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New Mexico AFO/CAFO Fact Sheet 2 December 2012

Comprehensive Nutrient Management Plan (CNMP) Requirements

Overview

A CNMP is a conservation plan that is unique to animal feeding operations (AFOs). The CNMP addresses handling, storage and land application of manure and wastewater; mortality disposal; soil and water conservation practices; and, as requested by the producer, feed management and uses of manure for other than land application. The CNMP must meet all applicable local, tribal, State and Federal requirements. The producer and/or their consulting firm are responsible for obtaining all government required permits and will develop all documents necessary to secure required permits. The CNMP does not protect an operation from discharge violations; permits are needed to do this.

EQIP CNMP Requirements:

Producers receiving USDA Environmental Quality Incentives Program (EQIP) funding for waste management are required to develop and implement a Comprehensive Nutrient Management Plan (CNMP). Applicants must provide all required state, local and federal permits by end of EQIP application evaluation period to NRCS. The CNMP must be written and approved by a certified conservation planner and certified specialists. It is preferred that the CNMP be completed and signed by the producer prior to signing the EQIP contract and a higher

ranking score will be given to applications for operations with a CNMP already developed. NRCS will need to review and approve the final design, drawings, specifications, and operation and maintenance plan prepared for the signed CNMP, prior to construction. The CNMP, contract practice designs, and cost-share funds are based on, and cannot exceed, what is allowed by existing discharge permit.

CNMP Technical Requirements

1. Livestock production and manure storage area evaluation and practices planned

Evaluation includes:

- Current storage system capacity for present discharge permit
- Feedlot and other storage area runoff or leaching problems
- Current operation and maintenance activities for livestock production system components

Plans include:

- Collection, storage, transfer and/or treatment systems and equipment, such as waste storage facility, pond liner, and solids separator, needed to eliminate identified problems
- Operation and maintenance plan for system components.
- Emergency response or action plan addressing fire,

personal injury and manure storage, collection, treatment and application.

2. Evaluation of land receiving manure and practices planned

Evaluation includes:

- Field leaching and phosphorus runoff potentials
- Evaluation of erosion potentials on fields receiving land applications

Plans include:

- Management practices such as filter strips, irrigation water management, and conservation crop rotation.
- Other soil and water conservation practices needed to reduce soil losses or runoff

3. **Nutrient management** (See following section)

4. **Record of CNMP Implementation** (See checklist)

Nutrient Management Requirements of a CNMP

Follow NRCS Conservation Practice 590 Standard, Specifications and Job sheet

1. Develop realistic yield goals.
2. Sample soils annually for at a minimum:
 - pH
 - electrical conductivity (EC)
 - soil organic matter, (OM)
 - total nitrogen (Kjeldahl Nitrogen test)
 - nitrate nitrogen (N) (KCl method)
 - phosphorus (P)(Olsen P-test if pH>7)
 - potassium (K) (water extraction method)
 - magnesium
 - calcium
 - sodium (SAR)

Soil samples will be collected and prepared according to the NMSU Extension Guidance (Guides A-114 and A-138). http://aces.nmsu.edu/pubs/_a/a-114.html A minimum of 15 sub-samples are needed to be taken from a depth of between 6 and 8 inches and combined into one sample for each field. For corn silage, sample 0-12 inches for all nutrients and 12-24 inches for nitrates. Land with a history of different application rates within the field may be required to have separate soil testing and different application rates. NMED may require additional sampling. Soil test analyses shall be performed by laboratories that are accepted in the North American Proficiency Testing Program or laboratories whose tests are accepted by NMSU (partial list of labs attached).

3. Nutrient values of solid manure shall be determined prior to land application based on book

values or laboratory analysis. NMSU recommends at least 8 sub-samples to make up the composite test sample. Have these analyzed for total N, P and K. Acceptable book values are listed in NRCS Conservation Practice Specification 590.

