

NPDES PERMIT CNMP FOR
<Farm Name>, 2010

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**CNMP Provider Approval Page
(Replace this Page with Approval Page)**

Production Area Map

(Replace this page with Scaled Map(s) of the Production Area(s))

Map contents should include:

- **Animal Confinement Areas**
- **Waste Storage Structures**
- **Feed Storage Areas**
- **Bedding Storage Areas**
- **Processing Centers**
- **Treatment Implements**
- **Access Roads**
- **Active and Inactive Wells**
- **Runoff flow directions**
- **Identification of clean and contaminated runoff**
- **Production Area Conservation Practices**
- **Other production area implements discussed in this CNMP**

CAFO Waste Storage Structures

Current Waste Storage Structure Synopsis:

Total Number of Storage Structures:

Total Operational Storage Volume of All Structures Combined: <Select>

Total CAFO waste produced in a six month Time Period: <Select>

Total Days of Storage Capacity:

Date by which six months of storage must be obtained:

Is all CAFO Waste directed to storage structures? <Select>

Additional Commentary:

Records documenting or demonstrating the current structural design of all storage structures including as-built drawings and specifications, of any CAFO waste storage structures, whether or not currently in use, will be kept on-farm with the permittee's CNMP in [Appendix C-1](#) until structures are permanently closed in accordance with **Part I.B.2** of the farm's permit.

Current Storage Structures:

*(Copy and paste this section for each storage structure at the farm)

Structure Name:

Structure Type:

Collects CAFO waste from:

Date Constructed:

Dimensions (L x W x D in feet):

Liner Material and Thickness:

Liner Condition:

Depth from bottom elevation to seasonal high water table: feet

Subject to runoff or direct precipitation?: <Select>

Total Design Volume: <Select>

Unusable Volume (ie. solids accumulation): <Select>

Freeboard: <Select>

Emergency Volume: gallons; inches. This represents a <Select>, 24-hour storm

Operation Volume: <Select>

Approximate Days of Storage:

Describe type and location of depth gauge:

Does the depth gauge clearly delineate the top of the freeboard, emergency volume, and operational volume? <Select>

When was the depth gauge last re-established to account for settling?

Status of Engineering Documentation or Engineering Evaluation: <Select>

Results of the documentation/evaluation: This structure <Select> the <Select> NRCS 313 Standard.

List of needed repairs/upgrades and dates by which they will be completed:

Additional Commentary on this Structure (transfer equipment, safety information, etc.):

Future Storage Structures:

Any storage structures constructed before April 1, 2015 will at a minimum, be constructed in accordance with NRCS standards, set forth in Conservation Practice Standard No. 313, Waste Storage Facility, dated November 2005.during the period of coverage under

New swine, poultry, and veal facilities will be designed to have all contaminated areas of the production area, including waste storage structures, totally enclosed and not subject to precipitation and, therefore, not needing room for the emergency volume in their storage structures.

Storage Structure Inspection Plan

All storage structures at <Farm Name> will be inspected a minimum of one time weekly year-round. The results of the inspections will be kept with the CNMP in **Appendix C-2** and retained for a period of five years. All weekly inspections will include visual inspection of each of the following:

- a) The CAFO waste dikes for cracking, inadequate vegetative cover, woody vegetative growth, evidence of overflow, leaks, seeps, erosion, slumping, animal burrowing or breakthrough, and condition of the storage structure liner
- b) The depth of the CAFO waste in the storage structure and the available operating volume as indicated by the depth gauge
- c) The collection system, lift stations, mechanical and electrical systems, transfer stations, control structures, and pump stations to assure that valves, gates, and alarms are set correctly and all are properly functioning.
- d) Other necessary inspection information:

Storage Structure Operation & Maintenance Program

<Farm Name> will initiate steps to correct any condition that is not in accordance with this Storage Structure Operation and Maintenance Program. Specific records of each item below will be kept in the Appendices as noted below.

- a) If CAFO waste rises above the maximum operational volume level, the DNRE will be notified (<Phone Number>). The emergency volume will be restored within one week and removed CAFO waste will be land applied in accordance with permit conditions. The DNRE will be notified if either of these it not achievable. Descriptions of such events will be recorded in the CNMP in **Appendix A-1**.
- b) At some point in time during the period of November 1 to December 31 of each year, there will be a minimum available operational volume in the CAFO waste storage structures equal to the volume of CAFO waste generated from the operation of the CAFO in a six-month or greater time period (including normal precipitation and runoff in the production area during the same time period). The date of this occurring shall be recorded in the CNMP in **Appendix A-1**.
- c) Vegetation will be maintained at a height that stabilizes earthen CAFO waste storage structures, provides for adequate visual inspection of the storage structures, and protects the integrity of the storage structure liners. The vegetation will have sufficient density to prevent erosion. Records will be stored in **Appendix C-3**.
- d) Dike damage caused by erosion, slumping, or animal burrowing will be corrected immediately and steps taken to prevent occurrences in the future. Records will be stored in **Appendix C-3**.

