Nutrient Management Plan (NMP)

Concentrated Animal Feeding Operation (CAFO) General Permit UTG080000
Utah Pollutant Discharge Elimination System (UPDES)

General Instructions

- Complete this template to develop a site-specific NMP, following the Narrative Rate Approach, for submittal to the Division of Water Quality (DWQ) with a Notice of Intent (NOI) to obtain coverage under UPDES General Permit No. UTG080000 for CAFOs.
- Permit requirements are included in this template for reference and in many cases are paraphrased or summarized. The planner and CAFO owner or operator should refer to the general permit for the exact language of each requirement.
- Instructions for specific items are provided throughout the template. Those instructions can be viewed by clicking on the ? symbol.

I. General Information

(A) Facility Name: _____

? **(B) Owner/Operator:** _____

(C) Facility Physical Address: _____

City: _____ **State:** _____ **Zip Code:** _____

County: _____

? **(D) Production Area Lat/Long:** _____ N _____ W

? **(E) Receiving Water:** _____

? **(F) Period NMP Covers:** _____

II. Certification Statements

(A) Owner/Operator Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Operator's Name and Official Title (Print or Type)

Signature | Date

(B) Owner/Operator's Certified Planner Certification

I certify that the comprehensive nutrient management plan (CNMP) or nutrient management plan (NMP) for the facility shown above was approved by a Natural Resources Conservation Service (NRCS) approved certified planner or a state certified planner as defined in Utah Administrative Code, that is qualified to prepare, review, and approve CNMPs and NMPs for compliance with NRCS CNMP and NMP planning practices and NRCS standard practices. I certify that the CNMP or NMP approved for this facility is current and includes all applicable NRCS practice standards for the facility and complies with those practice standards. I certify that the CNMP or NMP, when fully implemented, will be in accordance with all CAFO permit requirements and all NRCS practice standards as applicable for the above-named facility.

Name of Certified Planner (Print or Type) | Date CNMP or NMP was Approved by the Certified Planner

Signature | Date

III. Facility Maps, Aerial Photos, or Satellite Images

(A) ☐ Appendix A includes a map of the facility's production areas. The following features are included and labeled, as applicable (Several images may be needed for large facilities.):

- ✓ Corrals
- ✓ Pens
- ✓ Confinement buildings and barns
- ✓ Animal or product processing barns, buildings, or areas
- ✓ Feed and bedding storage areas
- ✓ Solid and liquid waste storage structures or areas, both interim and permanent
- ✓ Separators
- ✓ Composting areas
- ✓ Mortality storage areas and on-site disposal sites
- ✓ Incinerators
- ✓ Pumping stations
- ✓ On-site drains and culverts
- ✓ Berms
- ✓ On-site drywells or groundwater wells
- ✓ On-site irrigation or drainage ditches and canals
- ✓ Any conveyances to waters of the state
- ✓ Wetlands
- ✓ Nearest water of the state
- ✓ Any on-site surface water
- ✓ North arrow
- ✓ Scale (in feet) of the map, photo, or image.

(B) ☐ Appendix A includes a map(s) of land application sites. The following features are included and labeled, as applicable:

- ✓ Field names or numbers, consistent with those listed in Sections IX, X, and XI of this NMP.
- ✓ The location of setbacks, buffers, or other conservation practices, as identified in Section IX of this NMP.
- ✓ Fields with nutrient application limitations, as identified in Section XI of this NMP.
- ✓ Any runoff and tail water controls.
- ✓ Any surface water or conveyances to waters of the state.
- ✓ Subsurface conveyances to waters of the state such as tile drain outlets.

IV. Storage of Manure and Process Wastewater

- *Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities (UTG080000 IX.A.1).*
  - *Proper storage capacity for the required storm event shall be maintained.*
    - *Manure and process wastewater stored in impoundments shall be removed as necessary to maintain a minimum freeboard of one foot or more, in addition to maintenance of the freeboard needed for the required storm event.*
    - *When the storage capacity of impoundments is less than the volume required to store runoff from the required storm event, the structures shall be properly dewatered to a level that restores the required capacity and freeboard. During dewatering, land application sites must have holding capacity and containment to receive process wastewater.*
  - *CAFOs constructing new wastewater retention facilities or modifying existing retention facilities shall ensure that all retention structure design and construction will be in accordance with all applicable, current, NRCS practices and standards including Utah NRCS Practice 313, Waste Storage Facility.*
- *Production area required best management practices (BMPs) (UTG080000 VII.G).*
  - *Perform weekly inspections of all storm water run-on diversion devices, runoff diversion structures, animal waste storage structures and devices channeling process wastewater to impoundments or tanks.*
  - *Perform daily visual inspections of water lines, including drinking water or cooling water lines looking for leaks that could create process wastewater that would require containment or treatment of the leaked water.*
  - *Install depth markers in all open liquid impoundments and terminal storage tanks to indicate the maximum elevation to maintain capacity necessary to contain the facility's required storm event and freeboard. The depth markers shall be marked at a maximum of one-foot increments.*
  - *Perform weekly inspections of impoundments and tanks. Record the liquid elevations in the structures as indicated by the depth markers.*
  - *Correct any deficiencies found as a result of daily and weekly inspections as soon as possible, but no later than 30 days after identifying the deficiency, unless:*
    - *Factors preventing correction within 30 days have been documented.*
    - *Any deficiency where storage freeboard or structure integrity is insufficient to contain the required storm event, must be corrected immediately.*
  - *Remove accumulations of liquids, solids, and manure from impoundments and tanks as necessary to maintain the capacity for the required storm event and minimum freeboard.*
  - *Maintain on-site records documenting the implementation of the required BMPs. All records shall be maintained and retained on-site for five-years from the date they were generated. Records must be made available during inspections by the permitting authority or authorized agent.*
  - *A CAFO's production area may not be located within a 100-year flood plain, unless the production is protected from inundation damage and illegal discharges that may result from 100-year flood waters or flow.*
  - *There shall be no discharge of manure, litter, or process wastewater from the production area to groundwater with direct hydrologic connection to surface waters of the state.*

