

**TECHNICAL REVIEW AND EVALUATION  
OF APPLICATION FOR  
AIR QUALITY PERMIT NO. 65643**

**PFFJ, LLC**

**I. INTRODUCTION**

This Class II operating permit is issued to PFFJ, LLC, the Permittee, for the continued operation of an animal feeding operation and on-site animal feed manufacturing facility located at Snowflake, Navajo County, Arizona. This is a renewal of Permit # 55432.

**A. Company Information**

1. Facility Name: PFFJ LLC - SNOWFLAKE CAFO
2. Facility Location: 11 (farm) and 14 (feed mill) miles north of Snowflake, AZ off Highway 77, Snowflake, Navajo County, Arizona 85937
3. Mailing Address: PO Box 398, Taylor, AZ 85939

**B. Attainment Classification**

The facility is located in an area that is attainment for all pollutants.

**II. PROCESS DESCRIPTION**

The PFFJ, LLC facility consists of a concentrated animal feeding operation with an adjacent feed mill. The facility includes barns and effluent handling system, three generators, one gasoline storage tank, supplemental in-barn propane heaters, and hauls roads.

The facility can be divided in two parts, namely Farm Process and Feed Mill Process. A brief process description is as follows:

**A. Farm Process**

The farm has a multiple-site layout with sow, nursery, nursery-finisher, and finisher sites segregated and isolated from one another. There are a total of 144 buildings housing pigs. Each barn has computerized ventilation and heating controls to maintain ideal temperature for the animals. Propane heaters are used inside the barns to warm the rooms. All buildings have slotted floors to allow solid and liquid material to fall through the floor and away from the animals.

The sow, nursery, and finishing barns have recycle-water flush system. The gilt development and wean-to-finish barns are a recycle-water pull-plug system. Each set of buildings has a lagoon. These systems are designed for maximum animal health and water conservation. All of the buildings contain enclosed feed transfer systems and all feed rations have oil added to minimize dust emission.

There are 29 individual lagoons on the facility. For the protection of ground and surface water, all lagoons are lined- seven with an engineered layer of clay and the rest with 40 mm synthetic liners. Effluent from the barns is stored in the lagoons. Solids settle at the



bottom where they are broken down through natural biological processes. Liquids stay at the top, providing a natural cover over the lagoons. Recycle water is drawn from just below the water surface via pumps and transferred to the flush tanks at the end of each building. This helps to conserve the fresh water use at the farm.

**B. Feed Mill Process**

The main ingredients in the feed process; corn, soybean meal (SBM), and dried distillers grains (DDG); are delivered by railcar and trucks. The corn is milled in hammer mills for milling to correct size. Raw material additives, like limestone, salt, and dical delivered to the site by trucks, are used in the preparation of swine feed. These are mixed together in two mixing system to form animal feed. Each mixing system comprises of a mixing scale, a mixer, and a surge chamber that feeds to a bucket elevator. The bucket elevator from each mixing system discharges the finished product to eight storage and load out bins. The finished product is loaded into trucks for direct delivery to the swine production barns.

**C. Air Pollution Control Equipment**

No add-on control devices are in use in PFFJ, LLC facility. All material transfer points are sealed, except loading & unloading operations, bucket elevators, and silos.

**III. LEARNING SITES**

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

Upon review of ADEQ's database, it was determined that there are no learning sites within two miles of the facility.

**IV. EMISSIONS**

**Table 1: Potential Emissions**

<b>Pollutant</b>	<b>Emissions (tons per year)</b>
<b>PM</b>	452.43
<b>PM<sub>10</sub></b>	90.22
<b>PM<sub>2.5</sub></b>	13.84
<b>NO<sub>x</sub></b>	80.24
<b>CO</b>	28.15
<b>SO<sub>2</sub></b>	8.8
<b>VOC</b>	76.39
<b>HAPs</b>	0.18
<b>H<sub>2</sub>S</b>	264.80

**V. APPLICABLE REGULATIONS**

Table 2 displays the applicable requirements for each permitted piece of equipment along with an explanation of why the requirement is applicable.

