

WASTE STORAGE FACILITY DESIGN AND CHECK DATA REQUIREMENTS

The following items must be addressed in the design folder for the Waste Storage Facility. The following pages shall be included:

- (1) Table of Contents
- (2) Design Data Summary
- (3) Operation and Maintenance Plan
- (4) Soils and Foundation Data
- (5) Construction Specifications
- (6) Engineering Drawings
- (7) Erosion and Sediment Control Plan
- (8) Construction Check Data

Listed below are specific items that are required in the design:

Table of Contents

This organizes the design folder.

Design Data Summary

Important data is recorded and is consistent with the rest of the CNMP and the Nutrient Management plan. This includes:

- Animal Equivalent Units
- Design storage period
- Manure volume
- Total waste volume
- Storage facility dimensions

Operation and Maintenance Plan

Is it clearly indicated at what times or intervals and at what depths or elevations the facility should be unloaded? For waste storage ponds, explain the use of the full and ½ full markers.

Is maintenance of other components addressed?

What type and size of equipment is being used to load/unload?

How is structure accessed?

Is emergency action plan complete?

If drains outlet within 50 feet of a water body, the plan must include a monthly inspection requirement. The plan must include provisions for intercepting a leak and drawing down the storage volume.

Soils and Foundation Data

Document compliance with Act 187 (1996) before digging?

Written soils description for test pits and site specific comments are included?

Does the investigation go at least 2 feet deeper than the planned bottom?

Reference pit locations to site contour map.

Include soils lab data and clay liner calculations where applicable.

Document need for rock excavation, drainage, isolation from open foundation rock, and depth limitations based on soils investigation.

Construction Specifications

Enclose the applicable specification(s) 313P, 313S and others (e.g. 342, 382, 606, 620, 634).

Include any "additional conditions" or items that are site specific or must be defined to supplement the standard specification. (See instructions for use of Specifications 313P and 313S.)

Add any special or "by-others" specifications.

Engineering Drawings

GENERAL

On each drawing sheet, the title block should show the operator's name, type of operation, county and the persons involved in drawing, designing, and checking the storage facility.

All storage facility designs require approval by a registered Professional Engineer or an Engineer with NRCS job approval authority for the type, dimensions and capacity of the designed facility. If a DEP permit is required, additional details may be needed. If the structure is for a dairy operation, the drawings and specification must be submitted to the local milk sanitarian prior to construction.

Include any standard drawings made by NRCS or designed by others and concurred in by NRCS that are needed, and include them in the drawing index on the cover sheet.

Listed are items that should be included:

PLAN VIEW SHEET(S)

- North arrow
- Utilities/roads
- Bench mark(s)
- Scale
- Legend
- Access
- Existing structures
- X-section locations
- Construction limits
- Foundation drainage & outlet locations
- Component locations
- Borrow area
- Spoil area

SITE CONTOUR SHEET

(Preferably same as Plan View Sheet)

- North arrow
- Bench mark(s)
- Scale
- Soils test pit location
- Existing structures
- Contour lines

- Property lines
- Water well and spring location(s)
- Water courses
- Known sinkhole locations
- Legend

CROSS-SECTION SHEET(S)

- Two sections, minimum
- Scale(s)
- Soil test pit profile(s)
- Loading structure/pipe
- Unloading structure/pipe
- Access ramp
- Pipe profile(s)
- Earth fill zones
- Concrete & reinforcement
- Slopes
- Drainage configuration
- Reference to detail drawings

SEQUENCING STATEMENT WITH:

- E&S control
- Construction sequences
- Spoil and borrow areas
- Required overbuild of fill
- Special considerations
 - Lining
 - Special equipment
 - Special joints
- Vegetative requirements
- Fencing and safety features
- References to specific standards and drawings
- Storage volumes of structure
- Act 187 (1996) statement

Erosion and Sediment Control Plan

See DEP's Erosion and Sediment Pollution Control Program Manual.

Construction Check Data

QUALITY ASSURANCE PLAN

A site-specific plan that addresses but is not limited to:

What specific items need inspection and when?

Who will do the actual inspection?

Is any testing equipment required for the inspection?

ONSITE VISITS

The QAP must include, at a minimum, as applicable to the specific job, onsite visits prior to:

1. Start of construction
2. Completion of foundation excavation to observe and record the foundation conditions encountered and compare with the conditions assumed in the design.
3. Installing foundation drainage.
4. Placement of pond liner material, concrete floor of structure, or roof posts.
5. Starting to close up concrete wall forms.
6. Placing concrete in walls, setting wall panels, or placing roof trusses.
7. Starting tank or wall backfill.
8. Starting to place hopper, reception pit, or scrape ramp.
9. Backfilling transfer pipe.

DOCUMENTATION

A full set of as-built drawings, with construction certification signatures.

Check survey notes.

Material certifications, photographs, etc. as applicable.

Contractors' certifications of conformance.

Operation & Maintenance Plan

A written site specific O&M Plan, including:

Routine operational requirements.

Unloading requirements (half & full markers).

Freeboard requirements.

Emergency Action Plan.

Routine inspections of drain outlets.

Safety precautions.

Special situations, practices, or conditions for the individual operation.