Verifying Conservation Practices for Environmental Services

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Goal for Practice Verification

Ensure the deliverables are as contracted

Conservation Practices vs. Environmental Services

Not a One to One Relationship

Conservation Practice

- The application of specific technology:
  - at an acceptable level
  - achieve a desired purpose.
- May require more than one practice to address an environmental service e.g., water quality.

Environmental Service

- Result of one or more conservation practices applied to achieve a desired result.

Conservation Practices vs. Environmental Services

Conservation Practice Examples

- 328 Conservation Cropping System
- 340 Cover Crop
- 329 Residue Management, No Till
- 590 Nutrient Management
- 412 Grassed Waterway

Environmental Service Example

- **Water Quality Service**
  - **Nutrients**
  - **Pesticides**
  - **Sediment**

Conservation Practices vs. Environmental Services

Conservation Practice Examples

- 328 Conservation Cropping System
- 340 Cover Crop
- 329 Residue Management, No Till

Environmental Service Example

- **Carbon Credits**

Practice Verification

Will Need a Conservation Plan

What do you need to know?

Example Practice: Cover Crop

The planned practices

Need the practice plan that contains the "unique" specifications for the site/field

Producer records

In some cases will need measurements

Cereal Rye seeded @ 75 lbs/ac between Oct 1 and Nov 1.

Terminated with herbicide @ 2-3 foot height between April 15 and May 1.

Practice Types

Structural

Vegetative

Management

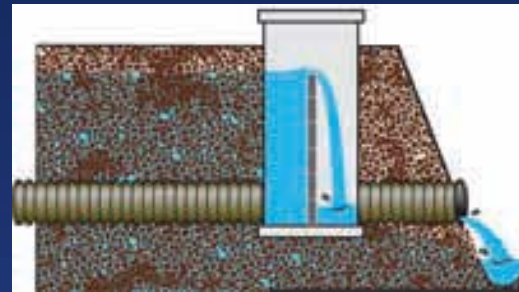- Each type needs a different type of "verification"

Structural Type Practices
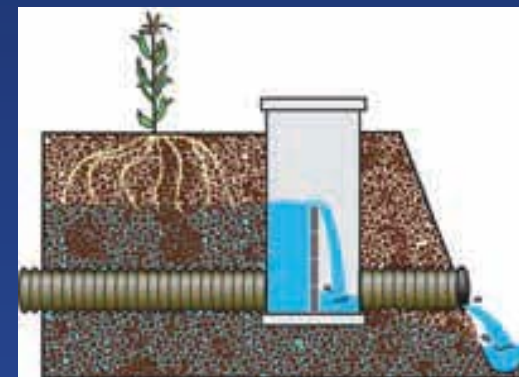
Structural / Durable Practices

Once installed you can see (observe to verify)

There may be some Operation & Maintenance

Some structural practices require a review of the producer records (e.g. Drainage Water Management)

Photos – Purdue University

Vegetative Type Practices

Vegetative Practices

Once established you can see (observe to verify)

There may be some Operation & Maintenance

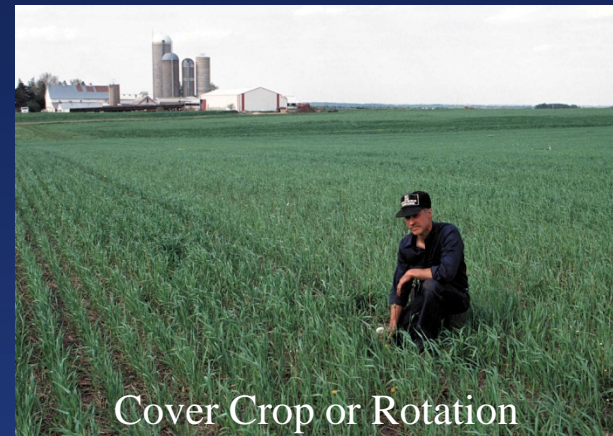May also need to verify producer records (e.g. Filter Strip)