**Table 2: Verification of Applicable Regulations**

<b>Unit</b>	<b>Control Device</b>	<b>Rule</b>	<b>Discussion</b>
Feed Mill and Concentrated Animal Feeding Operation	None	A.A.C. R18-2-730	Standards of Performance for Unclassified Sources
		National Emission Standards for Hazardous Air Pollutants (NESHAP) for Prepared feed Manufacturing, 40 CFR 63, Subpart DDDDDDD	NESHAP Subpart DDDDDDD is not applicable since PFFJ prepares feed only for consumption at its facility and no feed is exported from the facility.



Unit	Control Device	Rule	Discussion
Gasoline Dispensing Facility  Gasoline Storage Tanks	N/A	NESHAP 40 CFR 63 Subpart CCCCCC  A.A.C. R18-2-710	National Emission Standards for Hazardous Air Pollutants (NESHAP) is applicable to Gasoline Dispensing Facilities.  This standard applies to all petroleum liquid storage tanks.
Internal Combustion Engine	None	New Source Performance Standards (NSPS) Subpart IIII	ICEs manufactured in the year 2006 are subject to NSPS Subpart IIII. As per 40 CFR 63.6590(c)(1), requirements of NESHAP Subpart ZZZZ are met by meeting the requirements of NSPS Subpart JJJJ.
Internal Combustion Engines	None	A.A.C. R18-2-719	ICEs manufactured in the year 1992 are subject to A.A.C. R18-2-719 (Standards of Performance for the Existing Stationary Rotating Machinery).
		National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart ZZZZ	NESHAP Subpart ZZZZ is applicable to the ICEs, excluding the ICE subject to NSPS Subpart IIII. These engines are categorized as existing area sources under Subpart ZZZZ.
Fugitive dust sources	Water Trucks Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	This standard is applicable to any spray painting operation.



Unit	Control Device	Rule	Discussion
Demolition/renovation operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Mobile sources	None	A.A.C. R18-2-801	These are applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.

## VI. PREVIOUS PERMIT CONDITIONS

Permit No. 65643 was issued on, for the continued operation of this facility. Table 3 below illustrates if a section in Permit No. 65643 was revised or deleted.

**Table 3: Permit No. 65643**

Section No.	Determination		Comments
	Revised	Delete	
Att. A.	X		General Provisions - Revised to represent most recent template language.

## VII. MONITORING REQUIREMENTS

### A. Facility Wide

#### 1. Monitoring Methods

##### a. Instantaneous Surveys and Six-Minute Observations

Any instantaneous survey or six-minute observation required by this permit shall be determined by either method listed in Conditions I.A.1.a(1) and (2) below.

#### (1) Alternative Method ALT-082 (Digital Camera Operating Technique)

(a) The Permittee, or Permittee representative, shall be certified in the use of Alternative Method ALT-082.

(b) The results of all instantaneous surveys and six-minute observations shall be obtained within 30 minutes.

#### (2) EPA Reference Method 9

The Permittee shall have on site or on call a person certified in EPA Reference Method 9 unless all instantaneous visual surveys and six-minute observations required by this permit are conducted by Alternative Method ALT-082.



- b. Any EPA Reference Method 9 required by this permit can be conducted by Alternative Method ALT-082.

## 2. Monitoring, Recordkeeping, and Reporting Requirements

- a. At the frequency specified in future sections of this permit, the Permittee shall conduct an instantaneous survey of visible emissions from both process stack sources, when in operation, and fugitive dust sources.
- b. If the plume on an instantaneous basis appears less than or equal to the applicable opacity standard, then the Permittee shall keep a record of the name of the observer, the date on which the instantaneous survey was made, and the results of the instantaneous survey.
- c. If the plume on an instantaneous basis appears greater than the applicable opacity standard, then the Permittee shall immediately conduct a six-minute observation of the plume.
  - (1) If the six-minute observation of the plume is less than or equal to the applicable opacity standard, then the Permittee shall record the name of the observer, the date on which the six-minute observation was made, and the results of the six-minute observation.
  - (2) If the six-minute observation of the plume is greater than the applicable opacity standard, then the Permittee shall do the following:
    - (a) Adjust or repair the controls or equipment to reduce opacity to less than or equal to the opacity standard;
    - (b) Record the name of the observer, the date on which the six-minute observation was made, the results of the six-minute observation, and all corrective action taken; and
    - (c) Report the event as an excess emission for opacity in accordance with Condition XII.A of Attachment "A".
    - (d) Conduct another six-minute observation to document the effectiveness of the adjustments or repairs completed.

