



DEPARTMENT of ENVIRONMENT  
and NATURAL RESOURCES

JOE FOSS BUILDING  
523 EAST CAPITOL  
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

August 4, 2016

Keith Needham  
Buffalo Ridge Ranch  
48754 209<sup>th</sup> Street  
Elkton, SD 57026-6720

RE: Buffalo Ridge Ranch Manure Management System  
Plans and Specifications Review – New Farrowing Barn

Dear Mr. Needham:

The Department of Environment and Natural Resources (DENR) received four copies of plans and specifications for a new farrowing barn for your existing swine feeding operation. You currently have coverage under the General Water Pollution Control Permit for Concentrated Animal Feeding Operations (the general permit) for your swine feeding operation (permit number SDG-0100159). The proposed farrowing barn is intended to provide more space per animal and allow for longer holding times. **No change in animal numbers is proposed.** The existing manure management system is located in the South ½ of Section 3, Township 110 North, Range 47 West in Brookings County, South Dakota.

Your existing manure management system is for housed lots feeding a maximum of 4,141-head of production and finisher swine consisting of a maximum of 221 farrowing sows with litters, 1,120 gestating sows, 400 gilts, and 2,400 finisher swine (4,141 swine weighing 55 pounds or more) located at two sites.

**Site 1**, located in the Southeast ¼ of Section 3, currently houses a maximum of 221 farrowing sows with litters, 1,120 gestating sows and 400 gilts. The existing manure management system consists of Barns 1, 2, 3, 4, 6, and 8 with shallow concrete pull-plug pits, Barn 5 with a concrete deep-pit with at least 365 days of liquid storage capacity, Barn 7 with a concrete pit with less than 180 days of storage capacity, piping, diversion dikes or channels, a holding pond, and no acres of drainage area. The holding pond designed capacity is 365 days of liquid storage.

**Site 2**, located in the Southwest ¼ of Section 3, currently houses a maximum of 2,400 finisher swine. The existing manure management system consists of two barns with concrete deep-pits and no acres of drainage area. Each deep-pit has at least 270 days of liquid storage capacity.

The proposed farrowing barn (assumed to be Barn 9) will be located at Site 1, in the area between existing Barns 1, 2, 5, and 8. The new barn will have shallow concrete pull-plug pits. Manure will be directed to the existing holding pond through new and existing gravity sewer piping. As the plans for the new farrowing barn do not propose to change the currently permitted

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maximum number of swine that may be housed at Site 1, the existing holding pond will continue to have 365 days of liquid storage capacity.

We have reviewed and hereby conditionally approve the plans and specifications for the proposed farrowing barn. This approval expires on August 4, 2018, unless construction of the proposed modifications to the manure management system has been started by that date. Requirements that you must implement are listed on the attached pages. Failure to implement the requirements on the following pages prior to operation of the proposed manure management system will invalidate this approval.

Two copies of the approved plans are being retained for our files. If significant deviations from the approved plans are required, those changes and change orders must be approved by the department prior to construction. A complete set of as-built plans will be required if there are any deviations from the approved plans and specifications during construction.

On completion of construction of the proposed farrowing barn, the enclosed Notice of Completion must be returned to the department. **You cannot populate the new farrowing barn, or use the shallow pull-plug pit beneath it to store manure, until the department issues an updated Certificate of Compliance and coverage under the general permit for the new barn.** Continued compliance is dependent upon you performing proper operation and maintenance activities. You will be liable for any noncompliance with applicable South Dakota environmental laws or regulations.

Our review is primarily to assure that the system meets the requirements of the general permit and does not cover items such as quality of materials, structural soundness, or electrical and mechanical design features. Approval of the plans and specifications does not in any way release the producer from the responsibility that the project will be an operable facility when construction is completed.

If you have any questions regarding the content of this letter, please contact Keith Miller, Feedlot Permit Program, at (605) 882-5111. Thank you for your cooperation.