- e) The integrity of the CAFO waste storage structure liner will be protected. Liner damages will be corrected immediately and steps taken to prevent future occurrences. Records will be stored in **Appendix C-3**.
- f) Problems with the collection system, lift stations, mechanical and electrical systems, transfer stations, control structures, and pump stations will be corrected as soon as possible. Records of these inspections and records documenting any actions taken to correct deficiencies will be kept with the CNMP for a minimum of five years in **Appendix C-3**. Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors causing the delayed correction.
- g) CAFO waste will be stored only in storage structures as described above, except for solid stackable manure collected in-barn, prior to transfer to storage.

Other necessary O & M practices:

Practice Description	Frequency

Best Management Practices Requirements

<Farm Name> has implemented all of the following Best Management Practices (BMPs) with the objective of preventing unauthorized discharges to waters of the state from production areas and land application activities.

Conservation Practices

<Farm Name> maintains the following conservation practices at or near the production area, land application areas, and heavy use areas within pastures associated with the CAFO. These practices are consistent with the intent of NRCS Conservation Practices; in compliance with the requirements of the farm's permit; and sufficient to control the runoff of pollutants to surface waters of the state in quantities that may cause or contribute to a violation of water quality standards. The following is a list of practices. Specific locations are identified on the production area map on [Page 3](#) and in [Appendix B-1 \(Field-by-Field Assessments\)](#).

<List Conservation Practices>

Prevent Direct Contact of Animals with Waters of the State

<Farm Name> prevents access of animals to surface waters of the state at the production area of the CAFO. The following is a description of the existing implemented controls which prevent access of animals to waters of the state:

<Description of Controls that Prevent Animal Access>

Animal Mortality

<Farm Name> handles and disposes of dead animals in a manner that prevents contamination of waters of the state. Mortalities are not disposed of in any liquid CAFO waste or storm water storage structure that is not specifically designed to treat animal mortalities. Records of mortality handling and disposal are kept with this CNMP in **Appendix C-4** for a minimum of five years.

<Describe Mortality Management Practices>

Chemical Disposal

<Farm Name> prevents introduction of hazardous or toxic chemicals (for purposes of disposal) into CAFO waste storage structures. This includes pesticides, petroleum products/by-products, etc.

<Describe Practices that Ensures No Improper Chemical Disposal>

Inspection, Proper Operation, and Maintenance Program

<Farm Name> will conduct periodic visual inspections, proper operation, and maintenance of all CAFO waste-handling equipment (including piping and transfer lines, and all runoff management devices (e.g., cleaning separators, barnyards, catch basins, screens) to prevent unauthorized discharges to surface water and groundwater. These activities will be conducted at the frequencies noted below. Records of inspections and corrective actions will be kept in **Appendix A-2** for a minimum of five years. All deficiencies will be corrected as soon as possible. Any deficiencies not corrected within 30 days must be accompanied by an explanation of the factors causing the delayed correction.

Activity/Description	Frequency
Visual inspection of all clean storm water and floodwater diversion devices, including: <List Specific Devices>	Weekly
Visual inspection of water lines, including drinking water and cooling water lines, including:* <List Specific Lines>	Daily
Visual inspection of above ground waste piping and transfer lines, including:* <List Specific Lines>	Daily
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	
<Identify>	

*Denotes an activity for which an equivalent alternative may be identified. Alternative(s) are identified and described here:

Land Application of CAFO Waste

Field-by-Field Assessment

<Farm Name> has conducted field-by-field assessments of all land application areas. The assessments are located in **Appendix B-1**. An assessment for a particular field can be deleted from the CNMP once that field is no longer used for land application.

The assessments identify the following field-specific conditions:

- Slopes
- Soil types
- Locations of tile outlets, tile risers
- Tile depth
- Conservation practices
- Offsite conditions, such as buffers and distance or conveyance to surface waters.
- Areas that have a potential for erosion due to topography, activities, or other factors,
- Fields, or portions of fields, that will be used for surface application of CAFO waste without incorporation to frozen or snow-covered ground in accordance with the Department 2005 Technical Standard for the Surface Application of CAFO Waste on Frozen or Snow-Covered Ground Without Incorporation or Injection.
- <Identify Other Conditions>

These assessments, along with consideration of land application and fertilization practices are utilized to ensure land applications.....

