CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	10/10/2008
PRACTICE: Water and Sediment Control Basin 638		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			

RESOURCES, CONSIDERATIONS AND CONCERNS	**PHYSICAL EFFECTS**	**RATIONALE**
SOIL - EROSION		
Sheet and Rill	Not Applicable	Not applicable.
Wind	Not Applicable	Not applicable.
Ephemeral Gully	Slight to Substantial Improvement	Controlled flow will reduce gulley erosion down slope of basin.
Classic Gully	Slight to Substantial Improvement	Water diverted from gulley and spread in a nonerosive manner.
Streambank	Not Applicable	Not applicable.
Shoreline	Not Applicable	Not applicable.
Irrigation Induced	Not Applicable	Not applicable.
Mass Movement	Not Applicable	Not applicable.
Road, Roadsides, and Construction Sites	Slight to Substantial Improvement	Runoff can be controlled or diverted from construction site.
SOIL – CONDITION		
Organic Matter Depletion	Not Applicable	Not applicable.
Rangeland Site Stability	Not Applicable	Not applicable.
Compaction	Not Applicable	Not applicable.
Subsidence	Not Applicable	Not applicable.
Contaminants:		
• Salts and other Chemicals	Not Applicable	Not applicable.
• Animal Waste and other Organics - N	Not Applicable	Not applicable.
• Animal Waste and other Organics - P	Not Applicable	Not applicable.
• Animal Waste and other Organics - K	Not Applicable	Not applicable.
• Commercial Fertilizer - N	Not Applicable	Not applicable.
• Commercial Fertilizer – P	Not Applicable	Not applicable.
• Commercial Fertilizer – K	Not Applicable	Not applicable.
• Residual Pesticides	Not Applicable	Not applicable.
Damage from Sediment Deposition	Slight to Substantial Improvement	The action is designed to trap sediment.
WATER – QUANTITY		
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.
Excessive Seepage	Slight to Moderate Worsening	Retarded water in basin will infiltrate causing seepage problems below basin.
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Basin will retard flows reducing runoff.
Excessive Subsurface Water	Slight to Moderate Worsening	Retarded water in basin will infiltrate causing increased subsurface water.
Drifted Snow	Not Applicable	Not applicable.
Inadequate Outlets	Slight Improvement	Basin will retard flows reducing

		the runoff and controlling water releases.
Inefficient Water use on Irrigated Land	Not Applicable	Not applicable.
Inefficient Water use on Non-Irrigated Land	Not Applicable	Not applicable.
Reduced Capacity of Conveyances by Sediment Deposition	Moderate to Substantial Improvement	Basin traps and retains sediment.
Reduced Storage of Water Bodies by Sediment Accumulation	Moderate to Substantial Improvement	Basin traps and retains sediment.
Aquifer Overdraft	Not Applicable	Not applicable.
Insufficient Flows in Water Courses	Slight Improvement	Basin will retard flows reducing the runoff and controlling water releases.
WATER – QUALITY		
In Groundwater:		
• Harmful Levels of Pesticides	Slight Worsening	Water containing pesticides may seep from the basin into the groundwater in highly permeable soils.
• Excessive Nutrients and Organics	Slight Worsening	Nutrients impounded could contaminate groundwater in highly permeable soils.
• Excessive Salinity	Slight Worsening	Infiltrating water in the basin can move soluble salts to the ground water
• Harmful Levels of Heavy Metals	Slight Worsening	Infiltrating water in the basin will move soluble contaminants to the ground water in highly permeable soils.
• Harmful Levels of Pathogens	Slight Worsening	Infiltrating water in the basin may leach pathogens into the groundwater in highly permeable soils.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
In Surface Water:		
• Harmful Levels of Pesticides	Neutral	Basins reduce runoff losses but provide a direct conduit to surface waters
• Excessive Nutrients and Organics	Neutral	Basins reduce runoff losses but provide a direct conduit to surface waters
• Excessive Suspended Sediment and Turbidity	Moderate to Substantial Improvement	Basin retains sediment and minimizes turbidity
• Excessive Salinity	Neutral	Basins reduce runoff losses but provide a direct conduit to surface waters
• Harmful Levels of Heavy Metals	Neutral	Basins reduce runoff losses but provide a direct conduit to surface waters
• Harmful Temperatures	Slight to Moderate Worsening	Water retained in basin is generally warmer than receiving waters to which outlets drain.
• Harmful Levels of Pathogens	Neutral	Basins reduce runoff losses but provide a direct conduit to

