Earthen Liquid Manure Storage/Lagoon

Do embankments have significant areas without vegetation?
If yes, seed with hardy native grasses that resist soil erosion. Vegetation on and around earthen berms should be kept properly trimmed to minimize problems with burrowing animals.  

Do embankments have trees or woody shrubs growing?
If yes, remove them. The roots can penetrate the earthen berm.  

Do berms have low areas?
Fill in and compact settled areas on the berm. If the depression is more than a few inches, consult a professional engineer or the NRCS.

Is spillway eroded or damaged?
Prevent erosion through proper maintenance. If the spillway becomes damaged, have it restored to its original condition.

Has the liner been damaged by equipment or erosion?
Keep agitator at least 3' away from the liner, or pave the affected area. If damaged, fill and compact the area to restore the liner.

Are level markers firmly and properly mounted?
Liquid level markers should be installed on all earthen storages that are pumped periodically. They allow the manager to...pumping should start.

Are level markers easily visible?
Markers should be easily visible from the top of the berm. Use brightly colored paint or other highly visible mark. Markers should indicate the depth when pumping should start.

Is the liquid level below the freeboard level required in your state?

Are inlet pipes conveying manure from confinement houses submerged?
Keeping pipes submerged minimizes freezing, odors and minimizes problems with wild animals.

Are all inlet and intake pipes adequately supported?
All pipes that extend more than about 6' into a storage berm should be anchored or supported to protect the seal around the pipe as it passes through the earthen berm.

Are recycle or transfer pumps, valves, and controls operating properly?
Are all pipes secured to prohibit animal entry/damage?
Open pipes should be screened or otherwise shielded to keep wild animals from nesting.

Does the lagoon contain floating vegetation or foreign materials (such as medical debris, trash, etc.)?
If yes, remove the floating debris and dispose of properly.

Clean Water Diversions

Is the surface water diversion adequate?
Diverting excess clean water away is key to maintaining the design detention time in the storage. Roof gutters and downspouts should be sized adequately to carry storm flows.

Are diversions and diversion outlets properly vegetated and maintained to minimize erosion?
This does not affect the wastewater storage, but, if improperly maintained, can result in eroded soil reaching waterways.

Are perimeter drains or tiles open and functioning?
Drains that either divert clean water around the storage or lower the groundwater table around a storage must remain open for the storage to function as intended.
Non-Earthen Liquid Manure Storages
Are there visible openings in concrete walls of the manure storage facility? Y N
Such cracks should be plugged on the inside of the storage. Cracks should be monitored to ensure they do not become wider, indicating more serious structural problems.
Are pump ports kept covered and undamaged? Y N
Solid Manure Storage/Composting
Is the manure stored on-site? Y N
In Indiana, for example, if manure is stored on site for more than 72 hours at a permitted operation, it must be covered or otherwise protected.
Do manure storage piles have adequate run-on and run-off controls? Y N
If not, provide diversions or berms.
If located within 300 feet of surface waters, drainage inlets or water wells, is there an impermeable barrier or surface gradient present to divert run-off? Y N
Animal Mortality Handling
Are mortalities handled (to rendering, burying, composting, freezing, etc.) within a reasonable time (24 hours in Indiana)? Y N
Are there run-on and run-off controls from the compost site? Y N
Is the compost applied to land appropriately and at agronomic rates? Y N
Are burial sites adequately covered? Y N
Mortality requirements vary by state; check local regulations.
Land Application Equipment
Is a routine equipment maintenance plan followed? Y N
Are pressure sensors and shut-off switches operational for irrigation system control? Y N
Any noticeable leaks around pipes? Y N
Is the transport vehicle or conveyance free of leaks? Y N
Are watertight valves functioning properly for tank inlet/outlet? Y N
Are measures taken to contain solid manure during transport? Y N

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About this Publication
This publication was funded by USDA Special Needs, Purdue University, and Michigan State University. It was adapted in part from the Livestock and Poultry Environmental Stewardship project, funded by the U.S. EPA, coordinated by the University of Nebraska-Lincoln, and published by the MidWest Plan Service, 122 Davidson Hall, Iowa State University, Ames, Iowa 50011-3080. See “www.fps.gov” or call (800-352-1383) to obtain access to this and other lessons.

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