

Irrigation System (Sprinkler) NRCS Practice Standard 442
Informational Sheet for Fiscal Year 2004
April 23, 2004

Between 1988 and 1994, the number of farm acres irrigated in the U.S. increased +2.9%, yet the amount of water applied dropped -5.4%. The reason? Agriculture invested in more efficient irrigation technologies.

Specific Provisions for Practice Standard 442 – Irrigation System, Sprinkler

- Payments are authorized ONLY for low pressure conversions on existing center pivot systems used at least 2 of the last 5 years.
- For this practice, the cost-share is 50% of the amount of the cost estimate.
- Cost sharing is authorized only when Irrigation Water Management (449) is included in the contract.
- Eligible components are sprinkler packages, pressure regulators, pressure gauges, and drop tubes. An optional

component, which may also be included along with the sprinkler package, is an irrigation pump modification to improve efficiency due to low pressure operation. NRCS will not provide design assistance on this practice. The specific system design will be provided by the irrigation equipment supplier.

- The producer is required to maintain the system.

Payments are authorized for practices meeting the following criteria:

- a. Practice was implemented following standard 442 from the MN-NRCS- FOTG. (current version dated March 2004)
- b. Practice was implemented following the general and specific provisions for practice 442. The specific provisions are given above. Directions to view the general provisions are on page 2.
- c. Positive environmental benefits from the benchmark condition can be documented. For conversion from high pressure to low pressure of a center pivot system, this means a savings in water used since the water is applied more efficiently.
- d. Payments are not authorized for or on existing practices or in-place practices.
- e. Applicants who start a practice before the contract is approved by the NRCS are not eligible for EQIP financial assistance for that practice.

Definition of Terms

MESA – Mid-Elevation Spray Application
LPIC – Low Pressure in Canopy
LESA - Low Elevation Spray Application
LEPA – Low Energy Precision Application

Documentation Requirements

The system contractor will provide the NRCS Field Office with a printout of the nozzling package which reflects the gpm (gallons per minute), operating pressures, nozzle types, nozzle sizes, location of nozzles (height from ground and distance from pivot point), and the number to be installed. The coefficient of uniformity (CU) for MESA systems shall not be less than 85% for nozzle heights 7 feet and higher and 90% for nozzle heights less than 7 feet. CU for LPIC systems shall not be less than 90%. The coefficient of uniformity (CU) for LESA and LEPA systems shall not be less than 94%.

The reduction in the amount of water applied each year by U.S. agriculture adopting more efficient irrigation practices equals the water needed for the personal use of every man, woman and child in the nation's 29 largest cities.

Where do I find the General Provisions for the 2004 Minnesota EQIP Conservation Practice Payment Docket?

The NRCS - Minnesota website offers access to the docket. Begin at www.mn.nrcs.usda.gov. Then select “programs” from the bar at the top, and then select EQIP (Environmental Quality Incentives Program). At that page, choose the 2004 Conservation Practice Payment Document. General provision 11 requires compliance with permit requirements; systems must have a current water use permit from the Minnesota Department of Natural Resources.

Where do I find the Practice Standard 442 for Minnesota?

At website www.nrcs.usda.gov, choose Technical Resources from the bar at the top, and then the electronic Field Office Technical Guide. On the US map on the lower right side, click on the state of Minnesota. When the Minnesota map appears, choose any county. The bar at the left will show Sections I – V of the Field Office Technical Guide (FOTG). The practice standards are in Section IV, part B. Scroll down the alphabetical list to Irrigation System, Sprinkler and click on it to open the .pdf file.

What if the landowner wants to replace a whole system at the time that the conversion is made from high pressure to low pressure?

If a landowner has an existing high pressure system in place, the system would be evaluated to determine the eligible EQIP costs to change it over to a low pressure system. If the NRCS determines that eligible costs total \$10,000, that's the maximum amount for cost sharing purposes. At 50% cost share, the NRCS would pay \$5,000. If the landowner then decides to buy a whole system to REPLACE the existing system (due to aging as well as wanting to switch to the low pressure), the costs would be much more than the eligible amount for the low pressure conversion. The NRCS would cost share the low pressure components on the new system at the rate previously determined (\$5000 from NRCS for the example given).

Will NRCS in MN pay for a booster pump for an end gun as part of a conversion from a high pressure to low pressure system?

No. An end gun does not meet NRCS standards for uniformity or the water conservation purpose of this practice.

Present irrigation techniques include:

SURFACE/GRAVITY - Certain crops require surface/gravity irrigation which accounts for 52% of the irrigated cropland, but 65% of the water usage.²

SPRINKLER - Currently, 44% of irrigated cropland use this method while consuming only 32% of the irrigated water used.²

DRIP/MICRO - This technique, which is used on 4% of irrigated cropland uses 3% of the available irrigated water supply.²

Notes in the boxes are taken from a brochure produced by the Irrigation Association and available on the internet at http://www.irrigation.org/ag_brochure1.htm