



AEM Tier 2 Worksheet

Process Wash Water

Glossary

Aerobic Lagoon: A Best Management Practice (BMP) consisting of a shallow impoundment with a large surface area designed for adequate diffusion of oxygen to biologically treat animal and other agricultural wastes.

Biochemical Oxygen Demand (BOD): The decrease in oxygen content of a water sample brought about by the bacterial breakdown of organic matter.

Land Application: The application of process waste water to agricultural land at agronomically acceptable rates and according to USDA Natural Resources Conservation Service (NRCS) Conservation Practice Standard NY-633 for Waste Utilization or NY-590 for Nutrient Management.

Waste Transfer: A method or system to transfer process waste water through a hopper or reception pit, a pump (if applicable), a conduit, or hauling equipment to a manure storage/treatment facility, loading area, and or agricultural land for final utilization.

Vegetative Treatment Area: An area of grass sod, meeting NRCS Standard NY-635, for removing sediment, organic matter, nutrients, and other pollutants from barnyard runoff or waste water. To address process wash water that includes settled solids, the system will include a settling tank and a pipeline leading from the tank to the vegetative filter area with a level cross-section, which allows the effluent to spread evenly over the treatment area.

Background

Process wash water poses a potential for contamination to both groundwater and surface water. Wash water may contain ammonia and nitrate (from agricultural wastes), detergents, cleaning chemicals, phosphorus and microbes. It also may have a high Biochemical Oxygen Demand (BOD), which is harmful to aquatic life. Substantial additions of waste milk (BOD of 100,000 mg/liter) to the wash water will dramatically increase the pollution potential. The characteristics of the process wash water needs to be carefully evaluated to determine the BOD, total solids, volatile solids, N, P, and K along with other chemicals to determine the need for and type of treatment to protect water quality.

If process wash water is not added to manure for proper land application, this worksheet may be valuable in evaluating systems and procedures for treatment. The wash water treatment system must be properly designed and maintained to prevent these contaminants from entering surface water and groundwater resources. To prevent contamination of water:

1. Check the treatment system used for wash water. Make sure it's in good condition and large enough to handle all the wash water produced on the farm.
2. Take measures to reduce the amount of water used in the processing and/or cleanup operation.
3. Remove the first rinse containing the highest concentrated material from the treatment system and limit the amount of organic material dumped into the treatment system. On livestock farms it can be fed or added to a manure storage system. It can also be added to compost piles or land applied.

AEM Principle:

Process wash water should be properly handled and treated to protect surface and groundwater resources that support human health and aquatic habitat.

AEM Tier 2 Worksheet: Process Wash Water		Potential Concern		
Factors Needing Assessment	Lower 1	2	3	Higher 4
What sources of processed wash water are present?				
To what level is the process wash water managed (excluding wash water directed to storage for land application)?	Organic matter is removed from tanks, floor, or process lines before wash down. AND First rinse is collected to limit organic matter entering the system.		Some debris and organic matter is washed down the drain.	Large amounts of organic matter and other solids are washed down the drain.
How many gallons of water are used for process clean up? How was that amount determined? Can the volume and/or concentration be reduced?				
What is the method of storage and treatment, of process wash water?	Properly designed, sized, and maintained: Aerobic lagoon; OR Transfer to waste storage and land application according to a Nutrient Management Plan.	Daily spread according to a Nutrient Management Plan; OR Vegetative treatment area.	Septic system with solid separation or settling, in appropriate soils (not sands or gravels) with no water from the leach field reaching the surface; OR Settling basin with outlet to fully vegetated flow path that does not appear to reach a watercourse.	Dry well or stone pit; OR Dumped on soil surface; OR Disposal in field tile, ditch, or surface water; OR Septic system with water coming to the surface; OR Septic system in a high water table; OR Septic system in very permeable soils (sand or gravel).

AEM Tier 2 Worksheet: Process Wash Water	Potential Concern
Is there a certified design and as-built for the treatment and transfer system on the farm?	
Is water tested/treated for hardness?	
What chemicals are being used and are label recommendations being followed?	
How often is the existing system inspected and maintained?	
Additional Questions for Milking Center Wash Water	
What type and size milking system is present? (dumping station, pipeline, parlor, etc.)	
Is first rinse water collected and fed?	
What is done with waste milk?	
Has milking herd size increased since the system was designed and installed? If yes, by how much?	
<p>Benefits to other resources can also be possible while working toward improved water quality. Taking stock of how existing and future management affect soil, water, air, plants, animals, energy, greenhouse gases, people, and economics can result in more effective plans and additional benefits to farms and communities both now and into the future.</p> <p>Additional Comments:</p>	

AEM ID: _____ Date: _____