(A) Manure, litter, and process wastewater generation and storage summary

1. The required storm event containment for the facility:

   ☐ 25-year, 24-hour: _____ in. OR

   ☐ Specify – storm return frequency: _____, storm size:_____ in.

2. Identify all structures used to store solid manure, litter, and compost. List the structure name or number for each:

3. Identify all structures used to store liquid manure and process wastewater (including contaminated runoff). List the structure name or number for each:

4. Annual solid manure/litter generation: _____ (cubic feet)

_____ (tons)

5. Annual liquid manure/process wastewater generation: _____ ☐ Gallons OR ☐ Cu. Ft.

6. Required storage period (days): _____

7. Storage period manure/litter storage capacity requirement (cubic feet): _____

8. Storage period process wastewater storage capacity requirement: _____ ☐ Gallons OR ☐ Cu. Ft.

(B) Manure/litter storage structure detail

For each solid manure (including compost) storage structure identified in IV.A.2 above:

☐ Complete this section (copy and paste or attach additional pages as needed) OR

☐ Attach AWM data sheets (Appendix B)

1. Structure Name or Number	2. Design Storage Period (days)	3. Total Volume to Store (cubic feet)	4. Total Volume of Structure (cubic feet)
5. Total Manure/Litter Storage Capacity			

(C) Process wastewater storage structure detail

For each liquid manure and process wastewater (including contaminated runoff) storage structure identified in IV.A.3 above:

☐ Complete this section (copy and paste or attach additional pages as needed) OR

☐ Attach AWM data sheets (Appendix B)

1. Structure Name or Number	2. Design Storage Period (days)	3. Liquid Manure and Process Wastewater Volumes ☐ Gallons OR ☐ Cubic Feet				4. Required Freeboard (feet)
		a. Total Volume to Store	b. Design Storm Storage	c. Solids Accumulation	d. Total Volume	
5. Total Volumes						

(D) Freeboard and depth marker requirements

For each open liquid impoundment and terminal storage tank, indicate the depths, to be indicated on the required depth marker or staff gauge, for each of the following (copy and paste or attach additional pages as needed):

1. Structure Name or Number	2. Maximum Operating Level (feet)	3. Emergency Level (feet)

(E) Liner requirements

1. For all liquid waste storage facilities identified in IV.A.3 and constructed after August 2006, provide the following (copy and paste or attach additional pages as needed):

a. Structure Name or Number	b. NRCS 313 Criteria Used	c. Risk	d. Vulner-ability	e. Liner Required?	f. Liner Complies?	g. Basis
	☐ Table 2a ☐ Table 2b ☐ Table 2c	☐ V. High ☐ High ☐ Mod. ☐ Slight	☐ V. High ☐ High ☐ Mod. ☐ Low	☐ Yes ☐ No	☐ Yes ☐ No (explain below) ☐ N/A (no liner required)	☐ Synthetic liner testing ☐ Earthen/in-place liner testing ☐ Published data ☐ Other (explain below)
	☐ Table 2a ☐ Table 2b ☐ Table 2c	☐ V. High ☐ High ☐ Mod. ☐ Slight	☐ V. High ☐ High ☐ Mod. ☐ Low	☐ Yes ☐ No	☐ Yes ☐ No (explain below) ☐ N/A (no liner required)	☐ Synthetic liner testing ☐ Earthen/in-place liner testing ☐ Published data ☐ Other (explain below)
	☐ Table 2a ☐ Table 2b ☐ Table 2c	☐ V. High ☐ High ☐ Mod. ☐ Slight	☐ V. High ☐ High ☐ Mod. ☐ Low	☐ Yes ☐ No	☐ Yes ☐ No (explain below) ☐ N/A (no liner required)	☐ Synthetic liner testing ☐ Earthen/in-place liner testing ☐ Published data ☐ Other (explain below)
	☐ Table 2a ☐ Table 2b ☐ Table 2c	☐ V. High ☐ High ☐ Mod. ☐ Slight	☐ V. High ☐ High ☐ Mod. ☐ Low	☐ Yes ☐ No	☐ Yes ☐ No (explain below) ☐ N/A (no liner required)	☐ Synthetic liner testing ☐ Earthen/in-place liner testing ☐ Published data ☐ Other (explain below)
	☐ Table 2a ☐ Table 2b ☐ Table 2c	☐ V. High ☐ High ☐ Mod. ☐ Slight	☐ V. High ☐ High ☐ Mod. ☐ Low	☐ Yes ☐ No	☐ Yes ☐ No (explain below) ☐ N/A (no liner required)	☐ Synthetic liner testing ☐ Earthen/in-place liner testing ☐ Published data ☐ Other (explain below)
	☐ Table 2a ☐ Table 2b ☐ Table 2c	☐ V. High ☐ High ☐ Mod. ☐ Slight	☐ V. High ☐ High ☐ Mod. ☐ Low	☐ Yes ☐ No	☐ Yes ☐ No (explain below) ☐ N/A (no liner required)	☐ Synthetic liner testing ☐ Earthen/in-place liner testing ☐ Published data ☐ Other (explain below)