## B. Feed Mill and Concentrated Animal Feeding Operation Requirements

### 1. Opacity

- a. A certified EPA Reference Method 9 observer shall conduct a monthly survey of visible emissions. If the opacity of the emissions observed appears to exceed the standard, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee shall keep records of the initial survey and any EPA Reference Method 9 observations performed. These records shall include the emission point observed, location of observer, name of observer, date and time of observation, and the results of the observation.



- b. If the observation shows a Method 9 opacity reading in excess of the standard, the Permittee shall initiate appropriate corrective action to reduce the opacity below the standard. The Permittee shall keep a record of the corrective action performed.

### C. Internal Combustion Engines

#### 1. Existing Source Requirements

##### a. Particulate Matter & Opacity

- (1) The Permittee shall maintain a record of the daily lower heating value of the fuel fired in the ICEs. This may be accomplished by maintaining on record a copy of that part of the contract with the vendor that specifies the lower heating value of the fuel.
- (2) A certified EPA Reference Method 9 observer shall conduct a monthly survey of visible emissions emanating from the ICE when in operation. If the opacity of the emissions observed appears to exceed the standard, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee shall keep records of the initial survey and any EPA Reference Method 9 observations performed. These records shall include the emission point observed, name of observer, date and time of observation, and the results of the observation.
- (3) If the observation results in a Method 9 opacity reading in excess of 40 percent, the Permittee shall report this to ADEQ as excess emission and initiate appropriate corrective action to reduce the opacity below 40 percent. The Permittee shall keep a record of the corrective action performed.

##### b. Sulfur Dioxide (SO<sub>2</sub>)

The Permittee shall keep records of fuel supplier certification including the following information:

- (1) The name of the diesel supplier;
- (2) The sulfur content of diesel from which the shipment came; and
- (3) The method used to determine the sulfur content of the diesel.

#### 2. New Source Performance Standards (NSPS) Subpart IIII Requirements

The Permittee of a stationary compression ignition internal combustion engine that is required to comply with the Conditions III.D.2 to III.D.4 to demonstrate compliance according to one of the methods specified below:

- a. Purchasing an engine certified according to 40 CFR Part 89 or 40 CFR Part 94, as applicable, for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer's specifications.



- b. Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test shall have been conducted using the methods specified in this 40 CFR 60.4212 or 4213, and the methods shall have been followed correctly.
- c. Keeping records of engine manufacturer data indicating compliance with the standards.
- d. Keeping records of control device vendor data indicating compliance with the standards.
- e. Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable.
- f. The Permittee shall keep records of fuel supplier specifications. The specifications shall contain name of the supplier, sulfur content, and cetane index or aromatic content in the fuel. These records shall be made available to ADEQ upon request.
- g. The Permittee shall maintain a copy of engine certifications or other documentation demonstrating that engine complies with the applicable standards in this Permit, and shall make the documentation available to ADEQ upon request.

3. ICEs Subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart ZZZZ

- a. The Permittee shall keep records of the maintenance conducted on the CI RICE that demonstrates operation and maintenance of the CI RICE in accordance with your maintenance plan.
- b. The Permittee shall keep records of the parameters that are analyzed and the results of the oil analysis, if any, and the oil changes for the engine.
- c. The Permittee shall, unless otherwise indicated, submit all reports required under this Attachment along with the annual compliance certification requirement specified in Attachment "A" of this general permit.

**D. Heaters**

1. Operational Requirements

- a. The Permittee shall maintain a record of all heaters at the facility, including those stored as replacement units. When a new heater is brought on-site, or a heater is decommissioned, the Permittee shall keep records of the following and make these records available to ADEQ upon request:
  - (1) Capacity and serial number of the heater to be decommissioned, and the date the equipment is decommissioned.
  - (2) Capacity and serial number of any new heater brought on-site, and the date such equipment is brought on-site.





- (3) The date the log was made and the first and last name of the person making the log.

2. Fuel Limitations

On a monthly basis, the Permittee shall calculate and record the 12-month rolling total of propane used at the facility.

3. Particulate Matter

The Permittee shall keep records of fuel supplier certifications. The certification shall contain information regarding the name of fuel supplier and lower heating value of the fuel. These records shall be made available to ADEQ upon request.

