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# Nutrient Management plans

North Dakota  
Department of Health

# Overview

- Nutrient Management Plans
- Other ND Regulations
- Manure Utilization
- Manure Handling
- Other issues

# Nutrient Management Plan

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- A document that is continually changing.
- Do not use same soil sample for all fields, not representative of nutrients in the other fields.
  - Treat each field separately
- Know what the document means.

## Other ND Regulations

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- NDCC 23-29 Solid waste management & land protection act
  - Properly handled manure exempt from solid waste rules.
  - NDAC 33-20-01
- NDCC 23-25 Air pollution control act
  - Odor regulations
  - NDAC 33-15-16

# Solid Waste Rules

- Manure is Agricultural Waste.
- Manure recycled as per a Nutrient Management Plan is exempt from solid waste rules.
- Manure that is not recycled is subject to solid waste rules.
- It is the facilities responsibility to ensure the manure is beneficially reused.
- Manure needs to be moved out in a timely matter.
- If solid manure is stockpiled for long periods, will be considered as not being recycled and will need to be handled as specified in the solid waste rules.

# Manure Utilization

- Manure must be applied at rates where crops will utilize nutrients in the manure.
  - Spread at Agronomic rates.
  - Use Phosphorous index.
  - Must not exceed nitrogen needs of crop.
  - Dumping in piles is not using manure at Agronomic rates.
- Manure must not get into waters of the state.

# Manure Utilization

- Main elements to consider
  - Evaluate fields for land application
  - Rotating fields vs intensive cropping
    - Spreading on same field
  - Type of crops grown
    - Crop rotation schedule
    - Change of crop needs to be considered
      - ex. wheat to corn

# Manure Utilization

- Main elements to consider (continued)
  - Realistic yield goal
  - Manure Tests
    - yearly
  - Soil Tests
    - yearly
  - Nutrient budget
    - Understanding the value of manure

# Manure Handling

- Odor control
  - Manure must be applied so that it will not cause excess odors or nuisance concerns.
  - Spreading near neighbors & public places
    - Do these areas first
    - Incorporate immediately
    - Let the neighbor know the day or days manure will be spread
    - Avoid weekends, holidays, & public events
    - Avoid these areas all together
    - Be a good neighbor

# Manure Handling

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- Odor Control (continued)

- Exemptions

- When properly land applying manure as per nutrient management plan.
- Note: exemption only lasts for the period of time when manure is spread.