2. Provide an explanation for any "No" response in IV.E.1.f ("Liner complies?") above; include Structure Name or Number, reason for noncompliance, and schedule of activities to bring structure into compliance with liner requirement:

3. Provide an explanation for any "Other" response in IV.E.1.g ("Basis") above; include Structure Name or Number and a description of the testing, data, or information used to determine liner compliance with the NRCS 313 standard:

(F) Manure Storage Records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

Refer to the list of required records in section XIV and the production area record keeping forms (Appendix C).

1. List below additional records, if any, maintained to document implementation and management of this NMP to ensure adequate storage of manure and process wastewater, including proper operation and maintenance of the impoundments and structures.

Record/Documentation	Frequency

V. Animal Mortality Management

- *Ensure proper management of mortalities to ensure that they are not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities (UTG080000 IX.A.2). Mortality management and disposal shall be according to NRCS practices or director approved practice and any applicable state, county, or local requirements.*
  - *Properly dispose of dead animals in a timely manner. Animals shall be disposed of in a manner to prevent contamination of waters of the state or creation of a public health hazard.*

(A) Method of animal mortality handling and structures

Check all that apply:

- ☐ Composting
- ☐ Rendering
- ☐ Burial
- ☐ Other: _____

1. Structure or Area		2. Impoundment/Tank/Drainage Basin ID
	Drains to	
	Drains to	
	Drains to	

(B) Mortality Management Records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

Refer to the mortality management record keeping form (Appendix I).

1. List below the records maintained to document implementation and management of this NMP to ensure proper management of animal mortalities to prevent discharge of pollutants to surface waters of the state.

Record/Documentation	Frequency

VI. Diversion of Clean Water

- *Ensure that clean water is diverted, as appropriate, from the production area (i.e., corrals, pens, manure and process wastewater storage systems, manure stockpiles, composting areas, etc.) (UTG080000 IX.A.3).*
  - *All operations except new swine, poultry, and veal, shall prevent run-on and clean water contact with open lots, process wastewater ponds, manure, litter, compost, and other potential water contamination sources up to, and including, the 25-year, 24-hour storm event. Any clean water that contacts feed, manure, wastewater, litter, runoff, bedding, compost, mortalities, etc. must be properly contained of treated.*
  - *All new (as of December 4, 2008) swine, poultry, and veal shall prevent run-on and clean water contact with feed, manure, litter, runoff, bedding, compost, mortalities, etc. must be properly contained or treated. No discharge of contaminated clean water is allowed.*

(A) Type of clean water diversion

Check all that apply:

Type	**Location(s) Used**
☐ Gutters/Eaves Troughs	_____
☐ Berms	_____
☐ Channels	_____
☐ Natural Topography	_____
☐ Other: _____	_____

(B) Clean water diversion records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

Refer to the list of required records in section XIV and the production area record keeping forms (Appendix C).

1. List below additional records, if any, maintained to document implementation and management of this NMP to ensure that clean water is diverted, as appropriate, from the production area.

Record/Documentation	Frequency

VII. Prevent Direct Animal Contact

- *Prevent direct animal contact of confined animals with waters of the state (UTG080000 IX.A.4).*
  - *Waters of the state are not allowed to flow through animal confinement areas.*
  - *Animals are not allowed access, including for watering purposes, to waters of the state.*
  - *New production area facilities shall not be built in waters of the state.*

(A) Measures for preventing direct contact:

1. Do surface waters of state flow through the production area? ☐ Yes ☐ No
2. Do animals have access to surface waters of the state? ☐ Yes ☐ No
3. If yes to either 1 or 2, list the measures (e.g., fencing) used in the production area to prevent direct contact of animals with-surface waters of the state:

(B) Prevent direct animal contact records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

1. List below the records maintained to document implementation and management of this NMP to prevent direct contact of confined animals with surface waters of the state.

Record/Documentation	Frequency

VIII. Proper Chemical and Product Handling

- *Ensure that chemicals and other contaminants, including waste chemicals or products, handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants (UTG080000 IX.A.5).*
  - *Chemicals, products, and other contaminants such as animal dip chemicals, pesticides, cleaning and disinfection agents, foot bath chemicals, pharmaceuticals, fertilizers, fuel, oil, cooling water, etc. shall be properly handled, contained, or treated.*

(A) Chemical storage and disposal location(s):

1. Description of chemical storage location: _____

   Check all that apply:

   ☐ No chemicals are used at the facility

   ☐ Chemicals are not stored in a room with a floor drain that discharges outside (to the production area)

   ☐ Storage is covered

   ☐ Storage has secondary containment

   ☐ Chemicals are stored in proper containers

   ☐ Other: _____

2. Description of chemical disposal location:_____

   Check one:

   ☐ Chemicals are used and empty containers are disposed of in accordance with manufacturer's guidelines

   ☐ Other: _____

(B) Chemical and Waste Chemical Handling Records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

1. List below the records maintained to document implementation and management of this NMP to ensure chemicals and other contaminants handled on-site are not disposed of in systems not specifically designed to treat them.

