



**CONSERVATION ENHANCEMENT ACTIVITY**

**E449G**

**CONSERVATION STEWARDSHIP PROGRAM**

**Intermediate IWM— Years 2-5, soil or water level monitoring**

**Conservation Practice 449: Irrigation Water Management**

**APPLICABLE LAND USE: Crop (Annual & Mixed)**

**RESOURCE CONCERN: Water**

**ENHANCEMENT LIFE SPAN: 1 year**

**Enhancement Description**

Field currently flooded through a cascade levee system will be converted to furrow irrigation. It is required that field is leveed on the lower end and approximately 25% up the sides for furrow irrigation prior to implementing the enhancement. After the previous year’s crop is harvested, elevated planting beds and furrows will be reshaped as needed to guarantee proper irrigation of the rice crop. Layflat tubing will be utilized with the correct holes or gates installed to advance water down the furrows at the appropriate rate across the length of the field as prescribed by an NRCS “PHAUCET” design, Delta Plastic® Pipe Planner® or similar.

**Criteria**

- Equipment may include: soil moisture sensor(s) with data collection systems; weather stations that collect solar radiation, wind speed and direction, rainfall, temperature; water level sensor with data collection system
- Data to be monitored includes: irrigation water applied, crop water use, status of heat and/or frost conditions to permit the producer to make informed irrigation decisions.
- Irrigation water management plan from year one is followed in accordance to the NRCS Conservation Standard Practice Irrigation Water Management (Code 449):

E449G - Intermediate IWM— Years 2-5, soil or Water level monitoring	August 2019	Page   1
---	-------------	----------



# CONSERVATION STEWARDSHIP PROGRAM

- An irrigation system layout map showing the main pipeline(s), irrigated area, soil moisture sensor/water level sensor locations (if used) and soils.
- Method used to measure or determine the flow rate or volume of the irrigation water applications.
- Measurement records showing the amount of water used to irrigate as it comes on to the farm and goes into each field.
- Documentation of the scientific method used to schedule the timing and amount of irrigation application.
- Irrigation water management plan explaining:
  - How irrigation meets crop needs while maximizing irrigation water efficiency.
  - Seasonal or annual planned water application volumes by crop.
  - Management allowable depletion (MAD) and depth of the managed crop root zone or water level for each crop and stage of growth.
  - Evaluation of irrigation system distribution uniformity and necessary changes to ensure uniform irrigation.
  - Information on how to recognize irrigation induced erosion and how to mitigate it.
  - Indicate how data from the sensor location and depths will be considered to make field-wide irrigation decisions.
  - Water application scheduling based on soil moisture or water level monitoring and/or evapotranspiration monitoring from the weather station.
- Recordkeeping documents for the irrigator to use during the operation and management.

### ***Additional Criteria of soil moisture devices***

- Each year re-install the soil moisture set to collect data at a minimum of 2 approved depths based on crop and soil characteristics of the region.
- Number of soil moisture sets will be installed based on the irrigation water management plan designed per water source using the following criteria: field topography, crop rotation and the soils throughout the field.



## CONSERVATION STEWARDSHIP PROGRAM

### *Additional Criteria of water level devices*

- Re-install sensor/gage each year in a basin field with a data logger with the ability to capture an image of the movement of the gauge. Images are captured at a minimum of twice a day.





# CONSERVATION STEWARDSHIP PROGRAM

## Documentation and Implementation Requirements

### **Participant will:**

#### *Prior to implementation*

- Review the irrigation water management plan to make any necessary adjustments from the previous year.
- Ensure the irrigation water management plan continues to meet the NRCS Conservation Practice Irrigation Water Management (Code 449) requirements.

#### *During installation or implementation*

- Ensure each irrigation water management device is re-installed to manufacturer recommendations
- Record irrigation data such as location, date, duration, and flow rate of all irrigation operations, rainfall, evapotranspiration, and soil moisture or water level data
- Monitor the devices during the growing season to determine timing and amounts of water to apply based on soil moisture/water level sensor, field checks and weather data

#### *After implementation*

- Make the following items available for review by NRCS to verify implementation of the enhancement:
  - Irrigation water management plan is followed, and records kept
  - Changes made to address distribution uniformity deficiencies
  - Utilization documentation of any sensor used throughout the growing season as well as certification of their proper installation

### **NRCS will:**

#### *Prior to implementation*

- Provide and explain NRCS Conservation Practice Standard Irrigation Water Management (Code 449) as it relates to implementing this enhancement.

E449G - Intermediate IWM— Years 2-5, soil or Water level monitoring	August 2019	Page   4
---	-------------	----------



# CONSERVATION STEWARDSHIP PROGRAM

- Provide additional assistance to the participant as requested After Implementation
- Verify re-installation of all irrigation water management equipment each year
- Verify implementation of the irrigation water management plan by:
  - Reviewing records kept during each year of enhancement implementation

### 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