**E. Gasoline Storage And Dispensing**

1. The Permittee shall, for the gasoline storage tanks, maintain a file of the typical Reid vapor pressure of gasoline stored and of dates of storage. Dates on which the storage vessel is empty shall be shown.
2. If the gasoline is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent and the true vapor pressure is greater than 470 mm Hg (9.1 psia), the Permittee shall record the average monthly temperature, and true vapor pressure of gasoline at such temperature.
3. The average monthly storage temperature shall be an arithmetic average calculated for each calendar month, or portion thereof, if storage is for less than a month, from bulk liquid storage temperature determined at least once every seven days.
4. The true vapor pressure shall be determined by the procedures in American Petroleum Institute Bulletin 2517, amended as of February 1980 (and no future editions), which is incorporated herein by reference and on file with the Office of the Secretary of State. This procedure is dependent upon determination of the storage temperature and the Reid vapor pressure, which requires sampling of the petroleum liquids in the storage vessels. Unless the Director requires in specific cases that the stored petroleum liquid be sampled, the true vapor pressure may be determined by using the average monthly storage temperature and the typical Reid vapor pressure. For those liquids for which certified specifications limiting the Reid vapor pressure exist, the Reid vapor pressure may be used. For other liquids, supporting analytical data must be made available upon request to the Director when typical Reid vapor pressure is used.

**F. Fugitive Dust**

1. The Permittee is required to keep record of the dates and types of dust control measures employed.
2. The Permittee is required to show compliance with the opacity standards by having a Method 9 certified observer perform monthly survey of visible emission from fugitive dust sources. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard.



3. The Permittee is required to keep records of the name of the observer, the time, date, and location of the observation and the results of all surveys and observations.
4. The Permittee is required to keep records of any corrective action taken to lower the opacity of any emission point and any excess emission reports.

**G. Mobile Sources**

The Permittee shall keep a record of all emissions related maintenance activities performed on the Permittee's mobile sources stationed at the facility as per manufacturer's specifications.

**H. Periodic Activities**

1. The Permittee is required to record the date, duration and pollution control measures of any abrasive blasting project.
2. The Permittee is required to record the date, duration, quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.
3. The Permittee is required to maintain records of all asbestos related demolition or renovation projects. The required records include the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents.

**VIII. Odor/Dust Control Plan**

**A. Odor Control Plan**

For the swine confinement structures, the facility must maintain adequate ventilation and effluent management practices.

1. Adequate Ventilation
  - a. Natural ventilation with drop curtain sides and mechanical ventilation fans;
  - b. Negative pressure ventilation with exhaust wall fans and mechanically actuated air inlets
2. Effluent Management
  - a. All surfaces (including aisle, slatted floors, equipment, and walls) on which manure may collect and animals are exposed, must be maintained as clean and dry as possible.
  - b. Floors, walls, and equipment must be cleaned regularly to reduce manure collection.
  - c. Manure and process water collected in the shallow under-floors pits must be removed from the buildings using flush and gravity pull-plug methods.
  - d. All surfaces in the production buildings must be completely cleaned and washed down between groups of animals.



- e. Flush, pull-plug, and gutter systems must be maintained to remove effluent and process wastewater from the buildings and control manure accumulation.
- f. The shallow under-floor pits and gutters must be flushed and emptied per a programmed schedule to maintain a uniform and consistent loading of the treatment lagoons.
- g. Manure accumulation on the floor surfaces must be controlled and minimized by utilizing slatted floors to remove manure from the animal housing.
- h. Flush water lines must be located to minimize splashing and agitation, and minimizing odor release.
- i. Gravity drain pipeline cleanouts must be covered to minimize odor release and prevent accidental entry.

