



AFO/CAFO Manure Wastewater Records to Demonstrate Good Environmental Stewardship

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BSEN 04-C3 June2004

Good environmental stewardship dictates recording actions taken by an animal feeding operation with a liquid waste management system to "MEET OR EXCEED" ADEM AFO/CAFO NPDES RULES, NRCS technical standards and guidelines, and Extension Recommendations dealing with management of animal mortality and liquid manure products generated by the operation. **Accurate and complete records demonstrate good faith in environmental stewardship.**

This publication contains **RECORD FORM R-3, Manure Liquids Pumping/ Transfer Record**, and **RECORD FORM R-4, Manure Liquids Field Application Record**. These can be used to record most of the on-farm actions taken by the AFO/CAFO operator to handle manure wastewater/slurry produced on the farm according to the in-place management plan. Diligent use of these forms will help the AFO/CAFO operator do a better job of meeting "good sense" management objectives of managing slurry/wastewater to protect the environment and meet regulatory requirements. Guidance for the documentation of dead animal disposal and chemical handling practices is also addressed in this publication.

Actions involving manure wastewater/slurry for which records are required are:

1. ANNUAL WASTEWATER / SLURRY NUTRIENT TESTS. Sample and analyze, at least yearly, for: **pH, total N, ammonium N, total**

P, percent solids (and selected metals, e.g. zinc, cooper, arsenic, etc. as directed by your DC, County Agent or Qualified Credentialed Professional (QCP) or an ADEM Director representative). NRCS approved average nutrient/component values can be used to plan the first year; but actual testing should be done frequently enough to ensure "plan" values match actual values of your wastewater/slurry. The Auburn University (AU) Soil Testing Lab routinely tests animal wastewater and slurry.

2. FIELD SPECIFIC SOIL TESTS, PHOSPHORUS INDEX, & CROP FERTILIZER RECOMMENDATIONS. **AU Soil Testing Lab or other labs recognized by the AU Soil Testing Lab must do soil testing at least every three years.** A Phosphorus Index will be calculated for each field. Wastewater / slurry nutrient (nitrogen and phosphorus) application rates should be based on AU Soil Testing Lab fertilizer

recommendations (including soil pH and lime) for the specific field/soil and crop grown where wastewater/slurry is spread, the Alabama PHOSPHORUS INDEX, AND wastewater/slurry nutrient tests (Item 1) above. NRCS 590 Standard has non-soil specific AU nitrogen recommendations as a guide.

3. WASTEWATER / SLURRY PUMPING AND TRANSFER. Whether transported by a Certified Animal Waste Vendor (CAWV), given away or sold, or applied to owner-controlled land, etc., details of all transfers of wastewater or slurry must be recorded. Record Form R-3 can be used for this.

4. WASTEWATER / SLURRY LAND APPLICATION RECORDS. Details of all land application must be recorded. Record Form R-4 can be used for most of these details. Records should also include maps showing SPREADABLE ACRES in each application field after applying ALL APPLICABLE BUFFERS. Note that for wastewater and slurry the wetted area of the particular irrigation system or tank hauler determines available spreadable acres. Application must be based on crop grown, soil test results not more than 3 years old, the Alabama Phosphorus Index, and AU Soil Testing Lab recommendations.

5. Also, 72-hour National Weather Service (NWS) weather forecasts, available on the Internet at <http://www.srh.noaa.gov/bmx/data/forecasts/CurrentForecasts.swf>, must be recorded for any land application of

slurry or wastewater. Slurry or wastewater should not be applied within three days of a NWS forecast indicating a 50% or greater chance of rain (**rain predicted as likely, periods of rain, occasional rain, or 50% or more probability**) UNLESS the "FARMERS MAP" shows the location of the planned land application field in WHITE.

The "FARMERS MAP" is a NWS forecast product that indicates that the predicted amount, intensity, or nature of the expected rainfall should not cause runoff of wastes provided proper application rates and buffers are followed. The map is available on the Internet at http://www.srh.noaa.gov/bmx/data/FARMERS_MAP/farmers_map.html. A copy of the FARMERS MAP should be kept for any land application event that was made while a 50% or more rain forecast was in effect for the land application location.

6. WASTEWATER / SLURRY LAND APPLICATION EQUIPMENT CALIBRATION. Irrigation equipment and tank haulers should be calibrated and the results recorded at least once per year to ensure uniform distribution at planned rates. Application should not exceed 10% of planned rate. Contact your ACES County Agent for information on irrigation system and tank hauler calibration procedures or workshops.

7. DEAD ANIMAL DISPOSAL. Record rendering agent pick-up volumes and dates, composter

loading/unloading and temperature information (Compost Temperature Record Form NRCS AL-ENG-25J may be used), approved incinerator loading rates and operation time, and disposition of ashes. Also record any **emergency disposal of dead animals** as directed by the State Veterinarian, Alabama Department of Agriculture and Industries, or approved WMSP. NRCS or a specifically-trained QCP can assist in PRE-SELECTING A SUITABLE emergency burial SITE.