		surface waters
• Harmful Levels of Petroleum	Neutral	Basins reduce runoff losses but provide a direct conduit to surface waters
AIR – QUALITY		
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Not Applicable	Not applicable.
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Not Applicable	Not applicable.
Excessive Ozone	Not Applicable	Not applicable.
Excessive Greenhouse Gas:		
• CO_2 (Carbon Dioxide)	Not Applicable	Not applicable.
• N_20 (Nitrous Oxide)	Not Applicable	Not applicable.
• CH_4 (Methane)	Not Applicable	Not applicable.
Ammonia (NH_3)	Not Applicable	Not applicable.
Chemical Drift	Not Applicable	Not applicable.
Objectionable Odors	Not Applicable	Not applicable.
Reduced Visibility	Not Applicable	Not applicable.
Undesirable Air Movement	Not Applicable	Not applicable.
Adverse Air Temperature	Not Applicable	Not applicable.
PLANTS – SUITABLIITY		
Plants not Adapted or Suited	Not Applicable	Not applicable.
PLANTS - CONDITION		
Productivity, Health, and Vigor	Not Applicable	Not applicable.
Threatened or Endangered Plant Species:		
• Plant Species Listed or Proposed for Listing Under the Endangered Species Act	Not Applicable	Not applicable.
• Declining Species, Species of Concern	Not Applicable	Not applicable.
Noxious and Invasive Plants	Not Applicable	Not applicable.
Forage Quality and Palatability	Not Applicable	Not applicable.
Wildfire Hazard	Not Applicable	Not applicable.
ANIMALS - FISH AND WILDLIFE		
Inadequate Food	Not Applicable	Not Applicable
Inadequate Cover/Shelter	Not Applicable	Not Applicable
Inadequate Water	Slight to Moderate Improvement	Surface runoff retained will provide temporary water to wildlife as sediment is trapped, improving water quality in watershed.
Inadequate Space	Not Applicable	Not applicable.
Habitat Fragmentation	Not Applicable	Not applicable.
Imbalance Among and Within Populations	Not Applicable	Not applicable.
Threatened and Endangered Fish and Wildlife Species:		
• Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.

• Declining Species, Species of Concern	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.
ANIMALS – DOMESTIC		
Inadequate Quantities and Quality of Feed and Forage	Not Applicable	Not applicable.
Inadequate Shelter	Not Applicable	Not applicable.
Inadequate Stock Water	Not Applicable	Not Applicable.
Stress and Mortality	Not Applicable	Not applicable.
HUMAN – ECONOMICS		
Land - Change in Land Use	Substantial	Substantial, convert to water and sediment storage.
Land – Land in Production	Substantial decrease	Substantial decrease, change cropland to water & sediment storage.
Capital – Change in Equipment	Substantial increase.	Equipment required to install practice.
Capital - Total Investment Cost	Substantial.	Materials, equipment and labor to install practice.
Capital – Annual Cost	Slight to moderate increase.	Annual structure management costs.
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight to Moderate Increase	Labor to remove accumulated sediment
Labor – Change in Management Level	Negligible	
Risk - Yield	Not applicable.	Not applicable.
Risk - Flexibility	Slight Decrease	Slight decrease due to improved farmability of sloping land.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Slight to Moderate Increase	Slight to moderate increase due to construction costs.
Profitability – Change in Profitability	Situational	Moderate decrease to slight increase.
HUMAN - CULTURAL		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight Increase	Construction impacts (mechanical).
HUMAN – ENERGY		
Depletion of Fossil Fuel Resources	Slight to Moderate Decrease	Practice reduces the energy required to repair or farm around gullies.
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not Applicable

Human Considerations Explanation

Considerations	Physical effects indicate:
Land - Change in Land Use	The degree to which implementing the conservation practice is expected to cause a change from one land use to another.
Land - Land in Production	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of land in production.
Capital - Change in Equipment	The degree to which implementing the conservation practice is expected to cause an increase or decrease in the amount of capital equipment required for farm or ranch operations.
Capital - Total Investment Cost	A qualitative measure of the increase in total investment dollars required in order to implement the conservation practice.
Capital - Annual Cost	A qualitative measure of the expected change in annual capital costs required in order to operate and maintain the conservation practice.
Capital - Credit & Farm Program Eligibility	Included to make conservation planners aware of the potential availability of funding for implementing conservation practices.
Labor – Labor	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of overall farm or ranch labor required for operations.
Labor - Change in Management Level	The degree to which implementing the conservation practice is likely to cause an increase or decrease in the total amount of required active management on a farm or ranch.
Risk – Yield	The degree to which risk, as related to crop or livestock yields, is expected to increase or decrease as a result of implementing the conservation practice.
Risk – Flexibility	The degree to which risk, as related to the flexibility of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice. For example, converting from flood irrigation to a sprinkler system gives a farmer an increase in flexibility of irrigation, which results in a decrease in the level of risk associated with inflexibility of operations.
Risk – Timing	The degree to which risk, as related to the timing of farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
Risk - Cash Flow	The degree to which risk, as related to cash flow in farm or ranch operations, is expected to increase or decrease as a result of implementing the conservation practice.
Profitability - Change in Profitability	The degree to which farm or ranch profitability is expected to increase or decrease as a result of implementing the conservation practice.
Cultural Resources and/or Historic Properties Present or Suspected to be Present	The degree to which implementation of the conservation practice is expected to increase or decrease the risk of cultural resource disturbance, degradation, or loss.
Depletion of Fossil Fuel Resources	Inefficient use of fossil-originated energy sources (diesel, gasoline, propane, natural gas, coal), lubricants, and other materials.
Underutilization of Non-Fossil Energy Sources	Available and cost-effective alternative energy sources (solar, wind, biofuel, hydroelectric, geothermal) are not being used or are being used inefficiently.