NRCS Update for the 2017 Interagency Nutrient Management Annual Conference

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Intro

• Review highlights of Engineering and Agronomic Standard updates since October 2015.
• Additional changes on the NRCS website
• NAQSAT Usage and resources
• Engineering changes to the new Technical Manual
PA 317 Composting Facility
(3/2017)

• Changed to Single column format
• Cross referenced use of Roof and Roof Runoff
• Runoff must be collected into a Waste Facility 313, sent to a Vegetated Treatment Area 635 or to a constructed wetland 656
PA600- Terrace
(6/2016)

• Allowable channel size and farmable slope was changed.
• Allows the use of Engineering Field Handbook, Part 650, Chapter 7 for design criteria.
• Allowance given for pressure flow.
PA367 – Roofs and Covers (1/2016)

- This standard now allows this practice to be used for agrichemical handling facilities.
- While “heavy use area” has been taken out of the Definition, “animal feeding areas” is in the Conditions Where Practice Applies.
- Venting 2” per 10’ of width is now required when used over animals or manure and enclosed.
- Additional criteria updated if installing on top of a liquid manure storage.
PA318 – Short Term Storage of Animal Waste and Byproducts
(6/2017)

- This **NEW** standard is defined as a “temporary, non-structural measures used to store solid or semi-solid, organic agricultural waste or manure (stackable livestock and poultry manure, bedding, litter, spilled feed, or soil mixed with manure) on a short-term basis between collection and utilization.”

- At least a 30’ vegetative buffer generally needs to be maintained on the downslope for filtering of solids in the runoff.

- Must be located at a different location each year, using the same site only once every four years.

- Cannot be used longer than 180 days (is that really short term?)

- This is the standard to use for field stacking wastes/byproducts.
• This standard now only applies to routine death loss from an operation, not catastrophic.

• Ways to treat the dead include composting, incinerating, gasifying, and refrigerating.

• For composting, the operator should maintain a temperature of at least 130°F.

• Use PA Design Guide PA-4 to size the structure.
• Updated to include more safety issues, especially a minimum fence height of 4.5’
• It also calls us out to discuss more safety issues with the landowner before implementing this standard, such as only filling it at specifically designed locations. Manure should never be lifted over a chain-link fence.
• Updated design elements could include signs, concrete wall extensions, push-ins with guards, and lift-over access areas.
• New version due out by end of 2017
This standard is one of the most specific about the kind of concrete that can be used.

New requirements include:
- 5000 psi concrete
- water-to-cement ratio of 0.4 or less
- supplementary cementitious material (fly ash, silica fume, or ground-blast furnace slag)
- generally heavier steel in the floor
PA635 – Vegetated Treatment Area
(7/2015)

• This standard was updated with minor revisions to be consistent with the new national standard.

• Key items to be reminded of:
  • Inflow to this practice shall be pretreated.
  • If floatable or settleable solids provide a settling facility.
  • Discharge shall be as sheet flow or uniform sprinkler application.
  • Applying wastewater no more than one of any three consecutive days.
  • Consider using more than one area to allow for resting.
The definition of this NEW practice is “a structure that uses a carbon source to reduce the concentration of nitrate nitrogen in subsurface agricultural drainage flow via enhanced denitrification.”

Example installation:

- A mulch bed built at the end of a tile line to treat the nitrate in the subsurface drainage... a water control structure would be used to regulate the water level in the bed, promoting denitrification.
PA309- Agrichemical Handling Facility  
PA Construction Specification  
(7/2016)

• This standard was updated by National Office last year and released in PA in early February 2016. Upon review several inconsistencies were found in the PA Construction Specification.
  • The materials section now matches the Standard.
  • The concrete mix section now matches the Standard.
  • Clarification given on supplementary cementitious materials.
  • The curing section was reworded to allow curing compound as an acceptable method.

• Similar corrections were addressed in the “Instructions for Use” associated with this practice.
PA561- Heavy Use Area Protection
(4/2016)

• The sections labeled “Additional Criteria for Livestock Areas” and “Unpaved Surface Treatment Areas” have been removed. These have been combined and included in PA 528- Prescribed Grazing under a new section “Criteria for Temporary Earthen Livestock Heavy Use Areas”.