4. Liquid pond or lagoon water nutrient values must be determined by testing prior to land application. NMSU recommends at least 6 samples taken near the outlet area of the pond. It may be the area adjacent to the pump. This can best be done with one test before applying the water and the second during the application used for permit records. The following year an average of the last two tests (this year's pre-application and last year's during application) is to be used. Have these analyzed for total N, P, and K.
5. Conduct a field-specific assessment of the potential for phosphorus transport from the field and for nitrate leaching, using the NM Phosphorus Index and Leaching Index.
6. Determine appropriate application rate for manure and other nutrient sources using the NMSU Fertilizer Interpretation software. Apply manure uniformly and calibrate manure application equipment at time of application. Determine and record rates applied to fields. Manure shall not be applied on frozen, flooded, or saturated soil. Apply only as much pond effluent as can be held in the planned crop root zone. For example: if the root zone profile can hold 4 in. of water (Total Water Holding Capacity) and the soil moisture is at 75% TWHC, then the maximum amount of 1in effluent may be applied.
7. Setbacks are required for application of manure, litter, and lagoon or pond waste water. No application can be made closer than 100 feet to any down gradient sink holes, well heads, or other conduits to surface or ground water. A vegetated buffer (grass, no shrubs) 35 feet wide or more will allow organic application adjacent to the buffer.
8. Delay field application of animal manure or other organic by-products if precipitation capable of producing runoff and erosion is forecast within 24 hours of the time of the planned application.
9. Keep field specific records of crops, yields and commercial fertilizer and manure applications (including rates, timing, nutrient content and method of application and incorporation).

Partial List of soil testing laboratories that are participating or have participated in American Proficiency Testing Program for Soil and Plant Laboratories. (Labs listing is for information only. No endorsement of any Company or Lab is herein made)

Colorado State University
<http://www.soiltestinglab.colostate.edu/>
Soil, Water & Plant Testing Lab
Campus Delivery 1120 NESB Room
A319 Fort Collins CO 80523-1120
970-491-5061

USUAL

<http://www.usual.usu.edu/forms/soilform.pdf>

After May 1, 2012:

USUAL 9400 Old Main Hill Logan UT
84322
435-797-2217

Ward Laboratories

<http://www.wardlab.com/FeeSchedule/SoilAnalysis.aspx>

4007 Cherry Ave
Kearney, NE 68848-0788
800-887-7645

**Analytical Sciences Laboratory -
University of Idaho**

2222 W. Sixth St.
Moscow, ID 83844-2203 Phone: 208-885-
7900

**Navajo Agricultural Testing and
Research Lab**

P.O. Drawer 1318
Farmington, NM 87499
505-566-2600
<http://www.navajopride.com/Location.html>

Dellavalle Laboratory, Inc.

<http://www.dellavallelab.com/>
1910 W. McKinley Ave.
Suite #110
Fresno, CA 93728
800-228-9896

Western Laboratories

<http://www.westernlaboratories.com/>
211 HWY 95 Parma, ID 83660
1-208-722-6564

Holm Research Center

Servi-Tech Laboratories – Dodge City
Soil, Plant, Water and Environmental Soil
Program Dodge City, KS, 67801-1397
USA

Tel: 620-227-7123
Fax: 620-227-2047
seanj@servitechlabs.com
<http://www.servitechlabs.com>

Steps for Completing the New Mexico Comprehensive Nutrient Management Plan

All CNMPs developed by New Mexico NRCS personnel or TSPs for NRCS will use the Manure Management Planner, (MMP), program with the NM CNMP template, (MSWord smart document).

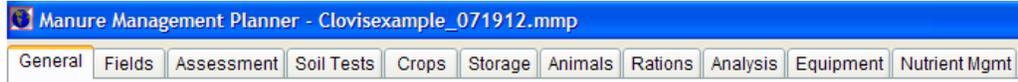
Step 1: Non-NRCS users need to download the MMP program from the Purdue MMP Website. <http://www.purdue.edu/agsoftware/mmp/> . NRCS employees will find MMP already loaded on their

C: drive or will need to contact OCIO-ITS. The MMP Instructions can also be downloaded from the Purdue website.

Step 2: Go to the New Mexico NRCS Animal Feeding Operations webpage. [NM AFO Webpage](#) . Download the New Mexico Comprehensive Nutrient Management Planning Smart Documents ZIP file. Make sure it is placed in C:\Program Files\USDA\MMP 0.30\Custom. See instructions.

