Existing Waste Storage Pond Evaluation Procedure
and
NRCS/WSDA CTA Agreement

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STAC Presentation 11/22/2011
Presentation Goals

1. Provide an Overview of the DRAFT Existing Waste Storage Pond Evaluation Procedure,
2. Provide an Overview of the NRCS/WSDA CTA Agreement,
3. Provide clarification as requested so that the STAC has a clear understanding of the topics and their interrelationship.
Existing Waste Storage Pond Evaluation Procedure

Background

1. NRCS routinely works with dairy operations that have existing Waste Storage Ponds (WSP’s).
   - Currently no procedures for assessing performance of existing WSP’s,
   - Currently no policy on how to account for existing WSP’s as part of a Waste Management System,
   - Currently no policy for NRCS cost share of practices associated with existing WSP’s.
Existing Waste Storage Pond Evaluation Procedure

Background

2. NRCS experienced a failure of a large existing WSP.

- Engineering investigation raised questions about the siting of WSP’s,
- There is a higher level of public scrutiny than has been experienced in the past,
- Multiple FOIA requests for information on Dairies.
Existing Waste Storage Pond Evaluation Procedure

Background

3. NRCS desires assurance that cost shared practices protect water resources.
   - NRCS will be able to set funding priorities based on a “Risk Assessment”,
   - As deemed necessary, outline an approach for rehabilitating or decommissioning existing WSP’s,
Existing Waste Storage Pond Evaluation Procedure

TECHNICAL NOTES
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
ENGINEERING:DRAFT
SPOKANE, WASHINGTON
September 2011

DRAFT
EXISTING WASTE STORAGE POND (WSP)
REVIEW PROCEDURE

An evaluation procedure for assessing the structural integrity and groundwater contamination risk of an existing earthen waste storage pond structure.
Existing Waste Storage Pond Evaluation Procedure

Objectives

To implement a technically defensible consistent approach for completing a qualitative assessment of existing WSP’s for:

- Structural Soundness.
- Overall WSP risk assessment indicating the probability of surface or ground water degradation.
The procedure does not require:

- Laboratory test data for assessing embankment or compacted earthfill liner soils.
- Laboratory test data of surface or groundwater contamination.
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Requires two assessments:

1. WSP Full
2. WSP Empty
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Inventory Data (Earthen Structure)

1. Is there Embankment or Liner erosion?
2. Pond constructed with a liner?
3. Signs of embankment damage?
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Inventory Data (O&M)

1. Are pumps and appurtenances functioning?
2. Are clean water diversions functioning?
3. Appearance and Safety measures maintained?
4. Odor and air quality issues?
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Inventory Data (Current Condition)

1. Estimated Storage Capacity
2. Physical Measurements
3. Pond depth
4. Liner type
5. Inlet condition
6. Access ramp condition
7. Pump/Agitation site condition
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Assessment Baseline

Comparative assessment to the NRCS practice standard in place at the time construction was completed.
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Assessment Baseline

Highlights of the archived NRCS Practice Standard 313, Waste Storage Facility.

All NRCS Standards have criteria for addressing seepage and constructing above the SHGWT.
Existing Waste Storage Pond Evaluation Procedure

Structure Assessment

Assessment Report

1. Does the WSP meet NRCS standards in place at the time of Construction?
2. Does the WSP have structural integrity?
3. If work is needed then either…
   • Repair
   • Rehabilitate
   • Replace
Existing Waste Storage Pond Evaluation Procedure

Water Resource Risk Assessment

Risk Factors:

1. Depth to ground water for water supply wells,
2. Distance to surface water with 303(d) listing,
3. Located within the GWMA,
4. Add - Nitrate Vulnerability Index?
Existing Waste Storage Pond Evaluation Procedure

Structure Risk Assessment

Risk Factors:
1. Ground Water Resources
2. Structural Integrity
Risk Probability Matrix for Groundwater Degradation

GW Resource - Site Risk

High

High site risk
Low structure risk

High site risk
Medium structure risk

High site risk
High structure risk

Medium

Medium site risk
Low structure risk

Medium site risk
Medium structure risk

Medium site risk
High structure risk

Low

Low site risk
Low structure risk

Low site risk
Medium structure risk

Low site risk
High structure risk

WSP Seepage - Structure Risk
Existing Waste Storage Pond Evaluation Procedure
Structure Risk Assessment

Risk Assessment Recommendations
Existing Waste Storage Pond Evaluation Procedure

Structure Risk Assessment

If:

- Medium site risk
  - Low structure risk

OR

- Low site risk
  - Low structure risk

- Low site risk
  - Medium structure risk

Then: The evaluation finds that the WSP will function for the purposes of waste storage as designed and will protect water quality resources.
Then: There are site concerns and possible structural improvements needed. NRCS recommends repairing and improving the waste storage pond structure.
Then: NRCS recommends rehabilitation or replacement of the existing WSP.
Existing Waste Storage Pond Evaluation Procedure

Structure Risk Assessment

If:

High site risk
High structure risk

Then: NRCS recommends replacement of the existing WSP.
NRCS Puget Sound Initiative

Background

Expected resource based positive outcomes would include:

- Habitat Outcome:

  Improved habitat for target species through use of buffers along streams, removal of fish passage blockages, and improvements to water quality
NRCS Puget Sound Initiative

Background

Expected resource based positive outcomes would include:

• Air Quality Outcome:

  Improved air quality through reduced on-farm diesel emissions ..., improved agricultural waste facilities, utilization of manure application methods which limit volatilization of nitrogen compounds, and application of comprehensive nutrient management plans.
NRCS Puget Sound Initiative

Background

Expected resource based positive outcomes would include:

- **Water Quality Outcome:**
  
  Improved water quality through buffers along streams on livestock operations, forest road sediment control, *removal of structurally unsound waste storage lagoons*, and installation of small waste storage facilities for livestock operations.
NRCS Puget Sound Initiative
Background

Existing WSP issue:

NRCS Goals…

1. Establish a prioritization for funding the “Highest Risk” WSP’s to water resources.

2. Provide a targeted approach toward Farm Bill fund allocations to address this resource concern.
NRCS/WSDA CTA Agreement

Background

NRCS/WSDA Partnership Opportunity:
1. Standardized process for inventorying WSP’s,
2. Leverage activities to avoid the duplication of effort,
3. Peer review of the NRCS Technical Note,
NRCS/WSDA Contribution Agreement:

1. Signed August 31, 2011
2. Expires December 31, 2012
NRCS/WSDA CTA Agreement

Objectives

1. Finalize the NRCS Technical Note “Existing Waste Storage Pond (WSP) Evaluation Procedure”,
2. Assemble comprehensive list of WSP structures in the Puget Sound Basin,
3. Inventory the WSPs in the Puget Sound Basin utilizing NRCS inventory forms,
4. Identify existing WSPs that are no longer in use and are candidates for decommissioning,
NRCS/WSDA CTA Agreement

Objectives

5. Build a GIS database layer with an associated attribute table from this existing WSP inventory,
6. Modify and make available to NRCS the existing database used by WSDA to run statewide aquifer vulnerability model.
NRCS will be developing technical and program policy based on the “Risk Assessment”,

NRCS will be using information for making funding priority decisions,

NRCS will be conducting the risk assessment as outlined in the NRCS Engineering Technical Note,

NRCS will maintain control of the results of all site specific assessments.
Questions?