Record/Documentation	Frequency

IX. Conservation Practices

- *Identify appropriate site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the state (UTG080000 IX.A.6).*
  - *Solid manure shall be incorporated into the soil as soon as possible after application, unless the application site has perennial vegetation (such as alfalfa) or is no-till cropped, and where the nutrient management plan adequately demonstrates that surface water quality will be protected where manure is not immediately incorporated.*
  - *Process wastewater applied to furrow or flood-irrigated land application sites shall be applied in a manner that prevents any process wastewater runoff into waters of the state.*
  - *When process wastewater is sprinkler or drip applied, the water holding capacity of the soil shall not be exceeded to create runoff.*
  - *Process wastewater and manure shall not be applied to frozen, snow covered, or saturated land application sites unless according to Utah NRCS Practice 590, Nutrient Management; Utah Manure Application Risk Index (UMARI); or other NRCS practices.*
  - *Where applicable of the following, the greatest setback distance of land applied manure and process wastewater applies:*
    - *100 feet (or 35-foot vegetative buffer as appropriate) of surface waters of the state,*
    - *100 feet of domestic water supply wells,*
    - *Setbacks or vegetative buffers established through UMARI or NRCS practices, and*
    - *Setbacks otherwise required by UAC R309-600, as it pertains to drinking water source protection.*

(A) Furrow and flood irrigation

1. List furrow- or flood-irrigated fields, if any:

2. Describe methods to prevent process wastewater runoff into surface waters of the state:

(B) List sprinkler- or drip-irrigated fields, if any:

(C) Application to frozen, snow-covered, or saturated ground:

- List fields that may be used for land application when frozen, snow-covered, or saturated, if necessary (i.e., UMARI indicates "Low" risk): _____
- ****Note: Only these fields are allowed manure or nutrient application when the soil is frozen, snow-covered, or saturated, if necessary, and in accordance with any UMARI-specified best management practices to reduce impact.****

(D) Setbacks implemented for each field:

1. Field Name or Number	2. Down-slope feature (surface water, open gate, culvert, pipe, open tile intake, wellhead, other conduit to surface water)	3. Type of setback			
		100-foot setback	35-foot vegetated buffer	Other	
				Setback (ft.)	Source
		☐	☐		☐ UMARI ☐ NRCS (Code _____) ☐ UAC R309-600
		☐	☐		☐ UMARI ☐ NRCS (Code _____) ☐ UAC R309-600
		☐	☐		☐ UMARI ☐ NRCS (Code _____) ☐ UAC R309-600
		☐	☐		☐ UMARI ☐ NRCS (Code _____) ☐ UAC R309-600
		☐	☐		☐ UMARI ☐ NRCS (Code _____) ☐ UAC R309-600
		☐	☐		☐ UMARI ☐ NRCS (Code _____) ☐ UAC R309-600

(E) The facility implements the following practices to control runoff of pollutants to surface water (check any that apply and list the field(s) or other location(s) where the practice is implemented).

1. Utah NRCS Conservation Practice or Director Approved Practice	2. Land Application Field(s) or other location(s) where practice is implemented
☐ Contour Buffer Strips (NRCS Code 332)	
☐ Contour Farming (NRCS Code 330)	
☐ Constructed Wetland (NRCS Code 656)	
☐ Cover Crop (NRCS Code 340)	
☐ Field Border (NRCS Code 386)	
☐ Filter Strip (NRCS Code 393)	
☐ Heavy Use Area Protection (NRCS Code 561)	
☐ Residue and Tillage Management, No-Till/Strip Till/Direct Seed (NRCS Code 329)	

1. NRCS Conservation Practice or Director Approved Practice	2. Land Application Field(s) or other location(s) where practice is implemented
☐ Residue and Tillage Management, Reduced Till (NRCS Code 345)	
☐ Tailwater Recovery (NRCS Code 447)	
☐ Terrace (NRCS Code 600)	
☐ Waste Separation Facility (NRCS Code 632)	
☐ Vegetated Treatment Area (NRCS Code 635)	
☐ Waste Transfer (NRCS Code 634)	
☐ Waste Treatment (NRCS Code 629)	
☐ Other practice (specify):	
☐ No additional conservation practices are necessary.	Not Applicable

(F) Conservation Practice Records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

1. List below the records maintained to document implementation and management of the conservation practices identified in this NMP to control runoff of pollutants to surface water. Include any specific records or records of operation and maintenance requirements specified in NRCS conservation practice standards identified in IX.E above.

Record/Documentation	Frequency

X. Protocols for Sampling Manure, Litter, Compost, Process Wastewater, and Soil

- *Identify protocols for appropriate testing of manure, litter, process wastewater, and soil (UTG080000 IX.A.7).*
  - *NRCS Practice 590, Nutrient Management, or director approved practice and Utah State University Guidelines for Sampling Manure and soil sampling protocols in the Utah Fertilizer Guide must be followed.*
  - *Representative soil samples shall be collected according to a schedule established in the NMP and according to NRCS practices and USU guidelines. NRCS practices will be used to determine soil sampling frequency. At a minimum, soil must be analyzed once a year for annual crops and once every three years for perennial crops grown for at least three years. The samples must be analyzed for nitrogen and phosphorus content.*
  - *At a minimum, soil samples will be collected on a field-specific basis. Certified planners will determine any special monitoring protocols for a facility that are more stringent than monitoring on a field-specific basis and include those protocols in the NMP.*
  - *Manure samples representative of the nutrient content must be collected on an annual basis. In addition, on an annual basis, wastewater, litter, and compost must be analyzed if land applied. The samples must be tested to determine nitrogen and phosphorus content.*

