Photos of Feedlot Runoff Control Fixes

Southeast Regional Grant for Water Quality

2010-2014

Goodhue County Milk House Wastewater Treatment System

This Milk house wastewater treatment system for Brad Stiller was designed for the temporary storage, eventual discharge and treatment of effluent resulting from the daily cleaning of milking parlor, milking equipment, pipelines and bulk tank. The system consists of a 1600 gallon dual chamber septic tank, an 800 gallon single chamber septic pump tank and one irrigation area. The first tank is designed to settle out solids in the milk house and parlor wash effluent, which with the effluent filter, prevents solids from moving into the 800 gallon septic pump tank and irrigation system. The septic pump tank houses a pump that provides pressurized effluent flow to the irrigation area automatically by means of a float system hooked to the pump. The pump delivers the effluent to the irrigation area through a three inch PVC pipe using pressure distribution. The irrigation area consists of a line of five, five foot tall, two inch PVC pipes, topped with Wobbler type irrigation heads. The irrigation system spreads the milk house and parlor wash effluent over an area where it is infiltrated into the soil, avoiding concentrated flow runoff, and nutrients in the effluent are taken up by vegetation. The size of the irrigation area is determined by the annual nutrient needs of the crop it is being applied to, in this case pasture mix grasses, and average values of nutrients in the effluent and the amount of daily effluent produced in the milking operation.

Outlet (before)

Irrigation Riser and Example of Established Irrigation Area with Sprinklers Running

Goodhue County Milk House Wastewater Treatment System

A milk house wastewater treatment system for Anthony Betcher was designed for the temporary storage, eventual discharge and treatment of effluent resulting from the daily cleaning of milking parlor, milking equipment, pipelines and bulk tank. The system consists of two 1500 gallon septic tanks, a 1000 gallon single chamber septic pump tank and one irrigation area. The first two tanks are designed to settle out solids in the milk house and parlor wash effluent, the effluent filter located at the outlet of the series of settling tanks screens out any remaining solids, preventing solids from moving into the 1000 gallon septic pump tank and irrigation system. The septic pump tank houses a pump that provides pressurized effluent flow to the irrigation area automatically by means of a float system hooked to the pump. The pump delivers the effluent to the irrigation area through a three inch PVC pipe using pressure distribution. The irrigation area consists of a line of seven, five foot tall, two inch PVC pipes, topped with Wobbler type irrigation heads. The irrigation system spreads the milk house and parlor wash effluent over an area where it is infiltrated into the soil, avoiding concentrated flow runoff, and nutrients in the effluent are taken up by vegetation. The size of the irrigation area is determined by the annual nutrient needs of the crop it is being applied to, in this case pasture mix grasses, and average values of nutrients in the effluent and the amount of daily effluent produced in the milking operation.

After

Rice County Bark Bed

The bark bed is similar to a septic mound system but instead of burying the drainfield with earth, it is covered in wood chips, this increases the availability of oxygen to the microorganisms thereby increasing the rate of nutrient breakdown, treating the effluent. The old outlet but it was similar to Stillers - a wet, grassy ditch. The site is not far from Roberds Lake so it was an important fix.

System description:

A milk house wastewater treatment system for Dan Misgen was designed for the temporary storage, eventual discharge and treatment of effluent resulting from the daily cleaning of milking equipment, pipelines and bulk tank. The system, connected to the existing milk house outlet, consists of a 1500 gallon dual chamber septic tank distributed to a pressurized chamber type bark bed drain field. The first compartment of the tank is designed to settle out solids in the milk house effluent the effluent filter located at the outlet screens out any remaining solids preventing solids from moving into the second compartment and bark bed drain field. The second, smaller compartment of the tank, houses a pump that automatically doses the bark bed drain field by means of a float system hooked to the pump switch. The pump delivers the effluent from the tank to the bark bed drain field through a two PVC pipe using pressure distribution. The PVC pipe connects to two, two inch perforated PVC laterals suspended from infiltration chambers along the length of the bark bed. The size of the bark bed is determined by the rate microorganisms in the soil break down nutrients in the effluent, average values of nutrients in the effluent and the amount of daily effluent produced in the milking operation.

Wabasha County
Clean Water Diversion, Fencing, Filter Strip and Seeding

Before