### 3. Effluent Collection, Storage, and Treatment Systems

- a. An evaporative lagoon must be used to collect, store, and treat the effluent and process wastewater generated.
- b. The operating loading rate for the storage and treatment system must be maintained for adequate manure and wastewater stabilization.
- c. A liquid cover must be maintained to manage and minimize the emissions of odorous materials from the storage and treatment system.
- d. Transfer piping into the lagoon must be designed and maintained to minimize the emission of odorous materials during loading operation.
- e. The storage and treatment system must be operated to manage and minimize odors by maintaining a volatile solids loading rate to maximize biological treatment and minimize the release of odorous materials
- f. Must utilize existing building structures and land formations to screen and minimize the emission of potential odorous materials.
- g. A liquid cover must be maintained to manage and minimize the emission of odorous materials from the treatment and storage systems.
- h. Must maintain transfer and inlet pipes to minimizing agitation of the water surface during loading to reduce the release of odorous materials to the atmosphere.
- i. Best management practices and operational procedures must be conducted to minimize the emission of odorous materials. The following alternative odor control technologies and work practices may be considered for future use:
  - (1) Biological or chemical treatment additives may be used in the treatment and storage system to enhance the biological activity,

effluent and process wastewater stabilization, and breakdown and stabilization of residual solids. Specific biological or chemical additives will be evaluated on a case-by-case basis to determine applicability and effectiveness.

- (2) Methane digestion may be used for treatment to aid in the breakdown and stabilization of effluent and minimize odor emissions.
- j. To minimize the emission of odorous materials, mortalities from this production facility must be handled and managed in a manner and using the following technologies and practices:
- (1) Mortalities must be removed from the buildings within 24 hours;
  - (2) Mortalities must not be left by the roadside for pick-up;
  - (3) Mortalities must be collected and transported to a central load-out location for pick-up; and
  - (4) Mortalities must be picked up and transported off-site by a commercial land fill truck in an enclosed waste container.

## **B. Dust Control Plan**

The following technologies and work practices must be provided and employed to ensure that dust is controlled and managed to minimize the amount of dust in the confinement structure for the health of the animals:

1. Pens must be maintained to keep the animals clean and comfortable. The following work practices are conducted to ensure that the animals remain clean:
  - a. Pens, floors, and walls must be cleaned by washing with water between animal groups to remove dust and manure accumulations.
  - b. Aisles between pens and stalls must be cleaned to remove dried manure and debris accumulation regularly. Manure must be placed in the manure and wastewater collection pits for removal from the building.
  - c. Farrowing pens with young piglets must be cleaned daily to maintain a clean environment.
2. No bedding must be used in this facility. Slotted flooring must be used to remove manure and wastewater from the animal production area.
3. The following work practices are conducted while preparing feed to ensure minimum dust generation:
  - a. Oil must be added to the feed rations to minimize dust during feed handling and consumption.
  - b. Feed must be delivered to weanlings, finishers, and sows in the breeding and gestation barns through an enclosed feed transfer system to minimize



dust release. Sows in farrowing barns must be hand fed in individual sow feeders for the first two to three days and then transitioned to a fully enclosed automatic ad-lib feeder. Feed systems must be operated and maintained to minimize dust. Feed downspouts must be designed to reduce feed drop distance to minimize dust release.

- c. Fully enclosed feed storage tanks must be located outside of each barn. Feed storage tanks and delivery system must be inspected regularly and maintained to keep mechanical equipment in good condition. Feed must be delivered into the feed storage tanks through an enclosed auger with a flexible discharge spout to minimize dust release and feed spillage. Feed spillage must be collected on a discharge spout to minimize dust release and feed spillage.
  - d. Dust and debris accumulations on exhaust fan blades, shutters, housing, and guards must be removed regularly to minimize dust release. Exhaust fan blades, shutters, housing, and guards must be thoroughly cleaned when rooms are emptied and cleaned.
4. Building sidewall/soffit inlet screens must be maintained to assure adequate air flow into the building attic and hallway. Sidewall soffit screens must be cleaned of debris such as dust, cobwebs, and other material as needed to keep them open. Weeds and vegetative growth around the building must be controlled to reduce airflow blockages and prevent harboring of dust and other debris.

**IX. LIST OF ABBREVIATIONS**

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CAFO	Concentrated Animal Feeding Operation
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EPA	Environmental Protection Agency
H2S	Hydrogen Sulfide
NAAQS	National Ambient Air Quality Standard
NOx	Nitrogen Oxides
NSPS	New Source Performance Standards
PM10	Particulate Matter Nominally less than 10 Micrometers
PM2.5	Particulate Matter Nominally less than 2.5 Micrometers
PPM	Parts per Million
PTE	Potential-to-Emit
SOx	Sulfur Oxides
TPY	Tons per Year
VOC	Volatile Organic Compound