<http://www.nm.nrcs.usda.gov/technical/water/cnmp/InstructionsforMMP-SmartDoc.pdf>

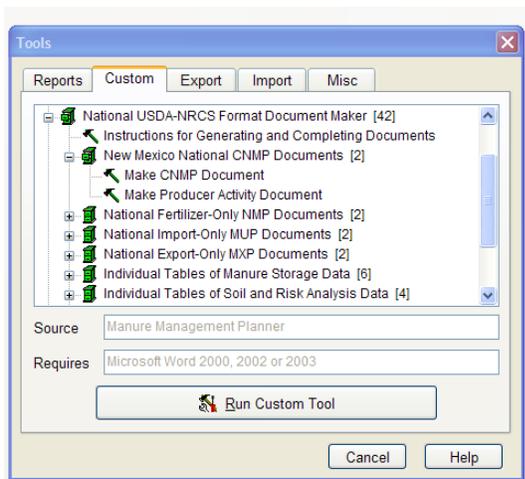
Step 3: Open MMP. Enter data into the MMP program on each of the tabs:



Step 4: Save data as an .mmp file. The default location for this is in C:\Program Files\USDA\MMP 0.30\.



Step 5: Generate the NM CNMP smart document from the Tools tab, (per instructions).

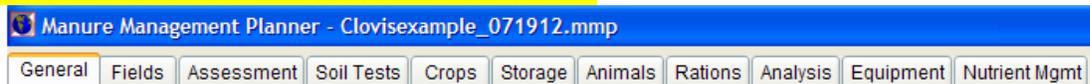


Comprehensive Nutrient Management Plan
(New Mexico Version 1, 8/23/2011)

Once the NM CNMP Smart Document is generated it can be edited. Each time data is updated in the MMP a new NM Smart Document CNMP can be generated.

The checklist below compares information required in an older New Mexico CNMP, (prior to April 2012), to the current NM CNMP smart document that is generated from the MMP.

Tabs where data is entered or not entered into MMP



Page(s) where information will auto-populate or be located in the NM CNMP Smart Document

A. Facility Information

- Name, address, phone number(s) of the AFO "General" page 1
- Name of the owner and operator "General" page 1
- Legal description of AFO "General" "Notes" page 1
- Hydrologic unit code "Fields" page 1
- AU of the facility "Animals" Sec 1.1 and 2.4

- Total acres available for nutrient application owned or leased by the facility "Fields" Sec 6.1
- Date the CNMP was completed "General" page 1
- Name and Signatures of the Client, Certified CNMP Planner, Certified Specialists, Manure and Wastewater Handling and Storage, Land Treatment Practices, Nutrient Management. "Notes" in "General" pages 1,2

B. Safety and Emergency Action Plan

- Phone numbers for fire, ambulance, law enforcement, spill recovery, spill reporting, farm personnel not entered Sec 3.1
- Recovery equipment - what and where not entered Sec 3.1
- Action Plan for fire, personal injury, spills from containment structure, spills during pumping, spills during transport not entered Sec 3.1

C. Objectives and Resource Concerns

- Determine and state future goals and objectives of producer; an increase in herd size or the addition of a solid/liquid separator will change the nutrient balance on the facility. If future goals change the balance of the nutrient budgeting within the next five years, complete the comprehensive nutrient management plan for present and future conditions. not entered Sec.1.1
- State and address resource concerns on facility and land application sites. "Fields" Sec 1.3
- Consider runoff situation on facility; state final destination of drain ditches and canals, even if runoff from irrigation or storm events does not enter these waterways. "Fields" Sec 1.3 and 4.2
- Include 8-digit hydrologic unit code and stream segment the facility is located by; if stream section is water quality limited (TMDL segment), state the water bodies pollutants of concern. "Fields" Sec 1.3 and 4.2
- All environmental sensitive issues and concerns must be addressed in this section (i.e. surface water, bedrock, rock outcrops, wetlands) not entered Sec 1.3