- Do not exceed the capacity of the soil to assimilate the CAFO waste
- Are in accordance with field-specific nutrient management practices that ensures appropriate agricultural utilization of the nutrients in the CAFO waste
- Do not exceed the maximum annual land application rates specified in Part I.A.4.b.7)c) of the farm's permit.
- Will not result in unauthorized discharges

New fields may not receive manure applications until all of the following are complete:

- 1. A permit modification request is submitted to the DNRE that includes: The field-by-field assessment, a map showing the entire field, its size in acres, location information, planned crops, and realistic crop yield goals.**
- 2. The request is public noticed.**
- 3. <Farm Name> has been notified by the Department that processing of the permit modification is complete.**
- 4. The assessment is incorporated into this CNMP.**

Field Inspections

Prior to conducting land application of CAFO waste to fields determined to be suitable in the field-by-field assessment, <Farm Name> will perform the following inspections at the indicated frequency to ensure that unauthorized discharges do not occur as a result of the land application of CAFO waste. Records of inspections, monitoring, and sampling required by the “Field Inspections” will be retained in **Appendix B: The Land Application Log**.

Activity/Description	Frequency
CAFO waste sampled and analyzed for: TKN, ammonium, total phosphorus. The results will be used to determine land application rates. Results and analysis methods will be recorded in Appendix B-3 .	Annually
Soils at land application sites sampled and analyzed for phosphorus levels (Bray P1). The results will be used to determine land application rates. Results recorded in Appendix B-4 .	Every 3 Years
Daily Land Applications: Inspect each field for soil cracking, moisture-holding capacity, crop maturity, and the condition of conservation practices. Results recorded in Appendix B-7	0-48 hours prior to each land application
Tile Outlet Inspections: Inspect all tile outlets draining a given field. Record written descriptions of tile outlet inspection results, and observe compare color and odor of tile outlet effluents in Appendix B-7 .	<ul style="list-style-type: none"> • Immediately prior to land application • Immediately at the conclusion of each day's land application • Within 24 hours of the first ½ inch rain event in the 30 days after land application
Land Application Equipment Inspections: Inspect all equipment for leaks, structural integrity, and proper operation and maintenance. Record inspections in Appendix B-7 .	Daily during use
Land Application Equipment Calibration: Record results and date in Appendix B-9	Annually
<Identify>	
<Identify>	
<Identify>	

* If an inspection reveals a discharge with color, odor, or other characteristics indicative of an unauthorized discharge of CAFO waste, <Farm Name> will immediately notify the DNRE of the suspected unauthorized discharge in accordance with the reporting procedures contained in Part II.C.6 of the farm's permit and record the findings in the **Appendix B-7**.

Maximum Annual Land Application Rates

<Farm Name> will not exceed the maximum annual land application rates calculated as described in Part I.A.4.b.7)c) of the farm's permit. Rates will be calculated using realistic crop yield goals, the most recent soil samples, and <select> CAFO waste samples. Methodology, calculations, and their results, will be recorded in **Appendix B-6**. In general terms, rates will be consistent with the following:

Bray P1 = 0-74 ppm of P: Annual CAFO waste application shall not exceed the lesser of these:

- 1 year N recommendation for next cropping year (MSU Extension Bulletin E2904) or 1 year N removal rate for legumes.
- 4 year phosphorus removal rates as calculated using the Table on Pages 11 & 12 of Permit No. MIG019000. This must be calculated using the removal rate for the planned crop rotation specific to each field.

Bray P1 = 75-149 ppm of P: Annual CAFO waste application shall not exceed the lesser of these:

- 1 year phosphorus removal rates as calculated using the Table on Pages 11 & 12 of Permit No. MIG019000 **OR** 2 year phosphorus removal rates as calculated using the Table on Pages 11 & 12 of Permit No. MIG019000. If the 2 year rate is utilized, the land application log will specify the 2nd year crop to be grown, and the reason why the 1 year rate is impractical.
- 1 year N recommendation for next cropping year (MSU Extension Bulletin E2904) or 1 year N removal rate for legumes.

Bray P1 > 150 ppm of P: No land applications of CAFO waste will occur.

Variation from these methods of calculating the maximum annual land application rates must be authorized in <Farm Name>'s Certificate of Coverage (COC), and will require that the farm request a permit modification from the DNRE if not already authorized.

