



CONSERVATION ENHANCEMENT ACTIVITY

E449144Z

**CONSERVATION
STEWARDSHIP
PROGRAM**

Complete pumping plant evaluation for all pumps on a farm

Conservation Practice 449: Irrigation Water Management

**APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture;
Associated Ag Land**

RESOURCE CONCERN ADDRESSED: Inefficient Energy Use

PRACTICE LIFE SPAN: 5 years

Enhancement Description

Rehabilitate/replace/reconfigure all pumps that have the potential to perform 10% more efficiently as identified in the pump test.

Criteria

- Pump test evaluation will include all irrigation pumps on the farm. There could be multiple pumps that are used on single or multiple fields. Minimum data necessary to complete the pumping evaluation:
 - Flow rate, instantaneous and for the season
 - Pressure at different flow rates based on partial or complete irrigations
 - Power usage to compute efficiency of the drive unit.
 - Area and fields irrigated
 - Estimate of friction loss in pipelines based on pressure drop in lines during test
- Irrigation water management plan is followed and includes, at a minimum (as per CSP 449):



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- An irrigation system layout map showing the main pipeline(s), irrigated area, soil moisture sensor locations and depths (if used), and soils.
- Methods used to measure or determine the flow rate or volume of the irrigation applications.
- Documentation of the scientific method used for scheduling the timing and amount of irrigation applications.
- Seasonal or annual planned water application volumes by crop.
- Management allowable depletion (MAD) and depth of the managed crop root zone for each crop.
- An estimate of the irrigation system distribution uniformity, based on testing, evaluation, or observation.
- Information on how to recognize irrigation induced erosion and how to mitigate it.
- The specific soil moisture monitoring objectives, if soil moisture sensors are used. Indicate how data from the soil moisture sensor locations and depths will be considered to make field-wide irrigation decisions.
- Recordkeeping documents for the irrigator to use during operation and management.

Documentation Requirements

- Completed IWM plan, documenting guidance and landowner decisions using State specific protocol.
- Map showing location of fields and where pumps are connected to irrigation system.
- Copy of pump test evaluation.
- Documentation of energy savings based on system and efficiency after implementation of enhancement. Calculated reduction of energy use as the average annual or seasonal energy reduction compared to previous operating conditions.