

**Practice: 443 - Irrigation System, Surface and Subsurface**

**Scenario # 1 Surge Valve & Controller**

**Missouri**

**Scenario Description:**

This scenario is for the installation and utilization of a surge valve with automated controller (including all appurtenances) and installation labor needed to convert from a conventional surface irrigated system to a surge irrigation system. The surging action increases rate of advance along set length, reduces deep percolation at upper end of field, increases uniformity of application along row length, and on lower intake soils can significantly reduce runoff losses. The result is improved irrigation efficiency, reduced leaching and erosion losses, and conserved energy.

Resource Concerns: Insufficient Water - Inefficient use of irrigation water, and Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation- Excess nutrients in surface and ground waters, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities

Associated Practices: 464-Irrigation Land leveling, 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 328-Conservation Crop Rotation, and 590 Nutrient Management.

**Before Practice Situation:**

Unacceptable irrigation application uniformity along existing surface irrigation system furrow or border length caused by excessive run length or soil infiltration rate when operated with continuous inflow on existing system. System is over irrigated in attempt to adequately irrigate low end of field. ☒

**After Practice Situation:**

A surge surface irrigation system is in place. After implementation, distribution uniformity and irrigation efficiency is improved, by reducing irrigation application volume and deep percolation losses. Runoff reductions, reduced energy use, and air quality improvements can also result.

**Scenario Feature Measure:**

Number of Surge Valves

<b>Scenario Typical Size:</b>	1	Each	Tot Unit Cost	\$1,715.62
-------------------------------	---	------	---------------	------------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Surge Valve And Controller	1	Each	\$1,672.50	\$1,672.50
Labor	General Labor	2	Hour	\$21.56	\$43.12
				Total Cost:	\$1,715.62

**Payment types:**

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$1,115.15	EQIP-HU	\$1,544.06
EQIP-NOI	\$1,286.72	EQIP-HUNOI	\$1,544.06

**Practice: 443 - Irrigation System, Surface and Subsurface**

**Scenario # 2 Multiple Inlet Irrigation**

**Missouri**

**Scenario Description:**

Practice involves running above ground pipe to deliver water to individual basins to reduce runoff and improve irrigation efficiency in rice fields that are split into paddies. Payment includes 15" 10mil pipe and plastic flap gates. Resource Concerns: Insufficient Water - Inefficient use of irrigation water, and Degraded Plant Condition - Undesirable plant productivity and health, Water Quality Degradation- Excess nutrients in surface and ground waters, Water Quality Degradation - Excessive sediment in surface waters, and Inefficient Energy Use - Equipment and facilities

Associated Practices: 464-Irrigation Land leveling, 533-Pumping Plant, 449- Irrigation Water Management, 430 - Irrigation Pipeline, 328-Conservation Crop Rotation, and 590-Nutrient Management.

**Before Practice Situation:**

Typical before situation would include a contour levee or basin surface irrigation system. Irrigation water is delivered to individual basins in a 40-acre rice field split into paddies using irrigation canals and field ditches.

**After Practice Situation:**

After implementation irrigation efficiency is improved, while reducing irrigation application volume, runoff, evaporation losses, and cold water damage to crops. Reduced energy use and air quality improvements can also result.

**Scenario Feature Measure:**

Acres Irrigated

<b>Scenario Typical Size:</b>	40	Acre	Tot Unit Cost	\$17.89
-------------------------------	----	------	---------------	---------

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PE, collapsible, weight priced	250	Pound	\$1.30	\$325.00
Materials	Flap gate, plastic, 2½"	100	Each	\$1.75	\$175.00
Labor	General Labor	10	Hour	\$21.56	\$215.60

Total Cost: \$715.60

**Payment types:**

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$11.63	EQIP-HU	\$16.10
EQIP-NOI	\$13.42	EQIP-HUNOI	\$16.10