D. Inventory, Analysis and Alternatives

1. Conservation Plan Map
 - Milk barn, holding tank, feed storage not entered Sec 4.1
 - Livestock housing and corrals not entered Sec 4.1
 - Waste structures, lagoon(s), separator(s), solid storage, ditches, buried or surface pipelines, runoff containment, corral slopes, berms not entered Sec 4.1
 - Residences not entered Sec 4.1
 - Property lines, if appropriate; boundary lines of planning unit, field not entered Sec 4.1
 - boundaries, land use and acres for each land unit, appropriate map symbols and legend not entered Sec 4.1
 - Wells and/or well heads not entered Sec 4.1
 - Monitoring wells not entered Sec 4.1
 - Surface waters, surface/subsurface drains (direction of flow) not entered Sec 4.1
 - Title block showing: "Conservation Plan Map", "Prepared with assistance from ___Name___", Name of the conservation district, county and state, map scale, date prepared, North arrow not entered Sec 4.1
 - Include a larger scale map showing a 1-mile radius surrounding facility, including all wells not entered Sec 4.1
2. Soils map "Fields" Sec 4.1
3. NM CNMP Inventory Sheet, or equivalent to include:
 - a. Name and location of facility "General" Sec 1.1
 - b. Production information, including number and species of animals "Animals" Sec 2.4, average weight "Animals" Sec 2.4 number of days in system "Animals" Sec 2.4 phases of production "Animals" Sec 2.4 manure volumes "Animals" Sec 2.3 consistency, location, and timing of the manure produced. The production estimates should include future expansion. "Animals" Sec 2.3
 - c. Roof and / or runoff management not entered in MMP Sec 2.3
 - d. Management of dead animals and veterinary wastes not entered Sec 2.5
 - e. Manure Collection, Storage, Treatment, and Transfer
 - Collection - Identify method of collection, location of the collection points, scheduling of the collection, labor requirements, necessary equipment or structural facilities, and impact that collection has on the consistency of the waste. Report information on maintenance and cleaning of the milking parlor, including cow preparation for dairies. "Storage" and "Animals" Sec 2.2 and 2.3
 - Storage - The storage period should be determined by the utilization schedule; the waste management system should identify the storage period; the required storage volume; the type, estimated size, and location of the storage facility; and the impact of the storage on the consistency of the waste. "Storage" and "Animals" Sec 2.3

- Treatment- include an analysis of the characteristics of the waste before treatment; a determination of the desired characteristics of the waste following treatment; and the selection of the type, estimated size, location. **Storage” and “Animals”** Sec 2.3
 - Transfer – include an analysis of the consistency of the waste to be moved, method of transportation, distance between points, frequency and scheduling, and necessary equipment. **“storage” and Animals”** Sec 2.6, 2.7, 2.8
- f. Manure Utilization – Describe how manure is and will be used, which may include as a source of energy, bedding, animal feed, mulch, organic matter, or plant nutrients.
- (1) Land Application
- A complete analysis of utilization through land application includes designing the distribution system and selecting necessary equipment. **“Crops, “Analysis” , “Equipment” and “Nutrient Management”** Sec 6.1 - 6.11
 - A nutrient management plan is to be developed to determine application rates and volumes; selecting the fields; scheduling applications; and sampling manure, soil, water, and plants. **“Crops, “Analysis” , “Equipment” and “Nutrient Management”** Sec 6.1 - 6.11
 - Individual field maps with marked setbacks, buffers, waterways **“Fields” and “Nutrient Management”** Sec 4.1, 4.2 and 6.2
 - A soil map with appropriate interpretations, such as land capability groupings, woodland suitability groups, pasture and hayland suitability groups, and other interpretive information regarding suitability for specific land uses. **“Fields”** Sec 4.1 and 4.2
 - Site evaluation **“Fields”** Sec 4.1, 4.2 and 5.1-4
 - Crop rotation **“Crops”** Sec 4.1, 4.2 and 5.1-4
 - Crops and yields **“Crops and Nut Mgt”** Sec 4.1, 4.2 and 5.1-4 and 6.1-11
 - Nutrient uptake **“Crops and Nut Mgt”** Sec 4.1, 4.2 and 5.1-4 and 6.1-11
 - Expected seasonal application rate and time **“Crops and Nut Mgt” tabs** Sec 4.1, 4.2 , 5.1-4 and 6.1-11
 - Estimated land area requirement **“Crops and Nut Mgt”** Sec 4.1, 4.2 5.1-4 and 6.1-11
 - Nutrient utilization worksheet **“Crops and Nut Mgt”** Sec 4.1, 4.2, 5.1-4 and 6.1-11
 - Manure valuation summary **“Crops and Nut Mgt”** Sec 4.1, 4.2 and 5.1-4 and Sec 6.1-11
 - Irrigation system – describe how cropland is irrigated, including liquid waste application. Set times, frequency of irrigation, available water holding capacity and crop management allowable depletion should be covered. Describe any changes to the irrigation system that may be necessary to address resource concerns. **“Fields”** Sec 6.12
- (2) Grazing management **“Rations”** Sec 7.1
- (3) Other Utilization of Manure In addition to land application, explore additional ways that manure is being or could be utilized, including methane generation and feed utilization. **“Crops and Nut Mgt”** Sec 4.1, 4.2 and 5.1-4 and Sec 6.1-11
- g. Feeding information
- Describe any measures that are or will be used to alter manure nutrient content through feed management such as phytase feeding, milk urea nitrogen testing. **“Rations”** Sec 7.1
- h. Summary of Recommendations for Alternative Practices

