

## **Water Quality Enhancement Activity – WQL27 – Drainage water management for nutrient, pathogen, or pesticide reduction**



### **Enhancement Description**

This enhancement consists of managing soil and/or surface water levels during the non-cropping season in order to reduce the loss of nutrients, pathogens, or/and pesticides from a crop field through drainage systems and into downstream receiving waters. This enhancement may also be utilized to reduce the oxidation of organic matter in the soil and/or reduce wind erosion or particulate matter (dust) emissions.

### **Land Use Applicability**

Cropland

### **Benefits**

This enhancement holds nutrients in the soil, reduces pathogens leaving the field, and/or reduces pesticides leaving the field when crops are not actively growing. Additional benefits may include reduction of the oxidation of organic matter and/or reduced wind erosion or particulate matter (dust) emissions.

### **Conditions Where Enhancement Applies**

This enhancement applies to cropland that has been artificially drained (surface or subsurface) and which is flat enough that significant portions can be flooded or saturated by controlling outflow from the drainage system.

### **Criteria**

1. Implementation of this enhancement requires compliance with the requirements of the Conservation Practice Standard, Drainage Water Management (554) and the associated plan;
2. Operate water control structures/devices to hold water surface elevations no more than 6 inches **below** the ground surface on the affected area for a minimum of 90 days per year;
3. This enhancement only applies to the areas of cropland where water levels can be effectively maintained at the desired elevations.

### **Adoption Requirements**

This enhancement is considered adopted when a drainage water management plan that meets NRCS Conservation Practice Standard, Drainage Water Management, Code 554 has been implemented (check with your local NRCS Field Office for a copy of the practice standard) and fields are flooded such that ponding or saturated conditions meet the target hydrologic conditions in the above criteria.



United States Department of Agriculture  
Natural Resources Conservation Service

2016 – 1  
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### **Documentation Requirements**

1. List of fields where this enhancement was utilized, the field size, and the equipment installed/used,
2. Dates when fields were flooded and water removed from fields, and
3. Photo documentation of saturated soil areas. Photos must be dated and labeled with field number.

### **References**

Drury, C.F., C.S. Tan, J.D. Gaynor, T.O. Oloya and T.W. Welacky. 1996. Influence of controlled Drainage-Subirrigation on Surface and Tile Drainage Nitrate Loss. Journal Environmental Quality. Vol 25. pp 317-324. <https://www.soils.org/publications/jeq/abstracts/25/2/JEQ0250020317>.

Fouss, J.L. and M. Sullivan. 2009. Agricultural Drainage Management Systems Task Force (ADMSTF). <http://hostedweb.cfaes.ohio-state.edu/usdasdru/ADMS/411-ASCE%20EWRI%20Congress%202009%20-%20JLF%20&%20MCS.pdf>



**Utah Supplement for SOL27**

Note: Include documents assuring water rights to impound water. Some watersheds in Utah do not allow water to be impounded.

Enhancement Name	Enhancement Code	Associated SGI Practices (code)	Conservation Measures <sup>+</sup>
Establish Pollinator and/or Beneficial Insect Habitat	PLT15	315, 327, 342, 380, 390, 512, 550, 645	1, 2, 3, 4, 9, 10

**Operations & Maintenance, Conservation Measures, and Client Acknowledgement**

Operation and Maintenance	
Operation:   Maintenance:	
Conservation Measures	
Actions that must be implemented by the landowner/manager during enhancement implementation:	
Client's Acknowledgement Statement	
The Client acknowledges that: a. They have received a copy of the enhancement and understand the contents and requirements. b. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this enhancement.	
<b>Planner:</b> _____	<b>Date:</b> _____
<b>Client:</b> _____	<b>Date:</b> _____