**Conservation Practice Effects**

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| **Denitrifying Bioreactor (No) 605**  **Definition: A structure containing a carbon source, installed to reduce the concentration of nitrate nitrogen in subsurface agricultural drainage flow via enhanced denitrification.**  **Major Resource Concerns Addressed: Water quality.**  **Benchmark Condition: Irrigation return flows near critical wetland habitat.**  **Date: October, 2016 Developer/Location: Hal Gordon, OR** | |
| **Positive Effects** | **Negative Effects** |
| **Soil**   * **Improved soil health.**   **Water**   * **Reactors remove 30 to 60% of the nitrogen load coming from a drain pipe improving surface and ground water quality.**   **Air**   * **Reduced emissions of greenhouse gases, preventing nitrogen becoming ammonia gas.**   **Plants**   * **No change.**   **Animals**   * **Livestock and wildlife water improved.**   **Energy**   * **No change.**   **Human**   * **Create sustainability of natural resources that support your business.** * **Increase the property value (real estate) of your property.** * **Prevent off-site negative impacts.** * **Comply with environmental regulations.** * **Promote family health and safety.** * **Make land more attractive and promote good stewardship.** * **May be eligible for cost share.** * **Increased profitability in the long run.** | **Land**   * **No change.**   **Capital**   * **Installation and material costs.**   **Labor**   * **Increase in labor maintaining equipment.**   **Management**   * **No change.**   **Risk**   * **No increase in risk.** |
| **Net Effect: Protect water quality at a low cost.** | |

**Commonly Associated Practices:** Nutrient Management.

**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.