# Manure Handling

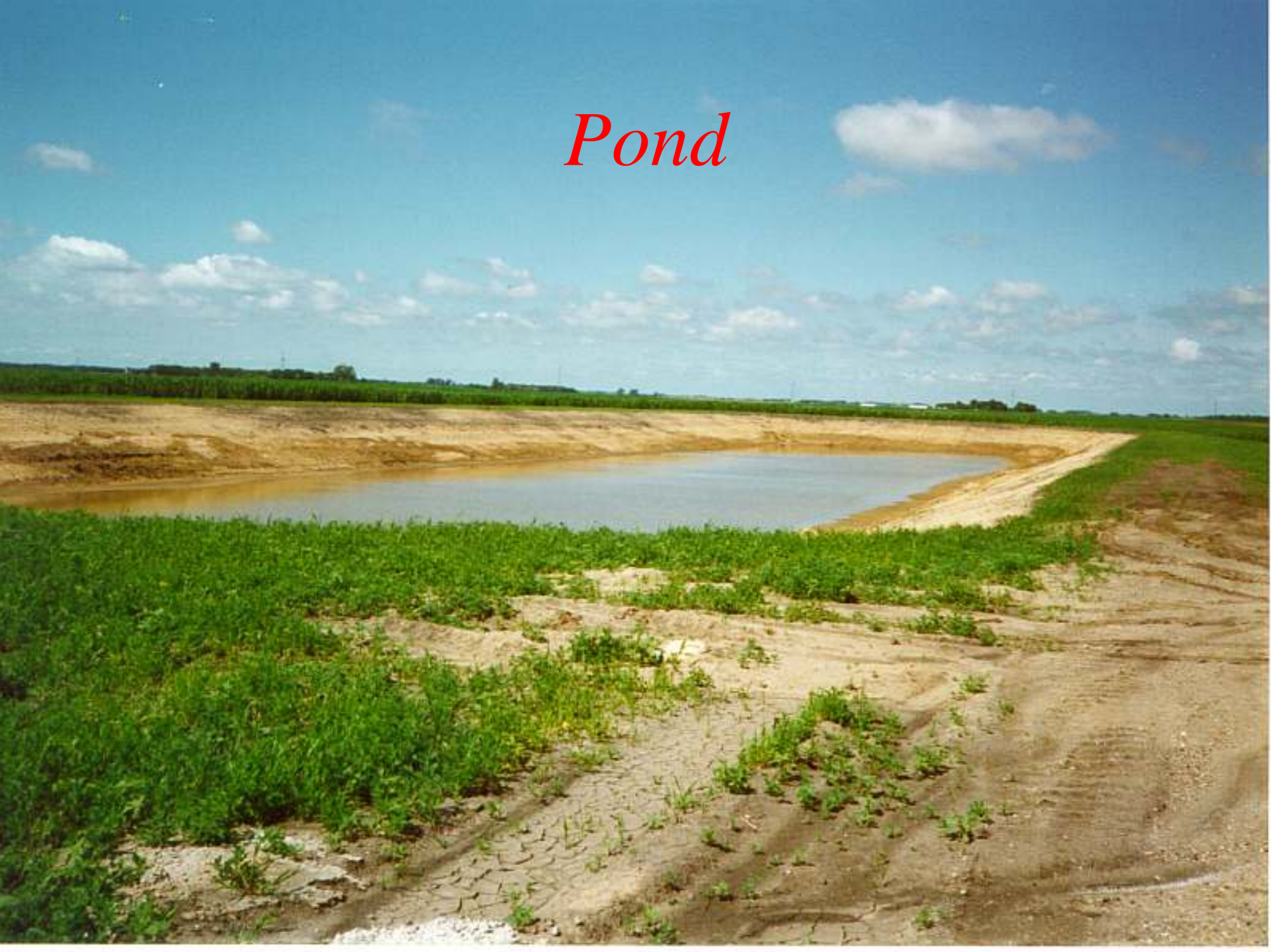
- Other elements to remember

- Runoff ponds

- Only exempt if greater than a 25 year, 24 hour rainfall occurs.

- No exemption for rainfall events under the 25 year, 24 hour rainfall event.
    - or if the pond has mismanaged been managed.

# *Pond*



# Manure Handling

- Runoff ponds (continued)
  - Needed to be emptied periodically as per design specs.
    - Sample for nutrients.
    - Water must be applied at appropriate rates.
    - Liquid must be applied by irrigating or spreading.
  - **Be prepared for any situation.**
    - Suggestion: Having a small hay field available for application.

# Manure Handling

## ■ Stacking Areas

- Getting the manure out of the lots.
  - Temporary
  - Permanent
- Stacking area locations.
  - Away from: drainages and ditches.
  - Not recommend near major highways.

# Soil Sampling

## ■ Recommendations

- Do before manure is applied.
- Avoid manure clumps. (solid)
- Ride around with soil tester.

# *Manure Injection*



# Manure Applicators

- **Get prepared**

- Very few liquid applicators.
- A number of solid applicators.
- Know the equipment being used.
- Not a good excuse to say manure applicator is busy.
- May need to purchase own spreader.
- Very little manure is purchased.
- Manger of the facility must be involved with Nutrient Management Planning.
- The facility is responsible for recycling the manure.
  - If transferred, in the best interest to work with the person taking the manure.