(A) Manure, litter, compost and wastewater sampling and analysis:

1. Manure, litter, compost, and wastewater samples will be submitted to the following laboratory(ies) for sample analysis:

☐ Utah State University Analytical Laboratories
Skaggs Research Laboratory
1541 North 800 East
Logan, Utah 84341
(435) 797-2217

☐ Stukenholtz Laboratory
2924 Addison Avenue East
Twin Falls, Idaho 83301
(208) 734-3050

☐ Other, specify:
Laboratory Name: _____
Address: _____
Telephone: _____

2. Manure, litter, compost and wastewater sampling and constituent analysis methodology:

The structures identified below in X.A.2.a will be sampled annually, using the sampling protocols identified below in X.A.2.b.

Sampling Medium	a. Structure(s) to Sample	b. Sampling Protocol
Manure		
Process Wastewater		
Litter or Compost		

3. ☐ Manure, litter, compost and wastewater will be analyzed for total nitrogen, total Kjeldahl nitrogen, ammonia, nitrate, and total phosphorus following testing protocols that will be provided to DWQ on request.

(B) Soil sampling and analysis

1. Soil sampling frequency:

a. Identify fields that will be sampled at least annually:

b. Identify fields that will be sampled at least once every three years:

2. Soil samples will be collected using protocols in:

☐ Utah Fertilizer Guide, Chapter 2

☐ Other: _____

3. Soil samples will be submitted to _____ Laboratory for sample analysis.

4. Soil will be analyzed for organic matter, total nitrogen, and total phosphorus following the testing protocols identified below in X.B.4.a.

Required Analysis (ppm)	a. Testing Protocol
Soil Organic Matter	
Total Nitrogen	
Total Phosphorus	

5. Special soil monitoring protocols:

a. Field name or number	b. Protocols more stringent than monitoring on a field-specific basis

(C) Protocols for Sampling Manure, Litter, Compost, Process Wastewater, and Soil Records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

Refer to the list of required records in section XIV; manure and soil testing records and results are to be included in Appendix D.

1. List below additional records, if any, maintained to document implementation and management of protocols identified in this NMP for appropriate sampling and testing of manure, process wastewater, and soil.

Record/Documentation	Frequency

XI. Protocols to Land Apply Manure, Compost, Litter, and Wastewater

- *Establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater (UTG080000 IX.A.8). In addition to the land application protocols listed below, supplementary protocols and practices may be needed at a facility:*
  - *Compliance to Utah NRCS Practice 590, Nutrient Management, or director approved practice.*
  - *In association with Practice 590 or director approved practice, applicable USU guidelines and protocols must be followed.*
  - *No application of manure or process wastewater shall be made to a land application site in an amount that will exceed the capacity of the soil and the agronomic nutrient uptake of the planned crops and yields. Manure and wastewater shall be applied to useful crops. Manure and wastewater shall not be applied to bare ground or other areas where a crop will not be harvested for two years or more following the application.*
  - *Manure and process wastewater shall be applied as uniformly in the field as possible with properly calibrated equipment. Any feed runoff, pen or corral runoff, or other process wastewater applications to fields shall be evenly distributed throughout the field.*
  - *Equipment used for land application of manure, litter, compost, or process wastewater must be inspected annually and calibrated as needed, but at least once a year.*
  - *Land application of mortalities, blood, animal by-products, waste feed, waste milk, or other products or materials is prohibited unless the nutrient applications are accounted for in the NMP and DWQ approves the applications on a case by case basis. Composting of mortalities, blood, and animal by-products requires approval from the Utah Division of Solid and Hazardous Waste (DSHW). Please contact DSHW at (801) 536-0211, for details on animal composting requirements.*

Also see requirements and data associated with NMP Permit Terms in section XII.

(A) Land Application Equipment (spreaders, pumps, water lines, risers, soil injection equipment, big guns, etc.)

1. Land application equipment is calibrated at least annually: ☐ Yes ☐ No
2. Land application equipment is inspected at least annually and prior to the first application of manure and process wastewater of the season? ☐ Yes ☐ No
3. Land application equipment is inspected daily for leaks when wastewater is being applied? ☐ Yes ☐ No

(B) Prohibition and limitations on phosphorus (manure, process wastewater, etc.) land application

Soil Test Phosphorus Results (Olsen, ppm)	***Phosphorus Application Limitations (UMARI)***
Phosphorus, <50	*None, apply according to nitrogen needs of crop*
Phosphorus, 50-100	*None, apply according to phosphorus needs of the crop*
Phosphorus, 101-120	*Limitation, apply up to 50% of crop's phosphorus needs*
Phosphorus, >120	*Prohibited, application of phosphorus is not allowed*

1. Fields with phosphorus land application limitations or prohibition:

a. Field Name or Number	**b. Nutrient Application Restriction or Prohibition**

(C) Land Application and Equipment Calibration Records

- *Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).*

Refer to the list of required records in section XIV and the land application area record keeping forms (Appendix E).

1. List below additional records, if any, maintained to document implementation and management of protocols identified in this NMP to land apply manure or process wastewater in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure or process wastewater.

Record/Documentation	**Frequency**

XII. NMP Permit Terms

The following must be included in the NMP and are NMP permit terms (UTG080000 IX.C). Compliance to these permit NMP terms is required.