8. WASTEWATER / SLURRY SPILLS & CORRECTIVE ACTION.

If equipment breakdown, rain, human error, improper management, or **any other reason** causes a liquid waste spill, stop it and clean it up as soon as possible, recording what happened and what you do. Notify ADEM within 24 hours after becoming aware of a discharge to a ditch, creek, stream or other "waters of the state". If the discharge was caused by rainfall, information from the on-site rain gauge or weather station in close proximity to the spill will be invaluable.

9. CHEMICAL SPILL PREVENTION, CONTROL, AND COUNTERMEASURES.

Operators are responsible for taking reasonable precautions to prevent chemical and truck or tractor fuel spills. All decisions and actions taken in this regard should be recorded. Such procedures and records help demonstrate good faith in environmental stewardship. The same basic common sense actions used for

manure spills and corrective actions apply here as well.

10. STORAGE FACILITY AND LAND APPLICATION SITE INSPECTION.

The following inspections and written records are required:

- a) **Annual QCP inspection of all liquid waste management system facilities and structural controls**, and each wastewater application site used the previous year ,
- b) **Weekly inspection/evaluation of all waste management system practices, facilities and structural controls.** These inspections should include: checking the wastewater level in any lagoon or waste storage/sump; checking for any mechanical or erosive structural damage to the liner; inspecting and testing of other equipment and containment structures to uncover conditions that could cause failures, and recording of completed routine preventative maintenance to liquid waste storage and control structures (cleaning separators, catch basins, etc).
- c) **Daily inspection/evaluation of each land application site during land application.**
- d) **Recording of daily rainfall at each application site within 7 days after each application.**

e) **Routine preventative maintenance to waste storage and control structures** as well as inspecting and testing facility equipment and containment structures to uncover conditions that could cause failures which may result in discharge to waters of the State.

f) **"As-needed" initial and follow-up inspections and written report of each**, to assure proper operation and compliance with applicable requirements, or in response to any observed maintenance deficiencies, water line leaks, significant weather events, etc.

All inspections / reviews should be dated and signed by the person(s) performing the inspection/evaluation. Results of review and follow-up actions taken should also be recorded.

The ADEM AFO/CAFO Rules require that operations must meet or exceed NRCS technical standards and guidelines including NRCS CODE 590, NUTRIENT MANAGEMENT STANDARD that requires records to document implementation of the Standard to be kept for a MINIMUM OF FIVE (5) YEARS. Manure tests and Soil tests by authorized laboratories should be filed with Land Application/Transfer records. Any on-site manure tests for nitrogen should be

filed with field specific Land Application Records.

Record Form R-3 is intended to record the removal of wastewater / slurry from the lagoon, holding pond, or other waste storage/treatment structure. **This form is not suitable for recording actual land application activities.**

Record Form R-4 is intended to record land application of wastewater / slurry and/or other nutrients. A separate Record Form R-4 will be needed for each land application field.

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Publication BSEN 04-C3

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Manure Liquids Field Application Record
ONE FORM FOR EACH FIELD PER CROP CYCLE

Field #: _____

Beginning ____/____/____

Farm Operation Name _____ CAFO # _____ Animal Species _____
 Farm Operator _____ Applicator Operator _____ Wastewater _____ Slurry _____

From Nutrient Management Portion of WMSP, CNMP, DATED ____/____/____:

Field SPREADABLE/IRRIGATED Acres¹ (A): _____ (SEE Attached Field Map W/Borders, Buffers, Etc)

Crop: _____ Date Planted: ____/____/____ Soil Test Date: ____/____/____ (SEE ATTACHED REPORT)

Harvest Dates: _____ ; _____ ; _____

Harvest Amounts: _____ ; _____ ; _____

P Index: _____ (SEE ATTACHED P INDEX)

Soil Fertilization Recommendations (B) (lbs./acre/yr.): N: ____ P₂O₅: ____ K₂O: ____

MANURE PLAN APPLICATION RATE (GALLONS or INCHES /ACRE): _____

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Date	72 HOUR WEATHER FORECAST	NUTRIENT SOURCE ²	APPLICATION RATE ³ (IRR acre-inch /ac) OR (TANKER LOADS #1000 gal /ac)	TOTAL VOLUME (ac-ins) OR (1000 gal) (4 x A)	NUTRIENT ANALYSIS ⁴ (lb/ac-in) OR (lb/1000 gal) N - P ₂ O ₅ - K ₂ O	NUTRIENT APPLIED (lb/ac) N - P ₂ O ₅ - K ₂ O (4 x 6)	NUTRIENT BALANCE ⁵ (lb/ac) N - P ₂ O ₅ - K ₂ O (B - 7)

Crop Cycle Totals _____ Inches OR (1000 gal)/Acre; lb./acre (N) _____ (P₂O₅) _____ (K₂O) _____

Owner's Signature _____

Vendor's Signature _____

Certified Animal Waste Vendor (Print) _____ CAWV # _____

¹(based on tank hauler applicator or IRRIGATION SYSTEM footprint), ²wastewater, agitated slurry, fertilizer, etc, ³Calibrate tank hauler / irrigation system at least once/year and record, ⁴Approved book value or SAMPLE ANNUALLY (APPLY APPROPRIATE APPLICATION EFFICIENCIES) ⁵Initial Value received by subtracting column (7) from (B). Continue subtracting column (7) from column (8) following each application event.