Sincerely,



Kent R. Woodmansey, PE, Engineering Manager  
Feedlot Permit Program  
Phone: (605) 773-3351

Enclosures: Construction Schedule postcard  
Notice of Completion form

Cc: Jim Housiaux, PE, Banner Associates, Inc., P.O. Box 298, Brookings, SD 57006  
Brookings County Commissioners

## REQUIREMENTS

The following requirements must be implemented before we will issue an updated Certificate of Compliance and coverage under the general permit for the new farrowing barn. Failure to implement these requirements will invalidate this approval.

### Plans and Specifications

The plans and specifications review is to determine whether seepage, storage, and other design requirements will be met.

#### 1. Waterstop Location

Three of the section detail drawings (Sections 2/4, 3/4, and 4/4) on plan sheet 4, Foundation Sections, show waterstop in the construction joint between the pit floor and exterior walls located on the outside of the rebar connecting the pit floor to the walls. To protect rebar from the corrosive effects of manure, DENR requires installation of waterstop between the manure pit and the rebar. **Please have your engineer submit to DENR either a revised or an as-built plan sheet that includes detail drawings showing the location of installed waterstop between the pit and the rebar.**

#### 2. North Arrow

The orientation of the North arrow on plan sheet 1, Site Layout and Piping Plan, is not correct. **Please have your engineer submit to DENR either a revised or an as-built plan sheet showing the North arrow correctly orientated.**

#### 3. Construction Specification for Gravity Sewer Piping Testing

The submitted plans and specifications did not include a construction specification for the leakage testing of new gravity sewer piping for the new farrowing barn. DENR design criteria for gravity sewers specify leakage testing may include appropriate water or low pressure air testing. The leakage outward or inward (exfiltration or infiltration) shall not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system. **Please have your engineer submit to DENR either:**

- A construction specification for the leakage testing of the proposed piping; **OR**
- If your engineer determines leakage testing of the new piping is not possible given the nature of the project (connecting new piping to existing piping beneath an existing building), this must be stated in a cover letter to be included with the Notice of Completion that must be submitted to DENR when construction is complete.

#### 4. Perimeter Drain Tile

Section 02430, Drainage System, in the submitted specifications addresses installation of perimeter drain tile. Perimeter drain tile is not shown on the submitted plans. Please be aware that DENR does not approve installation of perimeter drain tile with an outlet around manure containment systems.

### General Permit

You will be required to operate your feeding operation and manure management system in accordance with the requirements in the general permit.

#### 1. Operation and Maintenance Guideline

The submittal for the new farrowing barn included an unsigned copy of an updated Operation and Maintenance Guideline; consisting of a Best Management Practices section and a Management Plan for Fly and Odor Control section. Please revise the Operation and Maintenance Guideline to address the following issues:

- In section E. Feedlot Manure Utilization or Disposal by Land Application, in item 3, on page OM-3, rather than a “50-foot buffer zone” the general permit requires at least a 100-foot buffer zone or 35-foot vegetated buffer between any manure land application areas and any natural or manmade drainage, open tile line intake structures, or other conduits to surface water. Please revise this paragraph to comply with general permit requirements; and
- In section E., item 3.b), on page OM-3, the general permit specifies a minimum of a 100-foot buffer zone to any natural or manmade drainage shall be maintained if manure is applied to frozen or snow-covered ground. A 35-foot vegetated buffer is not an option if manure is applied to frozen or snow-covered ground. Please revise this paragraph to comply with general permit requirements.

DENR must receive a signed copy of the revised Operation and Maintenance Guideline before we can issue a Certificate of Compliance and grant you coverage under the permit for the new farrowing barn. **Please submit a signed copy after you have reviewed the revised Operation and Maintenance Guideline with your engineer.**

#### 2. Notification

Construction Schedule – You or your engineer must notify the department of the proposed construction schedule for your project to allow our personnel the opportunity for construction inspections. Please fill out the enclosed postcard and return it to us prior to beginning construction. If any of the dates change from the ones submitted on the postcard, please notify Keith Miller at (605) 882-5111.

Other Government – You are responsible for contacting your local planning and zoning office to determine if there are any local ordinances or requirements with which you need to comply. If a stream, lake, or wetland will be dredged or filled during the construction of the feeding operation, then you need to contact the United States Corps of Engineers at (605) 224-8531 prior to construction of the manure management system.