(A) Fields for land application. All land application fields are listed below:

1. Field Name or Number	2. Latitude	3. Longitude	4. Spreadable Acres

(XII.A continued) **1. Field Name or Number**	**2. Latitude**	**3. Longitude**	**4, Spreadable Acres**

(B) Land application timing limitations:

Land application to saturated, frozen, or snow-covered ground is not allowed unless according to NRCS Practice 590 and UMARI, or NRCS UMARI equivalent.

1. Field Name or Number	**2. Nutrient Application Timing Limitation**

(C) Description of the land application rates:

1. Maximum amounts of nitrogen and phosphorus from all sources of nutrients, for each crop identified (lbs/acre/field).

☐ NRCS 590 Nutrient Management Specification Sheets attached (Appendix F)
OR
☐ Complete the table below

a. Field Name or Number	b. Year	c. Crop	d. Pounds of nutrient to be added from all sources	
			i. Nitrogen (Total N)	ii. Phosphorus (Total P)

Table continues on next page.

(XII.C.1 continued) **a. Field Name or Number**	**b. Year**	**c. Crop**	**d. Pounds of nutrient to be added from all sources**	
			i. Nitrogen (Total N)	**ii. Phosphorus (Total P)**

2. Results of field-specific assessment of potential nitrogen and phosphorus transport to waters of the state for each field.

☐ Utah Manure Application Risk Index Worksheet(s) or equivalent (Specify: _____) attached (Appendix F)

OR

☐ Complete the table below

a. Field name or number	b. Year	c. Winter Application		d. Spring/Summer/Fall Application	
		i. Risk Level	ii. Practices	i. Risk Level	ii. Practices

Table continues on next page.

(XII.C.2 continued) **a. Field name or number**	**b. Year**	**c. Winter Application**		**d. Spring/Summer/Fall Application**	
		i. Risk Level	**ii. Practices**	**i. Risk Level**	**ii. Practices**

3. Planned crops and nutrient recommendations

- Crops to be planted in each field or other uses, such as fallow fields.
- Realistic yield goal for each planned crop or use identified for each field.
- Nitrogen and phosphorus recommendation for each planned crop or other use for each field.

☐ NRCS 590 Nutrient Management Specification Sheets attached (Appendix F)

OR

☐ Complete the table below

a. Field name or number	b. Year	c. Crop	d. Yield Goal	e. Nutrient Recommendations (lbs/acre)		
				i. Total N	ii. Total P	iii. Source
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____

Table continues on next page.

(XII.C.3 continued) **a. Field name or number**	**b. Year**	**c. Crop**	**d. Yield Goal**	**e. Nutrient Recommendations (lbs/acre)**		
				i. Total N	**ii. Total P**	**iii. Source**
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____

Table continues on next page.

(XII.C.3 continued) **a. Field name or number**	**b. Year**	**c. Crop**	**d. Yield Goal**	**e. Nutrient Recommendations (lbs/acre)**		
				i. Total N	**ii. Total P**	**iii. Source**
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
			_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____

4. Alternative Crops

a. Field Name or Number	b. Alternative Crop	c. Yield Goal	d. Nutrient Recommendations (lbs/acre)		
			i. Total N	ii. Total P	iii. Source
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____
		_____ ☐ T/a OR ☐ Bu/a			☐ USU Fertilizer Guide ☐ Other: _____

5. Methodology and data to be used to account for amounts of manure, litter, compost, and process wastewater to be land applied, including calculations, sources of data, protocols for making determination, etc.

☐ NRCS 590 Nutrient Management Specification Sheets attached (Appendix F)

OR

☐ Identify the software package used to develop rates of application and that addresses the required methodology and data elements described in part IX.C.d.1.vi of General Permit UTG080000 _____

OR

☐ Complete the Narrative Rate Methodology Description form (Appendix G)

XIII. Required Projections

The following must be included in the NMP but are not NMP permit terms (UTG080000 IX.D).

(A) Planned crop rotations for each field for the period of permit coverage:

1. Field Name or Number	2. Year	3. Crop	4. Manure (M), litter (L), or process wastewater (W) to be applied			5. N credits (Lb/a)	6. Multi-year P (# years)	7. Other N or P additions (Lb/a)	8. Form/ Source	9. Application Method
			M ☐ T/a ☐ Yd^3/a	L ☐ T/a ☐ Yd^3/a	W (Gal/a)					

Table continues on next page.

(XIII continued) 1. **Field Name or Number**	2. **Year**	3. **Crop**	4. **Manure (M), litter (L), or process wastewater (W) to be applied**			5. **N credits (Lb/a)**	6. **Multi-year P (# years)**	7. **Other N or P additions (Lb/a)**	8. **Form/ Source**	9. **Application Method**
			M ☐ **T/a** ☐ **Yd³/a**	**L** ☐ **T/a** ☐ **Yd³/a**	**W** **(Gal/a)**					

Table continues on next page.

(XIII continued) 1. **Field Name or Number**	2. **Year**	3. **Crop**	4. **Manure (M), litter (L), or process wastewater (W) to be applied**			5. **N credits (Lb/a)**	6. **Multi-year P (# years)**	7. **Other N or P additions (Lb/a)**	8. **Form/ Source**	9. **Application Method**
			M ☐ **T/a** ☐ **Yd³/a**	**L** ☐ **T/a** ☐ **Yd³/a**	**W** **(Gal/a)**					

XIV. Recordkeeping Requirements

Identify specific records that will be maintained to document the implementation and management of the minimum NMP elements (UTG080000 IX.A.9).

