

## MESA – MID-ELEVATION SPRAY APPLICATION

**Landowner/Operator** \_\_\_\_\_ **Date** \_\_\_\_\_

**Field Location** \_\_\_\_\_ **County** \_\_\_\_\_

**NRCS Staff** \_\_\_\_\_ **Size of field** \_\_\_\_\_

**Crop(s)** \_\_\_\_\_ **Slope** \_\_\_\_\_

**MN DNR Water Permit Number** \_\_\_\_\_

### Requirements

**The owner and/or operator will follow these steps to ensure proper design and installation of the proposed system, cost-shared by NRCS under the EQIP program.**

1. A water use permit from the Minnesota Department of Natural Resources shall be maintained for the system.
2. The MESA system will be designed to reflect slope, soil texture, and type of crop to be watered to minimize any potential runoff on the landscape. The slope shall not exceed 3% over 50% of the acres for fine textured soils and slope shall not exceed 5% on fields with coarse textured soils.
3. All nozzles on the MESA system shall be operated at no more than 35 psi and each shall be equipped with an appropriate pressure regulator.
4. The nozzle spacing shall not be greater than 25% of the manufacturer’s projected wetted diameter for any spray head and 50% for any impact sprinkler used in the MESA system.
5. The system contractor will provide the NRCS Field Office with a printout of the MESA nozzling package which reflects the total gpm, operating pressures at the pivot point and at each nozzle, nozzle types, nozzle sizes, location of nozzles (distance from the pivot point and height from the ground surface) and number to be installed. The water application coefficient of uniformity (Cu) for MESA systems shall not be less than 85% Cu for nozzle heights 7 feet and greater and 90% for nozzle heights less than 7 feet per MN NRCS Practice Standard 442, Irrigation System, Sprinkler.
6. The flow rate from the pumping plant shall be sufficient to operate the new MESA nozzling package on the system at the design operating pressure and discharge rate.
7. The pumping plant will be maintained and/or modified as needed to operate the new MESA sprinkler package as energy efficiently as possible to meet the MESA design flow rate and operating pressure requirements.

8. The pad or platform on which the pumping plant sits should be evaluated for soundness and any problems that could allow surface runoff and contaminants to backflow into the well shall be corrected.
9. The cost-shared MESA system will be of all new materials free from defects.
10. Pressure gauges shall be installed and maintained in a functional condition to record operating pressure of the system at the pivot point and near the end of the center pivot lateral.
11. Install at least two rain gauges (each at least 21/2 inches in diameter) in the field to monitor rainfall and irrigation application for use in scheduling irrigations.
12. If chemigation is to be used with the center pivot, the system must have a Minnesota Department of Agriculture chemigation permit. The owner must maintain the required safety devices. MDA permit number if applicable: \_\_\_\_\_
13. Before the owner can receive NRCS payment for this EQIP practice, the system must be inspected by NRCS staff from the USDA Service Center and certified for payment. The system must be turned on so the inspector can ascertain whether it operates as designed. (see below)

**Operation and Maintenance:**

1. After installation, a field check of the installation will be performed to compare the installed package to the design printout, flow rate, and operating efficiency coefficient by NRCS personnel. Leaks, or any other replacement needed, if found, will be repaired *prior to certification* of the practice. If the system is found to have problems with the installation and/or nozzling package design, it will be the responsibility of the owner and/or operator to notify the appropriate person or business to assist in correcting the problems.
2. Periodic checks of the sprinkler/spray system, pressure gauges, pressure regulators, pumping plant, and other appurtenances for leaks, wear, and proper function will ensure proper operation and function. Non-functioning components shall be replaced before the next irrigation event. Follow manufacturers' recommendations of maintenance on mechanical components.

These requirements were discussed with the landowner and/or operator.

\_\_\_\_\_  
NRCS Staff Person

\_\_\_\_\_  
Date

I agree to operate and maintain the system in accordance with the information stated in this document.

\_\_\_\_\_  
Landowner/Operator

\_\_\_\_\_  
Date