Notice of Completion – The Notice of Completion form must be completed by your engineer and returned to the department when construction is complete. **You cannot populate the new farrowing barn, or use the shallow pull-plug pits beneath it to store manure, until the department issues an updated Certificate of Compliance and coverage under the general permit for the new farrowing barn.**

**3. Setback Distances and Water Wells**

The manure management system and the manure application sites must be located at least 150 feet from a private well owned by you, 250 feet from a private well not owned by you and 1,000 feet from any public water supply well. These setback areas cannot be included in the manure land application areas.

**4. Nutrient Management Plan (NMP)**

Buffalo Ridge Ranch's current NMP was approved by DENR on November 13, 2007. As the plans for the new farrowing barn do not propose a change in the maximum number of swine or the handling/storage of manure at your permitted swine feeding operation, an updated NMP is not required.

**A. Fields Missing Soil Phosphorus Test Result Documentation**

The general permit requires the results of a representative 0 to 6-inch soil phosphorus test from each field included in your NMP. In the department's November 13, 2007, conditional approval of your NMP, the two fields listed in the following table were not approved because a soil phosphorus test for each field was not included in the submitted documentation. **To have these fields approved for inclusion in your NMP, you must submit the results of a soil phosphorus test for each field to DENR. Please be aware you cannot apply manure to any fields not included in your approved NMP.**

| Buffalo Ridge Ranch – UNAPPROVED Fields Missing a Soil Phosphorus Test |           |                              |                 |                            |          |
|--|-----------|------------------------------|-----------------|----------------------------|----------|
| Field ID   | County    | Legal Description            | Available Acres | Soil Sampling Requirements |          |
|  |           |                              |                 | 0-2 feet                   | 2-4 feet |
| 11   | Brookings | S ½, Section 10, T110N, R47W | 162.8           | Yes                        | No       |
| 12   | Brookings | N ½, Section 10, T110N, R47W | 145.0           | Yes                        | No       |

**B. Adding Fields to Approved NMP**

To add fields to your approved NMP, you must submit the required information for each additional field to the department for our review and approval. Information on adding fields to your approved NMP may be obtained from your local Natural Resources Conservation Service (NRCS) office. You may also contact us for assistance at (605) 773-3351, or visit our website at <http://denr.sd.gov/des/fp/fieldadditions.aspx> for instructions on adding fields. **You may not apply manure to any fields not included in your approved NMP.**

**5. Other Permits That May or Will Be Required**

Water Right Permit – Depending on your water source and usage, you may need to obtain a water rights permit. Information concerning this permit can be obtained by calling Eric Gronlund at (605) 773-3352. Please contact Eric so he can assist you in determining if you need to obtain a water rights permit.

Emission Reporting – Depending on the estimated quantity of emissions of hazardous substance from your facility, you may be required to submit a continuous release report to the State Emergency Response Commission and Local Emergency Planning Commission. Information regarding emission reporting and how to determine if you need to submit a report can be found on the department's website at [http://denr.sd.gov/des/gw/SARATitleIII/Emissions\\_from\\_Animal\\_Waste.aspx](http://denr.sd.gov/des/gw/SARATitleIII/Emissions_from_Animal_Waste.aspx) or by contacting Trish Kindt with the department at 1-800-433-2288.

Permit to Occupy Right of Way – If manure application will involve placing hoses or other equipment in a state highway right of way (for example, in a road ditch or through a culvert), you must first obtain a Permit to Occupy Right of Way. Application for this permit may be made through the local South Dakota Department of Transportation area office. Contact your local SD DOT area office for more information on this permit. In addition, please contact your county highway superintendent to determine if your county has similar requirements.

Emergency Power Generator - The department has observed that emergency power generators have been installed at similar sized operations. If an emergency power generator will be installed at your operation it may require that you obtain an air quality permit. Please contact Earl Berg with the department's Air Quality Program at (605) 773-4051, to determine whether an air quality permit is required. If an air quality permit is required, you must have that permit prior to using the generator.