- *Records must be retained and maintained for 5 years (UTG080000 XIII.A.20).*
- *Records must be made available to DWQ upon request (UTG080000 XII.A.1.b).*
- *The date, time, location, and individual who performed sampling, measurement, inspection, etc. must be recorded and included in the records required to be maintained (UTG080000 XII.B).*
- *The records below must be maintained as applicable to the facility (UTG080000 XII.C).*

(A) Does the facility maintain the following records?

1. ☐ Yes ☐ No ☐ N/A. A current copy of the NMP.
2. ☐ Yes ☐ No ☐ N/A. A copy of Notice of Intent and receipt of permit fee.
3. ☐ Yes ☐ No ☐ N/A. Copies of the annual reports (Appendix J).
4. ☐ Yes ☐ No ☐ N/A. Manure transfer records (Appendix H).
5. ☐ Yes ☐ No ☐ N/A. Records needed to document implementation of essential NMP requirements, as identified in sections IV.F, V.B, VI.B, VII.B, VIII.B, IX.F, X.C, XI.C, this section XIV, and Appendices C, D, and E of this NMP.
6. ☐ Yes ☐ No ☐ N/A. Records of mortality management (Appendix I).
7. ☐ Yes ☐ No ☐ N/A. Records of overflows or discharges to surface water with date, time, and estimated volume of any overflow or discharge (Appendix I).
8. ☐ Yes ☐ No ☐ N/A. Land application records (Appendix E).
9. ☐ Yes ☐ No ☐ N/A. Methods and protocols used to sample and analyze soil, manure, litter, compost, or process wastewater (Appendix D recordkeeping forms).
10. ☐ Yes ☐ No ☐ N/A. Results of soil, manure, litter, compost, or process wastewater monitoring (Appendix D recordkeeping forms).
11. ☐ Yes ☐ No ☐ N/A. Expected and actual crop yields (Appendix E log sheet).
12. ☐ Yes ☐ No ☐ N/A. Description of the basis for determining application rates.
13. ☐ Yes ☐ No ☐ N/A. Calculations showing the total nitrogen and phosphorus applied to each field, including sources other than manure, litter, compost, or process wastewater (Appendix E log sheet).
14. ☐ Yes ☐ No ☐ N/A. Methods used to apply nutrients (Appendix E log sheet).
15. ☐ Yes ☐ No ☐ N/A. Dates of manure application equipment inspections and calibrations (Appendix I).
16. ☐ Yes ☐ No ☐ N/A. Records of daily water line inspections (Appendix C).
17. ☐ Yes ☐ No ☐ N/A. Weekly inspections of structures and impoundments (Appendix C).
18. ☐ Yes ☐ No ☐ N/A. Weekly freeboard readings (Appendix C Weekly Inspections form).
19. ☐ Yes ☐ No ☐ N/A. Records documenting corrective actions (Appendix C Daily and Weekly Inspections forms).
20. ☐ Yes ☐ No ☐ N/A. Records documenting the current design of waste storage structures, including volume of solid accumulation, design treatment volume, total design volume, and number of days of storage.

(B) Additional site-specific records, if any, maintained to document implementation and management of the minimum NMP elements are identified in the appropriate sections IV.F, V.B, VI.B, VII.B, VIII.B, IX.F, X.C, XI.C of this NMP.
☐ Yes ☐ No ☐ N/A

XV. Other Permit Requirements

The following are other permit requirements relevant to operation of the CAFO and implementation of the NMP (UTG080000 XI).

- *Transfer of Manure, Litter, Compost, and Process Wastewater to Other Persons.*

  When manure, litter, compost, or process wastewater is sold, traded, or given away, the producer shall:

  - *On an annual basis, maintain records showing the date and amount of manure, litter, compost, or process wastewater that is transferred.*
  - *Record the name and address of the recipient.*
  - *Provide the recipient the nitrogen and phosphorus content of the manure, litter, compost, and process wastewater being transferred.*
  - *Retain the records listed above for 5 years. See CAFO Manure, Wastewater, Litter, and Compost, Transfer Form (Appendix H).*

- *Annual Reporting Requirements.*

  - *An annual report must be submitted to DWQ by April 1st for each year of permit coverage. The report covers the previous calendar year. Please see Annual Report form (Appendix J).*
  - *Annual report content:*
    - *Any instances of overflows or discharges to waters of the state.*
    - *Summary of all discharges from the production area, including the date, time, and volume.*
    - *The number and type of animals confined.*
    - *Estimated amount of total manure, litter, compost, and process wastewater generated at the facility during the previous 12 months (tons or gallons).*
    - *Amount of total manure, litter, compost, and process wastewater transferred to other persons.*
    - *Total number of acres available for land application.*
    - *Total number of acres where manure, litter, compost or process wastewater was land applied during the previous 12 months.*
    - *A summary of all manure, litter, compost and process wastewater discharges from the production area during the previous 12 months, including date, time and approximate volume.*
    - *A statement that the facility has a current and updated version of the NMP and that the NMP being used was approved by a certified planner.*
    - *The following nutrient management planning information must be included:*
      - i) *The crops planted and yields for each field.*
      - ii) *The nutrient content of manure, litter, compost, and process wastewater.*
      - iii) *The data used to determine maximum amounts of manure, litter, compost, or process wastewater to be land applied each year.*
      - iv) *Application rate determination calculations.*
      - v) *The amount of manure, litter, compost, and process wastewater applied to each field during the previous 12 months.*
      - vi) *The results of any soil testing for nitrogen and phosphorus during the previous 12 months.*
      - vii) *The amount of commercial/supplemental fertilizer applied during the previous 12 months to each field.*

- *Proper Closure of Ponds and Other Surface Impoundments.*

  All solid and liquid surface impoundments will be properly closed, consistent with Utah NRCS Practice 360, Closure of Waste Impoundments. For CAFOs that have ceased operation, permit coverage must be maintained until all structures have been properly closed.

