



# record keeping

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Record keeping is important for a variety of reasons:

- To ensure that the manure management plan is being followed,
- To enhance our ability to remember past actions,
- To help make management decisions, and
- To ensure regulators that the operation is not violating any state or federal laws.

Good records are easy to keep and will provide the information you need without collecting any extraneous information. For confinement operations with manure management plans. IDNR rules require records to be kept. They must be made available to IDNR for inspection upon demand.

## NITROGEN RECORDS

Most manure management plans are based on nitrogen balance because nitrogen is the main manure nutrient with known environmental concerns. Excessive applications of nitrogen from any source adversely affect groundwater. On the other hand, plants deficient in nitrogen produce lower yields. Using the available technology to control nitrogen application will prevent both extremes.

The plan for new buildings is based on book values for manure nutrients or similar historical records. University studies have shown that the nutrient content of manure varies greatly during the start-up year, depending on weather conditions and how much water is added to the pit.

After the building is used for several years, the nutrient content tends to stabilize, unless there is a problem such as a broken water line. A good representative manure test for nutrient content provides the necessary documentation to adjust the application rate for an individual storage unit.

The law allows application of additional nitrogen if late spring soil nitrate tests are performed or plant tissue testing is conducted. Additional

nitrogen may be applied up to the recommended level indicated by the test results. These test records should be kept in the manure plan to document this decision.

## LAND APPLICATION RECORDS

The law requires that applicators record the date, field location, manure application rate, and acres covered for each land application. The signature of the person recording the information adds credibility to the record.

Weather conditions also are important records; they affect certain spreading results and are hard to remember. For example, wind direction and velocity during spreading can influence where an odor plume will travel. Furthermore, weather conditions change over short periods of time, so the more frequently they are recorded, the more accurate the record will be.

## FIELD SKETCHES

A sketch of the field and pertinent land features can also be a useful part of the record. It can help explain problems such as nitrogen deficiency or compaction and can be used to determine the measures needed to correct them. Your field sketch should include

- A north arrow,
- The shape of the field,
- Residence houses,
- Landscape features such as wells, rivers, lakes, and surface intakes that require surface manure application separation distances,

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- The spread pattern (up and down rows, across, or diagonal), and
- The location of the field gate.

## **SAMPLE RECORDS**

The following (*record keeping pages 3-8*) are examples of records forms that can be used to show compliance with a manure management plan. The data provided is for demonstration only. Note that the field sketch form has been left blank.

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## APPLICATION DATA

CROP YEAR \_\_\_\_\_

DATE	FIELD LOCATION	ACRES SPREAD	RECOMMEND RATE, GALS./ACRE	ACTUAL RATE, GALS./ACRE	TOTAL GAL. APPLIED	APPLICATION METHOD	DATE RECORDED	SIGNATURE
10/21	Field 1, Anderson's 80	76.4	3,164	3,000	229,200	Knifed in	10/22/98	John Doe

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## WEATHER DATA

CROP YEAR \_\_\_\_\_

DATE	TIME	FIELD LOCATION	ESTIMATED TEMPERATURE	RELATIVE % HUMIDITY	WIND SPEED MPH	WIND DIRECTION	CLOUD CONDITION	SOIL CONDITION	SIGNATURE
10/21	10:20	Field 1, Anderson's 80	62	50	8-10	S	Sunny	Dry	John Doe

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## **FIELD SKETCHES**

**FIELD** \_\_\_\_\_ **CROP YEAR** \_\_\_\_\_

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TESTING RESULTS					
CROP YEAR _____					
DATE	% MOISTURE	N lbs./1,000 Gal.	P <sub>2</sub> O <sub>5</sub> lbs./1,000 Gal.	K <sub>2</sub> O lbs./1,000 Gal.	SIGNATURE
10/1	96	50	38	22	John Doe

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## MANURE INVENTORY

YEAR \_\_\_\_\_

PIT NO.	PIT TYPE	PIT LOCATION	MANURE ANALYSIS*			DATE OF APPLICATION	AVAILABLE GALLONS
			N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O		
			lbs./1,000 gals.				
1	Round	S. of buildings	50	38	22	10/20	350,000

COMMON CONVERSIONS		
MULTIPLY	BY	TO GET
Cubic feet	x 7.48 =	Gals.
Parts per million (ppm)	x 0.00834 =	Lbs./1,000 gals.
Percent	x 83.4 =	Lbs./1,000 gals.
P (phosphorus)	x 2.27 =	P <sub>2</sub> O <sub>5</sub>
K (potassium)	x 1.20 =	K <sub>2</sub> O

\*Note: If lab report uses parts per million (ppm), use the conversion table provided to calculate lbs./1,000 gals.

**FIELD APPLICATION INVENTORY**

TOTAL MANURE AVAILABLE \_\_\_\_\_ GALLONS

YEAR \_\_\_\_\_

**MANURE APPLIED**

DATE	FIELD NO.	ACRES	MANURE APPLIED				TOTAL APPLIED gals.
			RATE gals./acre	N lbs./acre	P <sub>2</sub> O <sub>5</sub> lbs./acre	K <sub>2</sub> O lbs./acre	
10/20	1	76.4	3,000	150	114	66	229,000

**COMMON CONVERSIONS**

MULTIPLY	BY	TO GET
Cubic feet	x 7.48	= Gals.
Parts per million (ppm)	x 0.00834	= Lbs./1,000 gals.
Percent	x 83.4	= Lbs./1,000 gals.
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**Note:** If lab report uses parts per million (ppm), use the conversion table provided to calculate lbs./1,000 gals.