These variations are already authorized in <Farm Name>'s COC:
<Identify>

Land Application Log

<Farm Name> will retain **up-to-date** records of land application inspections, monitoring, testing, and recordkeeping with this CNMP in **Appendix B “Land Application Log”**. These records will be retained for a minimum of five years. Some records are required to be retained in the CNMP as noted below. All of the following are required records to be retained for all land applications:

Description of Activity/Record	Record Location
The time, date, quantity, method, location, and application rate for each location at which CAFO wastes are land applied	Appendix B-5
The crop, the realistic yield goal, and actual yield for each location at which CAFO wastes are land applied	Appendix B-6
Statement whether the land was frozen or snow-covered at the time of application	Appendix B-5
Methodology and calculations showing the total nitrogen and phosphorus to be applied to each field receiving CAFO waste, identifying all sources of nutrients, including sources other than CAFO waste	Appendix B-6
The total amount of nitrogen and phosphorus actually applied to each field receiving CAFO waste, irrespective of source, including documentation of calculations for the total amount applied	Appendix B-6
A written description of weather conditions at the time of application and for 24 hours prior to and following application based on visual observation	Appendix B-7
Printouts of weather forecasts from the time of land application. Weather forecasts may also be saved as electronic files, in which case the files do not need to be physically located in the Land Application Log, but the log shall reference the location where the files are stored.	Appendix B-8

Land Application Methods

<Farm Name> will subsurface inject or incorporate CAFO waste into the soil within 24 hours of application. CAFO waste subsurface injected into frozen or snow-covered ground will have substantial soil coverage of the applied CAFO waste. The following exceptions apply:

- Injection or incorporation may not be feasible where CAFO wastes are applied to pastures, forage crops such as alfalfa, wheat stubble, or where no-till practices are used. CAFO waste will not be applied to pastures, forage crops, or no-till fields where it may enter waters of the state.
- On ground that is frozen or snow-covered, CAFO waste may be surface applied and not incorporated within 24 hours only if there is a field-by-field demonstration, in accordance with the Department 2005 Technical Standard for the Surface Application of CAFO Waste on Frozen or Snow-Covered Ground Without Incorporation or Injection (last page of this permit), showing that the land application will not result in a situation where CAFO waste may enter waters of the state.

Demonstrations will be kept in **Appendix B-2**. Acceptable demonstrations will include documentation of all of the following:

- Approval by a certified CNMP provider
- NRCS MARI Score of 37 or lower
- An on-site inspection
- Topographic maps designating areas where runoff will not flow to surface waters as the only authorized areas to apply manure to frozen and snow covered ground without incorporation.

The following limitations apply to applications to frozen and snow covered ground without incorporation:

- Demonstrations will be submitted to the Department prior to use of the field.
- CAFO waste surface applied to ground that is frozen or snow-covered shall be limited to no more than 1 crop year of P per winter season, including pastures, forage crops, and no-till fields.

The following briefly describes the winter land application practices at <Farm Name>:
<Describe>

Land Application Setbacks

<Farm Name> will comply with all of the following setback requirements. Individual required setbacks are identified in the field-by-field assessment (**Appendix B-1**) :

- CAFO waste will not be applied closer than 100 feet to any ditches that are conduits to surface waters, surface waters except for up-gradient surface waters, open tile line intake structures, sinkholes, or agricultural well heads.
- The 100-foot setback required above may be reduced with a 35-foot wide vegetated buffer. CAFO waste shall not be applied within the 35-foot buffer.
- CAFO waste shall not be applied within grassed waterways and swales that are conduits to surface waters.
- Setbacks are measured from the ordinary high water mark, where applicable, or from the upper edge of the bank if the ordinary high water mark cannot be determined.

Non-Production Area Storm Water Management

<Farm Name> has implemented practices including preventative maintenance, good housekeeping, and periodic inspections of at least once per year, to minimize and control pollutants in storm water discharges associated with the following areas:

- Immediate access roads and rail lines used or traveled by carriers of raw materials, waste material, or by-products used or created by the facility
- Sites used for handling material other than CAFO waste
- Refuse sites
- Sites used for the storage and maintenance of material handling equipment
- Shipping and receiving areas

Records and descriptions of non-production area storm water management practices are kept in **Appendix A-3**.

Other Important Compliance Information

Instructions: This CNMP section is not required under General Permit MIG019000. However, it can be an important tool to assist permittees in maintaining compliance. If the permittee and/or CNMP provider choose to include it, please replace this page with appropriate sections which will assist the permittee in maintaining compliance with the permit. Examples: Staff training, instructions to assist with compliance, record keeping synopsis, etc.

EMERGENCY ACTION PLAN

Instructions: This CNMP section is not required under General Permit MIG019000. However, it could be an important tool for permittees if emergencies arise. If the permittee and/or CNMP provider choose to include it, please replace this page with an Emergency Action Plan. Otherwise, it may be deleted.