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Management Type Practices

Cover Crop or Rotation
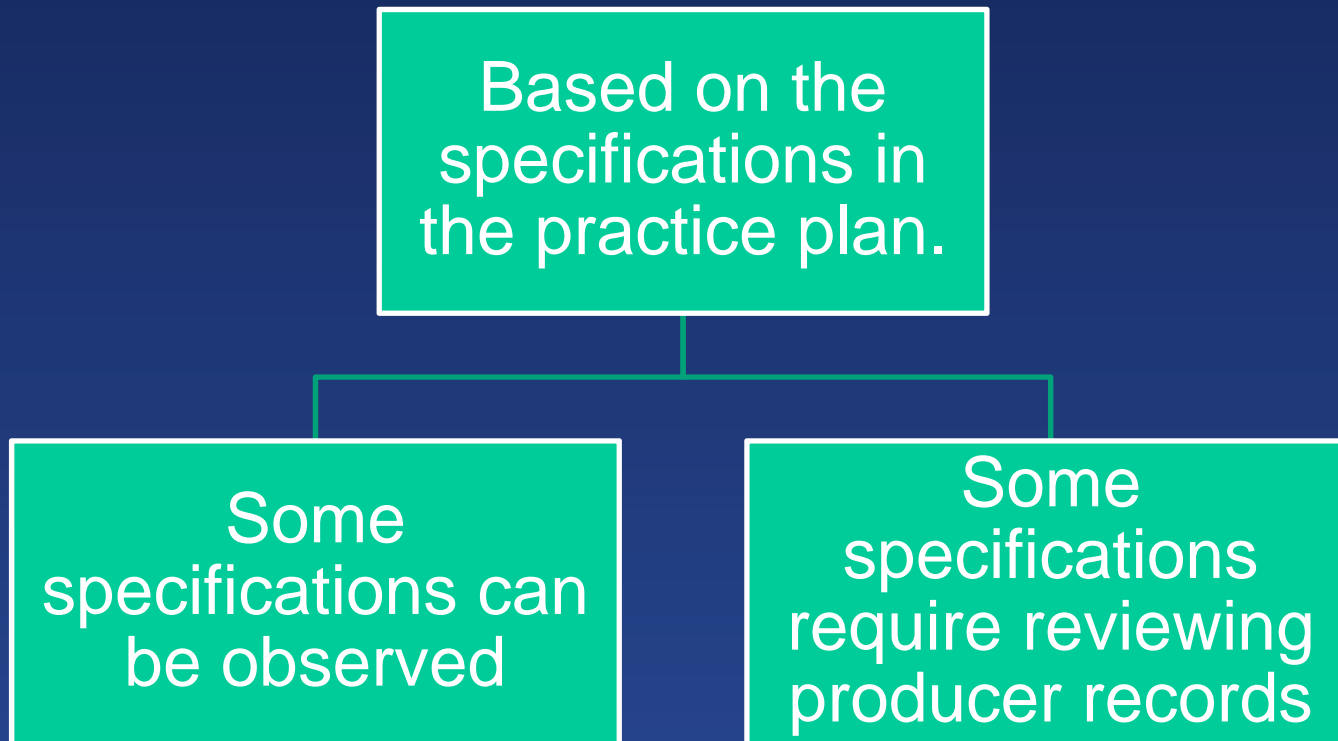

Nutrient Management

Management – annually applied

Verify visually if at the right time of year.

Verify via producer records

Examples: Cover Crops, Rotations, Nutrient Management

Practice Verification

Based on the specifications in the practice plan.

Some specifications can be observed

Some specifications require reviewing producer records

Example – Cover Crop Plan

Field number and acres

Species of plants to be established.

Seeding rates.

Recommended seeding dates.

Establishment procedure.

Planned rates and timing of nutrient application.

Planned dates and method to terminate the cover crop.

Example – Nutrient Management

Fields/location maps

Application restrictions and setbacks

Soil, water, compost, manure, organic by-product, and plant tissue sample analyses applicable to the plan

Realistic yield goals for the crops

Complete nutrient budget for nitrogen, phosphorus, and potassium

Time of application(s) & weather conditions, method(s) of application, nutrient sources, nutrient rates, crop yields

Example – Residue Management, Mulch Till

Field number(s)and acres

Purpose(s) for this practice

Crops(s) where this practice will be used

Type and timing of soil disturbing operations

Estimated surface residue following each operation

How Can We Verify – Large Scale for Environmental Services

Start with a Conservation Plan listing planned practices

The Environmental Service (WQ, Carbon, Air Quality, etc.) Determines Verification Data Needed

Producer Submits Records per Contract

Verifiers field check a "Percentage"

Practice Verification - Summary

Must have a Plan of Required Practices & Treatment

Practices Specifications

Records based on Specifications

Some Field Verification