

## CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Nebraska	FIELD OFFICE	Any	DATE	12/27/2011
<b>PRACTICE: Fish Raceway or Tank 398</b>		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
<b>RESOURCES, CONSIDERATIONS AND CONCERNS</b>	<b>PHYSICAL EFFECTS</b>	<b>RATIONALE</b>			
<b>SOIL - EROSION</b>					
Sheet and Rill	Not Applicable	Not applicable.			
Wind	Not Applicable	Not applicable.			
Ephemeral Gully	Not Applicable	Not applicable.			
Classic Gully	Not Applicable	Not applicable.			
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	Neutral	Construction of raceways may temporarily increase erosion			
<b>SOIL – CONDITION</b>					
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	Neutral	Not applicable.			
• Animal Waste and other Organics - P	Neutral	Not applicable.			
• Animal Waste and other Organics - K	Neutral	Not applicable.			
• Commercial Fertilizer - N	Neutral	Not applicable.			
• Commercial Fertilizer – P	Neutral	Not applicable.			
• Commercial Fertilizer – K	Neutral	Not applicable.			
• Residual Pesticides	Not Applicable	Not applicable.			
Damage from Sediment Deposition	Not Applicable	Not applicable.			
<b>WATER – QUANTITY</b>					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Not Applicable	Not applicable.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight to Moderate Worsening	Water needs for fish production			

		could result in aquifer overdraft during dry seasons.
Insufficient Flows in Water Courses	Slight to Moderate Worsening	Water needs for fish production could result in withdrawal from streams and subsequent insufficient flows during dry seasons.
<b>WATER – QUALITY</b>		
In Groundwater:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Slight to Moderate Worsening	The action discharges wastewater which could result in groundwater contamination.
• Excessive Salinity	Not Applicable	Not applicable.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Levels of Pathogens	Slight Worsening	Pathogens in wastewater could contaminate groundwater.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
In Surface Water:		
• Harmful Levels of Pesticides	Not Applicable	Not applicable.
• Excessive Nutrients and Organics	Slight to Moderate Worsening	The action discharges wastewater from facilities which may result in contamination of surface water with nutrients and organics. Mitigating action is part of practice design.
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.
• Excessive Salinity	Slight Worsening	Waste from fish production may contain salts.
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.
• Harmful Temperatures	Slight Worsening	Water discharges are generally warmer than ambient temperature of receiving waters
• Harmful Levels of Pathogens	Slight Worsening	Fish pathogens from facility wastewater could be discharged into surface waters. Mitigation is part of practice design.
• Harmful Levels of Petroleum	Not Applicable	Not applicable.
<b>AIR – QUALITY</b>		
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 <sub>2</sub> (Carbon Dioxide)	Not Applicable	Not applicable.
• N <sub>2</sub> O (Nitrous Oxide)	Not Applicable	Not applicable.
• CH <sub>4</sub> (Methane)	Not Applicable	Not applicable.
Ammonia (NH <sub>3</sub> )	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.
<b>PLANTS – SUITABILITY</b>		
Plants not Adapted or Suited	Not Applicable	Not applicable.
<b>PLANTS - CONDITION</b>		
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.
<b>ANIMALS - FISH AND WILDLIFE</b>		
Inadequate Food	Not Applicable	Not applicable.
Inadequate Cover/Shelter	Not Applicable	Not applicable.
Inadequate Water	Not Applicable	Not applicable.
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.
<b>ANIMALS – DOMESTIC</b>		
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	Moderate to Substantial Improvement	Maintaining optimal conditions minimizes stress and mortality.
<b>HUMAN – ECONOMICS</b>		
Land - Change in Land Use	Moderate.	
Land – Land in Production	Not applicable.	Not applicable.
Capital – Change in Equipment	Substantial increase.	
Capital - Total Investment Cost	Substantial.	
Capital – Annual Cost	Slight to moderate increase.	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight to substantial increase	Slight to substantial increase if new operation.
Labor – Change in Management Level	Slight to substantial increase	Slight to substantial increase if new operation.
Risk - Yield	Slight to Moderate Decrease	Slight to moderate decrease due

		to favorable habitat.
Risk - Flexibility	Moderate Decrease	Moderate decrease due to favorable habitat.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Moderate Increase	Moderate increase due to installation costs.
Profitability – Change in Profitability	Slight to substantial increase.	Slight to substantial increase.
<b>HUMAN - CULTURAL</b>		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight to Substantial Increase	Construction impacts.
<b>HUMAN – ENERGY</b>		
Depletion of Fossil Fuel Resources	Slight Increase	Operation of facilities requires energy. Some facilities are more energy efficient than others.
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not applicable.

## Human Considerations Explanation

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