E. Plan Summary of Decisions **not entered in MMP** Sec 1.1

- General
- System Description
- Decision maker’s Responsibilities
- Recorded Decisions and Component Installation Schedule – include the appropriate land unit label, official practice name, brief description of the practice, and schedule of practice application in the proper sequence by calendar year
- Production Function Requirements
- Collection Function Requirements
- Treatment Function Requirements
- Storage Function Requirements
- Transfer Function Requirements
- Utilization Function Requirements
- Contingency Plan
- Public Protection
- Closure Plan
- Decision maker acknowledgement

F. Jobsheets and Specifications not entered Sec 2 and 6

- Available job sheets and specifications applicable to the producer's specific planned practices.
- Worksheets developed with producer, such as resource impact summaries, forage inventories, erosion estimates, and cost estimates.

G. Operation and Maintenance not entered Sec 10

1. Reviews and Plan Modifications

- Dates of Review, including person performing the review and recommendations that resulted from the review
- Suggested modifications
- A revision may be necessary because of a change in objectives, size of the unit, livestock numbers, economics, weather conditions, etc.
- Based on the results of implementation, there also may be a need to look at additional alternatives if the results of plan implementation are not solving the identified problems or meeting the landowner's/operator's objectives.

2. Operation and Maintenance Procedures

- List of maintenance items to be done periodically to maintain system.

H. Recordkeeping not entered Sec 9.1

- If a producer is to safely manage and assess his/her CNMP, it is critical he/she maintain a record of activities and the functionality of the system. A recordkeeping plan should be implemented that addresses key elements of the CNMP to aid in the proper application and provide for assessment documentation.
- Where the CNMP is part of a permitting or other regulatory program, it is the responsibility of the producer to maintain any required documentation, including plans and implementation records, and make them available to the regulatory organization, if required.
 - Current soil test results, in accordance with Nutrient Management Code 590.
 - Application records for each manure or commercial fertilizer application event, including:
 - Containment source or type and form of commercial fertilizer.
 - Field(s) where manure or organic by-products are applied.
 - Amount applied per acre.
 - Date of application.
 - Application method and equipment used.
 - Crops planted and planting and/or harvesting dates, by field
 - Manure, lagoon sampling results
 - Records that address manure and wastewater storage containment structures:
 - Dates of emptying, level before emptying, and level after emptying, and discharge or overflow events, including level before and after event.
 - Transfer of manure off-site or to third parties:
 - Manure nutrient content (N, P, K)
 - Amount of manure transferred.
 - Date of transfer.
 - Recipient of manure (name, address, phone)
 - Available maps, sketches and designs resulting from the planning process that will be useful to the producer in implementing the plan
 - Environmental evaluations
 - Monitoring well results
 - Activities associated with emergency spill response plan.
 - Documentation of soils/geologic investigation.
 - As-built plans available onsite.
 - Records associated with any reviews by NRCS, third-party consultants, or representatives of regulatory agencies:
 - Dates of review.
 - Name of reviewer and purpose of the review.
 - Recommendations or follow-up requirements resulting from the review.
 - Actions taken as a result of the review.
 - Records of maintenance performed associated with operation and maintenance plans.
 - Changes made in CNMP.

I. Permits not entered Sec 9.2

- NPDES CAFO
- Groundwater Discharge

- Inspection records
- Operator/manager certification

AFO/CAFO Permitting in NM.

The CNMP must meet all applicable local, tribal, State and Federal requirements. The producer and/or their consulting firm are responsible for obtaining all government required permits and will develop all documents necessary to secure required permits .

- **US EPA for National Pollution Discharge Elimination System, (NPDES)**
http://cfpub.epa.gov/npdes/afo/afoinfo.cfm?&view=state&state_id=32&state=NM
- **New Mexico Environment Department Water Quality Control Commission**
<http://www.nmenv.state.nm.us/wqcc/regulations.html>
- **Tribal Governments**

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