



United States Department of Agriculture  
Natural Resources Conservation Service

## Water Management Enhancement Activity – Drainage Water Management (EDR40)

### Drainage Water Management

Drainage water management is the practice of elevating the water table in a field by restricting the outflow from surface or from subsurface drains. NRCS encourages restricting outflows from agricultural drainage systems during periods in which the resultant elevated water table will not damage crops, interfere with farming operations, nor adversely affect neighboring properties. Water table elevations may be maintained by elevating the outflow elevation of the drain, or by pumping. The managed area is that portion of the field in which the water table is elevated to the design elevation. The effectiveness is based on the length of time and the season during which the water table is elevated at or near the soil surface.

### Benefits

Agricultural drainage water contains constituents, nitrates in particular, that can affect downstream water quality. Research shows that under drainage water management, reductions in nitrate loading are proportional to the reduced volume of drainage outflow. Additional benefits include: increased time for break-down of constituents such as pesticides; reduced oxidation of soil organic matter; and, improved seasonal habitat for waterfowl where surface ponding results.

### Criteria for Drainage Water Management Enhancement Activity

This enhancement requires implementation of a drainage management plan which includes, for each water control structure:

- A map showing influenced area at each control elevation.
- Record of planned and actual water table control elevations.

### Reference:

1. USDA, NRCS, National Engineering Handbook, Part 650; Engineering Field Handbook, Chapter 14, Water Management (Drainage), 4/01
2. USDA, NRCS, National Engineering Handbook, Part 624; Chapter 10 Water Table Control, 04/01
3. DRAINMOD, Users Guide Version 4.0, 06/94
4. USDA, NRCS, National Engineering Handbook Section 16, Drainage of Agricultural Land, 06/71
5. USDA, NRCS Conservation Practice Standard 554, Drainage Water Management, Electronic Field Office Technical Guide
6. Agricultural Drainage Management (ADMS) Task Force Fact Sheet, Agricultural Drainage Water Management Systems for Improving Water Quality and Increasing Crop Production, 10/03
7. Natural Resources Conservation Service, Drainage Water Management (DWM) Index Assessment Tool, 2006



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## CSP Enhancement Certification Sheet

### Drainage Water Management (EDR40)

This job sheet is to be used with the Conservation Security Program (CSP) where drainage water is being managed. Enhancement activities refer to actions that provide resource benefits beyond the level prescribed by NRCS Drainage Water Management conservation practice standard. Drainage Water Management activities control the level and timing of drainage out of surface or subsurface drained fields.

**Participant Acknowledgement Statement:**

I agree to apply this enhancement under the terms and conditions of my CSP contract and understand the requirements of the activity.

**Checklist of Agreed-To Management Practices:**

Check One	Drainage System Description
<input type="checkbox"/>	I have no drainage system
<input type="checkbox"/>	I have a surface or subsurface drain that partially drains a few wet spots.
<input type="checkbox"/>	I have a drainage system that is not currently meeting my objectives. Because of issues with the systems planning, design, construction, or maintenance, the system is not draining as well as I would expect or hope.
<input type="checkbox"/>	I have a drainage system that meets my objectives. It has been maintained, repaired and enhanced, as needed, to keep the system functioning. I have limited ability with my current system to store or restrict drainage water discharge, or raise or lower water storage or water table levels.
<input type="checkbox"/>	I have a drainage system that drains well and meets my objectives. It has been maintained, repaired and enhanced, as needed, to keep the system functioning well. It drains all my water out and I have a high quality water control structure and/or pump at the outlet that I could utilize to restrict drainage water discharge or raise or lower my water table or water storage level.
<input type="checkbox"/>	I have a drainage system planned, and designed by NRCS or a consultant to meet my objectives, and installed according to their recommendations. An Operation and Maintenance Plan was provided. I operate the system according to the O&M Plan. It drains all my water out and I have a high quality water control structure and/or pump at the outlet that provides me with multiple levels of control over my water table, storage level, and/or drainage discharge.



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<input type="checkbox"/>	I have a drainage system planned, and designed by NRCS or a consultant to meet my objectives, and installed according to their recommendations. The system was installed to accomplish both drainage and sub irrigation. An Operation and Maintenance Plan was provided. I operate the drainage system according to the O&M Plan. The system completely drains its service area. I have an automated water control structure and/or pump at the outlet that provides me with multiple levels of control over my water table, storage level, and/or drainage discharge. I manage my drainage water by raising the water table or storage level and reducing drainage discharge to reduce loss of nutrients and/or supply moisture to crops, and lower the water table or storage level and increase discharge when needed to allow land preparation and planting.
<input type="checkbox"/>	I have a subsurface or surface drainage system that is planned to intercept the design or potential drainage and retain it on-site in the soil profile, surface storage, and/or where allowed by state law diverted for a beneficial on-farm use rather than allowed to leave the property.

<b>Check One</b>	<b>Structure Type</b>
<input type="checkbox"/>	I do not have a water control structure
<input type="checkbox"/>	I have installed a water control structure that incorporates a means of allowing me to control my discharge flow and raise and lower my drainage discharge water level to a single elevation.
<input type="checkbox"/>	I have installed a water control structure that incorporates a means of allowing me to control my discharge flow and raise and lower my drainage discharge water level to multiple elevations.

<b>Check One</b>	<b>Automation</b>
<input type="checkbox"/>	Yes, I can raise or lower.
<input type="checkbox"/>	No, I have no automatic control.

<b>Check One</b>	<b>Water Table Monitoring</b>
<input type="checkbox"/>	Yes, I monitor the water table.
<input type="checkbox"/>	No, I do not monitor the water table.



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## CSP Enhancement Certification Sheet

Check Any	Months Where Drainage is Controlled
<input type="checkbox"/>	January
<input type="checkbox"/>	February
<input type="checkbox"/>	March
<input type="checkbox"/>	April
<input type="checkbox"/>	May
<input type="checkbox"/>	June
<input type="checkbox"/>	July
<input type="checkbox"/>	August
<input type="checkbox"/>	September
<input type="checkbox"/>	October
<input type="checkbox"/>	November
<input type="checkbox"/>	December

**Additional Requirements:**

All existing items above that qualified the fields must be maintained. Changes in the drainage management system will affect your index and should be discussed with an NRCS Conservationist to insure that you will maintain eligibility. Improvements in system efficiency can increase your score and may increase your payment.

**These actions have been applied and reviewed by: (initial below)**

2005	2006	2007	2008	2009	2010	2011	2012	2013

**I agree that the following information will be provided to NRCS upon request:**

1. Written documentation of the activity performed.
2. Copies of dated receipts for equipment or services purchased.

I understand that it is my responsibility to obtain all necessary permits and to comply with all laws, regulations and ordinances pertaining to the application of these activities.

**Accepted by:** \_\_\_\_\_ **Date:** \_\_\_\_\_