the general area. No records were found.

MAQP #4751-00 would contain conditions and limitations derived from rules intended to protect air quality. The Department would expect no more than minor impacts to any unique endangered, fragile, or limited environmental resources in the area.

H. Demands on Environmental Resource of Water, Air and Energy

MAQP #4751-00 would contain limitations and conditions derived from rules intended to protect air quality. Use of water as a dust suppressant may be required at times. No significant long term increase in energy demands at the facility would be expected as a result of issuance of this permit. The Department would expect no more than minor impacts to water, air, and energy resources.

I. Historical and Archaeological Sites

The Department contacted the Montana Historical Society’s State Historic Preservation Office, requesting any known information regarding the presence of cultural resources in the area.

A file search of the cultural resource information systems indicated that railroad and a trash dump which would be considered historic are in the general area. Neither site is registered with the national register of historic places.

MAQP #4751-00 would be issued for an existing and operating grain elevator. The Department would expect no more than minor impacts to these cultural resources.

J. Cumulative and Secondary Impacts

The Department determined that the impacts to the individual physical and biological considerations above to be minor. Cumulatively and secondarily, the department would expect only minor physical and biological impacts as a result of issuance of MAQP #4751-00.

8. *The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.*

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores			XX			Yes
B	Cultural Uniqueness and Diversity			XX			Yes
C	Local and State Tax Base and Tax Revenue			XX			Yes
D	Agricultural or Industrial Production			XX			Yes
E	Human Health			XX			Yes
F	Access to and Quality of Recreational and Wilderness Activities			XX			Yes
G	Quantity and Distribution of Employment			XX			Yes
H	Distribution of Population			XX			Yes

		Major	Moderate	Minor	None	Unknown	Comments Included
I	Demands for Government Services			XX			Yes
J	Industrial and Commercial Activity			XX			Yes
K	Locally Adopted Environmental Plans and Goals			XX			Yes
L	Cumulative and Secondary Impacts			XX			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

- A. Social Structures and Mores
- B. Cultural Uniqueness and Diversity

The current permit action is for operations and modification of an existing grain elevator. No additional employment is expected as a result of this permitting action. The Department would expect minor, if any, changes to social structures and mores or cultural uniqueness and diversity as a result of this permitting action.

- C. Local and State Tax Base and Tax Revenue

The current permit action is for operations and modification of an existing and operating grain elevator. No more than minor impacts to local and state tax base and revenue would be expected as a result of issuing MAQP #4751-00.

- D. Agricultural or Industrial Production

The current permit action is for operations and modification of an existing and operating grain elevator. No more than minor impacts to agricultural or industrial production would be expected as a result of issuing MAQP #4751-00.

- E. Human Health

MAQP #4751-00 would contain conditions and limitations derived from rules intended to protect human health. The Department would expect no more than minor impacts to human health as a result of issuing MAQP #4751-00.

- F. Access to and Quality of Recreational and Wilderness Activities

MAQP #4751-00 would be issued for an already existing operation. Minor, if any, impacts to access to and quality of recreational and wilderness activities would be expected.

- G. Quantity and Distribution of Employment

The current permit action is for operations and modification of an existing grain elevator. No additional employment is expected as a result of this permitting action.

- H. Distribution of Population

The current permit action is for operations and modification of an existing grain elevator. No additional employment is expected as a result of this permitting action. No more than minor impacts to the distribution of population would be expected as a result of issuing MAQP #4751-00.

I. Demands for Government Services

Demands for government services would include compliance related activities associated with the permit. The department would expect minor impacts to demands for government services.

J. Industrial and Commercial Activity

The current permit action is for operations and modification of an existing grain elevator. No more than minor impacts to industrial and commercial activity would be expected as a result of issuing MAQP #4751-00.

K. Locally Adopted Environmental Plans and Goals

The Department is unaware of any locally adopted environmental plans and goals which would be impacted by issuance of MAQP #4751-00. The permit would contain conditions and limitations which would be intended to be protective of human health and the environment.

L. Cumulative and Secondary Impacts

The Department determined minor, if any, effects to the individual economic and social considerations above. Cumulatively and secondarily, the Department would expect no more than minor economic and social effects.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the modification and operation of an existing grain elevator. MAQP #4751-00 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Shawn Juers

Date: 10/05/2012