- *Emergency Spill and Discharge Response Plan.*

  The facility shall develop an Emergency Spill and Discharge Response Plan. The plan shall include the requirements shown below:

  - *Include procedures for expeditiously stopping, containing, and cleaning up leaks, spills, discharges, or other releases both on and off the facility property.*
  - *Require that persons who may deal with a release be trained in these procedures and have necessary response equipment available.*
  - *Include procedures for immediate notification of emergency response agencies and regulatory agencies. Contacts include:*
    - *If the discharge is a threat to human health or the environment, report immediately to: Utah Department of Environmental Quality hotline, (801) 536-4123.*
    - *All discharges, report within 24 hours to: Utah Division of Water Quality CAFO Program Coordinator. (801) 536-4492 or (801) 536-4300.*

- *Required Discharge and Noncompliance Reporting.*

  - *Operator will notify DWQ of any discharges to waters of the state within 24 hours at (801) 536-4300. Any discharge or other noncompliance that may endanger health or the environment will be reported immediately by calling the DWQ 24-hour Hotline at (801) 536-4123*
  - *Unless waived by the Director, operator will also notify DWQ in writing within 5 days of any discharges to waters of the State. The written submission shall include the following:*
    - *Description and cause of the noncompliance.*
    - *Period of noncompliance, including exact dates and times.*
    - *Estimated time noncompliance is expected to continue if it has not been corrected.*
    - *Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.*
    - *Steps taken to mitigate adverse impacts on the environment or human health during the noncompliance period.*
  - *Reports shall be submitted to the following address:*

    AFO/CAFO Program Coordinator

    195 North 1950 West

    PO Box 144870

    Salt Lake City, Utah 84114-4870

Appendix A: Facility Maps

Appendix B: AWM Data Sheets

Appendix C: Production Area Records

Appendix D: Sampling and Analysis Records

Appendix E: Land Application Records

Appendix F: NRCS 590 Specification Sheets and UMARI Worksheets

Appendix G: Narrative Rate Methodology Description

Appendix H: Manure Transfer Records

Appendix I: Additional Record Keeping Forms

Appendix J: Annual Report

Appendix A – Facility Maps

1. **Production Area Map(s)**
2. **Land Application Area Map(s)**

A.1. Production Area Map(s)

Attach a map or map(s) (or aerial photos or satellite images) of the facility's production area(s), labeled as described in Section III.A of this NMP.

A.2. Land Application Area Map(s)

Attach a map or map(s) (or aerial photos or satellite images) of the facility's land application area(s), labeled as described in Section III.B of this NMP.

Appendix B – Animal Waste Management (AWM) Software Data Sheets

If indicated in section IV.B or IV.C of this NMP, attach the data sheet reports from NRCS AWM software that includes the storage structure design detail requested in those sections of the NMP.

Appendix C – Production Area Records

1. **Daily Water Line Inspection Records**
2. **Weekly Inspection Records**

Appendix D – Sampling and Analysis Records

1. **Manure, Litter, Compost, and Process Wastewater Sampling Records**
2. **Soil Sampling Records**

D.1. Manure, Litter, Compost, and Process Wastewater Sampling Records

D.2. Soil Sampling Records

Appendix E – Land Application Records

Appendix F – NRCS 590 Specification Sheets and UMARI Worksheets

1. **NRCS 590 Specification Sheets**
2. **UMARI Worksheets**

F.1. NRCS 590 Specification Sheet(s)

If indicated in section XII.C.1, XII.C.3 or XII.C.5 of this NMP, attach all NRCS Nutrient Management Conservation Practice Standard (590) Specification Sheet(s) used to develop the land application rates in section XII.

F.2. UMARI Worksheet(s)

If indicated in section XII.C.2 of this NMP, attach Utah Manure Application Risk Index Worksheets completed for each field identified in the NMP. Output from an equivalent risk assessment tool may be substituted if consistent with all applicable requirements of General Permit No. UTG080000.

Appendix G – Narrative Rate Methodology Description

If indicated in section XII.C.5 of this NMP, attach the description of the methodology and data to be used to account for amounts of manure, litter, compost, and process wastewater to be land applied, including calculations, sources of data, protocols for making determination, etc., using the Narrative Rate Methodology Description form.

Appendix H – Manure Transfer Records

Appendix I – Additional Record Keeping Forms

1. **Mortality Management Records**
2. **Overflow and Discharge Records**
3. **Discharge and Noncompliance Reporting**
4. **Equipment Inspection and Calibration Records**

I.1. Mortality Management Records

I.2. Overflow and Discharge Records

I.3. Discharge and Noncompliance Reporting

I.4. Equipment Inspection and Calibration Records

Appendix J – Annual Report