**Conservation Practice Effects**

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| **Vertical Drain (Ac) 630****Definition: A well, pipe, pit, or bore in porous, underground strata into which drainage water can be discharged without contaminating groundwater resources.****Major Resource Concerns Addressed: Surface and ground water quality.****Benchmark Condition: Runoff-water at low point in field.****Date: October, 2016 Developer/Location: Hal Gordon, OR** |
| **Positive Effects** | **Negative Effects** |
| **Soil*** **Gully erosion potential is reduced as runoff is captured and discharged subsurface.**

**Water*** **Diversion of surface water to subsurface will reduced runoff, flooding and ponding.**
* **Water diverted subsurface will reduce sediment, petroleum, heavy metals, pathogens and chemicals from manure, bio-solids or compost and other pollutants transported to surface water.**

**Air*** **No Change.**

**Plants*** **No Change.**

**Animals*** **Upland wildlife benefits with less ponding.**

**Energy*** **No Change.**

**Human*** **Increase yields/reduce costs as land becomes more productive.**
* **Create sustainability of natural resources that support your business.**
* **Increase the property value (real estate) of your property.**
* **Create open space and improve habitat for wildlife.**
* **Conserve soil and water for periods of drought and future use.**
* **Prevent off-site negative impacts.**
* **Comply with environmental regulations.**
* **Save time, money and labor.**
* **Promote family health and safety.**
* **Make land more attractive and promote good stewardship.**
* **May be eligible for cost share.**
 | **Land*** **Insignificant amount of land taken out of production.**

**Capital*** **Installation cost to drill hole.**

**Labor*** **Minor increase in field labor to maintain practice.**

**Management*** **Insignificant increase in management.**

**Risk*** **An increase in sub-surface water may increase oxidation and reduce soil organic matter.**
* **Diversion of surface water to subsurface will increase seasonal high water tables and seeps.**
* **Wetland wildlife lose habitat.**
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| **Net Effect: Reduces ponding and improves water quality at a slight cost.** |

**Commonly Associated Practices:** Diversion, Grassed Waterway, Integrated Pest Management, Karst Sinkhole Treatment, Lined Waterway or Outlet, Nutrient Management, Open Channel, Subsurface Drain, Underground Outlet.

**Note:** This worksheet contains general talking points for the conservation planner to discuss with the land user. It is the first step towards an economic or financial analysis. The second step would include identifying a specific site for analysis at the farm or field level, editing the template for local conditions, adding units and quantities of farm inputs and outputs. The third step in the economic analysis is to place a dollar value on as many variables as possible, put all units in the same time frame, using amortization ($/Acres/Year) or net present value ($/Acre), so benefits and costs can be compared. The fourth and final step would be to combine several conservation practices into a conservation system, which is how most conservation practices are applied at the field level. Data for the worksheet comes from the land user, conservation planner, technical specialist and local agricultural supply vendors and contractors. See Economics Technical Note: TN 200-ECN-1, Basic Economic Analysis Using T-Charts (August 2013) for more information.