



CONSERVATION ENHANCEMENT ACTIVITY

E533B

CONSERVATION STEWARDSHIP PROGRAM

Complete pumping plant evaluation for energy savings

Conservation Practice 533: Pump Plant

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

RESOURCE CONCERN: Energy

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Evaluation of all pumping plants to determine the potential to rehabilitate/replace/reconfigure pump performance to improve water delivery efficiency 10% or more. Evaluate to determine if a Variable Frequency Drive motor controller(s) is recommended and the simple payback in terms of energy savings is less than 10 years.

Criteria

- Pump test evaluation will include all irrigation pumps on the on fields where the activity is implemented. 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

E533B - Complete pumping plant evaluation for energy savings	August 2019	Page 1
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CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

Prior to implementation

- Provide NRCS with a map showing the location of all fields and pumps connected to the irrigation system.
- Arrange for pump test evaluations of all irrigation pumps on fields where activity is implemented.

During implementation

- Have a pump test evaluation performed on all irrigation pumps that service the fields where activity is implemented.

After implementation

- Make the following items available for review by NRCS to verify implementation of the enhancement:
 - Pump test evaluation report
 - Provide a list of any adjustments to improve system efficiency made as a result of the evaluation. Calculate the reduction of energy use based on before and after conditions. Energy savings can be reported as the average annual or seasonal energy reduction compared to previous operating conditions.

NRCS will:

Prior to implementation

- Review Pumping Plant (Code533) with Participant as it relates to implementing this enhancement
- As needed, provide additional technical assistance to the participant as requested.



CONSERVATION STEWARDSHIP PROGRAM

After implementation

- Verify pump test evaluation, by reviewing evaluation report.
- Verify energy savings based on system efficiency before and after implementation of the enhancement.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date