

Environmental Quality Incentives Program

2013 EQIP Signup

Minnesota Supplement for:
Practice Standard 533 – Pumping Plant

Supplemental Criteria

- 1) Consult **General Provision 15 for Ag Waste System payment cap information.**
- 2) Payment is for **permanently placed pumps** and pumping equipment. Payment for Solar Pumps and Windmill require a Prescribed Grazing system or Access Control to be performed by the participant.
 - a) Portable pumps such as solar pumps or windmill are eligible when there is no other feasible alternative for pumping water to livestock.
 - b) Water systems for human use are not eligible.

Scenarios

Electric-Powered Pump \leq 3 Hp

A 1 Hp submersible electric-powered pump is installed in a well or structure; or a close-coupled 1 Hp electric-powered centrifugal pump is mounted on a platform. It is used for watering livestock as part of a prescribed grazing system; or for pressurizing a small irrigation system; or for transferring liquid waste in a waste transfer or treatment system, or for lifting water from a waste storage facility perimeter drain system where a deep sump is not required.

Resource Concerns: Livestock Production Limitation - Inadequate livestock water; Water Quality degradation - Excess nutrients in surface and ground waters; Insufficient water - Inefficient use of irrigation water.

Associated Practices include: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 449 - Irrigation Water Management; 516 - Livestock Pipeline; 313 - Waste Storage Facility; 634 - Waste Transfer; 614 - Watering Facility; 606 - Subsurface Drain, 629 - Waste Treatment, 656 - Constructed Wetland, 635 - Vegetative Treatment Area, 796 - MI interim Milking Center Wastewater Treatment, 620 - Underground Outlet

313 Perimeter Drain with sump

A 1 Hp submersible electric-powered pump is installed in manhole. It is used for transferring groundwater collected from a 313 waste storage facility perimeter drain system to a surface outlet.

Resource Concerns: Water Quality degradation - Excess nutrients in surface and ground waters;

Associated Practices include: 313 - Waste Storage Facility; 634 - Waste Transfer; 606 - Subsurface Drain; 620 Underground Outlet

Small Waste Transfer

A pumping plant to transfer liquid waste that may contain limited solids, including but not limited to milking center waste and silage leachate, to either a treatment system or a waste storage facility. **Resource Concerns** - Water Quality degradation - Excess nutrients in surface and ground waters. **Associated Practices:** 634 - Waste Transfer; 635 - Vegetated Treatment Area; 629 - Waste Treatment; 313 - Waste Storage Facility; 656 Constructed Wetland;

Tractor Power Take Off (PTO) Manure Pump

This scenario involves a **permanently placed** PTO driven pump to transfer semi-solid/ liquid manure (as part of a waste transfer system at the farm headquarters to a Waste Storage Facility - 313. A PTO driven pump is selected because the landowner has equipment available to supply power to the pump.

Resource Concerns: Water Quality degradation - Excess nutrients in surface and ground waters. Associated Practices include: 590 - Nutrient Management; 313 - Waste Storage Facility; 634 - Waste Transfer; 430 - Irrigation Pipeline; 320 - Irrigation Canal or Lateral; 378 – Pond

Pump, Manure, Solid Piston

This scenario involves a solid vertical piston pump to transfer semi-solid/ liquid or sand-laden manure (as part of a waste transfer system at the farm headquarters to a Waste Storage Facility - 313.

Resource Concerns: Water Quality degradation - Excess nutrients in surface and ground waters. Associated Practices include: 590 - Nutrient Management; 313 - Waste Storage Facility; 634 - Waste Transfer;

Pump, Manure, Hollow Piston

This scenario involves a hollow piston pump to transfer solid manure as part of a waste transfer system at the farm headquarters to a Waste Storage Facility - 313.

Resource Concerns: Water Quality degradation - Excess nutrients in surface and ground waters. Associated Practices include: 590 - Nutrient Management; 313 - Waste Storage Facility; 634 - Waste Transfer;

Electric-Powered Pump ≤ 3 HP with Pressure Tank

A 1 Hp submersible electric-powered pump is installed in a well or structure; or a close-coupled 1 Hp electric-powered centrifugal pump is mounted on a platform. It is used for watering livestock as part of a prescribed grazing system; or for pressurizing a small irrigation system.

Resource Concerns: Livestock Production Limitation - Inadequate livestock water; Insufficient water - Inefficient use of irrigation water.

Associated Practices include: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 449 - Irrigation Water Management; 516 - Livestock Pipeline.

Variable Frequency Drive

This is an installation of electrical and electronic components designed to vary the frequency of the voltage to an electric motor and thus the ability to vary the speed of the motor. This directly affects pressure and flowrate. This also could give the operator the flexibility to operate several

systems separately or at the same time.

Resource concerns: Insufficient water - Inefficient use of irrigation water; Inefficient energy use - Equipment and facilities and Farming/ranching practices and field operations.

Associated Practices: 374 - Farmstead Energy Improvement; 430 - Irrigation Pipeline; 441 - Irrigation System, Microirrigation; 449 - Irrigation Water Management; 516 - Livestock Pipeline; and 614 - Watering Facility.

Windmill-Powered Pump

A windmill is installed in order to supply a reliable water source for livestock and/or wildlife. The windmill includes the tower, concrete footings, wheel blade unit, sucker rod, down pipe, gear box, pump, plumbing, and well head protection concrete pad. The typical scenario will be a windmill system with a 10 ft diameter mill and 27-foot tower which is pumping from a 150-foot well. As a result of installing this windmill, resource concerns of inadequate stock water, plant establishment, growth, productivity, health, and vigor, and water quantity can be addressed.

Resource Concerns: Insufficient stockwater.

Photovoltaic-Powered Pump

The typical scenario assumes installation of a submersible solar-powered pump in a well or a live stream. The installation includes the pump, wiring, drop pipe, solar panels, mounts, inverter, and all appurtenances. Note: It is generally not advisable to use a storage battery for a number of reasons. A storage tank is generally the most efficient method to store energy. Grazing - Livestock exclusion from surface water will result in improved surface water quality and reduced erosion. Irrigation - energy consumption will be reduced and the increased pressure and flow rates will improve irrigation efficiency.

Resource Concerns: Insufficient stockwater.

Associated Practices include: 374 - Farmstead Energy Improvement; 382 - Fence; 430 - Irrigation Pipeline; 436 - Irrigation Reservoir; 516 - Livestock Pipeline; 561 - Heavy Use Area Protection; and, 614 - Watering Facility.

Livestock Nose Pump

A Nose Pump is a diaphragm pump located in a pasture for the purpose of providing water to cattle. For a permanent installation, it is typical to also install Heavy Use Area Protection (561) (separate contract item) where the cattle congregate around the pump. It is powered and operated by cattle to transfer water from a stream to a drinking bowl. The objective is to provide water to the cattle outside of a live stream or other natural water source thereby eliminating a significant erosion situation and while also improving water quality. The cattle thus have access to drinking water without having to enter the stream. Generally one nose pump is adequate for 20 cattle.

Resource Concerns: Insufficient stockwater; Inefficient energy use - Equipment and facilities.

Associated Practices include: 374 - Farmstead Energy Improvement; 382 - Fence; 516 - Livestock Pipeline; 561 - Heavy Use Area Protection; and, 614 - Watering Facility.