• The section “Equine Drylots used for Turnout and Exercise” has been renamed “Additional Criteria for Equine Heavy Use Areas”.
  • A reduction in the required vegetated buffer has been included.

• A new section called “Offsite Runoff Control” has been added.
PA 528- Prescribed Grazing
(4/2016)

• A new section under CRITERIA was added called “Criteria for Temporary Earthen Livestock Heavy Use Areas”.
  • Very similar criteria to what was in the CPS 561.

• Under the considerations section additional wording was added to deal with Sacrifice Areas, Contingency Statements, and developing a prescribed grazing plan with the use of a Pasture Condition Scoring (PCS) guide.

• PA 528 Contingency Worksheet was added to section III of the PA FOTG.
• Added PURPOSE “Reduce excessive sediments in surface waters.”
• Removed the 2,000 pounds per acre of residue to increase plant available moisture. The needed amount of residue now states 60%.
PA345 Residue & Tillage Management, Reduced Till (6/2017)

- Added PURPOSE “to reduce sheet, rill, and wind erosion, and excessive sediment in surface waters.”
- Additional Criteria for added purpose “Use the current approved water prediction technology to document/determine the field operations to achieve the randomly distributed surface residue needed, time of year residue needs to be present in field, and planned operations...”
PA342 Critical Area Planting
(6/2017)

- PURPOSE of stabilizing areas being degraded by the concentration of salts or chemicals was deleted and is covered in other conservation practice standards.
- Critical slope criteria to stabilize banks, shorelines, and other areas was changed from 2:1 slopes to 3:1 slopes.
• Added PURPOSE “reduce excessive sediment to surface waters.”
PA333-Amending Soil Properties with Gypsum Products (6/2016)

- **DEFINITION** Using gypsum- (calcium sulfate dihydrate) derived products to change the physical and/or chemical properties of soil.
- **PURPOSES**
  - Improve soil health by improving physical/chemical properties and increasing infiltration of the soil.
  - Improve surface water quality by reducing dissolved phosphorus concentrations in surface runoff and subsurface drainage.
  - Improve soil health by ameliorating subsoil aluminum toxicity.
  - Improve water quality by reducing the potential for pathogens and other contaminants transport from areas of manure and biosolids application.
- **CONDITIONS**
  Practice applies only to land where soil pH is first adjusted with agricultural limestone to the optimum pH range according to current soil test.
PA 782- Phosphorus Removal System
Interim Practice Standard
(4/2017)

• This practice provides a design procedure and system to remove dissolved phosphorous from surface and sub-surface flow.
• Sorption media with a high affinity for dissolved P is used to capture the dissolved phosphorous.
• Anticipated reduction to exceed 30%.
• High O&M costs.
  • Sorption material to be changed every 1 to 3 years.
Find Engineering drawings and Fact Sheets on PA Website, Topics, Technical Resources, Engineering

New PA-084.1-2 AHF Details and Sump Options

Pennsylvania Engineering Fact Sheets

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Last Updated: February 2017
National Air Quality Site Assessment Tool
NAQSAT

• Interactive web based tool to provide planning assistance to livestock and poultry owners on opportunities to make changes to their operation to reduce emissions.

• Required for NRCS CNMP operations over 300 animal units
National Air Quality Site Assessment Tool

NAQSAT

• Explanation and references found on the PA NRCS Website under Topics, Air, Air Quality or direct link https://www.nrcs.usda.gov/wps/portal/nrcs/detail/pa/air/quality/?cid=nrcs142p2_018073
Engineering Highlights to the new Manual

• Remember under Resources see “Common Best Management Practices”
• Under Resources see “CAFO Manure Storage Winter Capacity Planning Spreadsheet and Guidance
  • Sloped storage calculation can’t be used for vertical tanks
• Rainfall data can be from the tables, however for the 100 year go to NOAA 14
• Remember to use the latest “Animal Weights”.