

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Pennsylvania	FIELD OFFICE	Any	DATE	
PRACTICE: Sinkhole and Sinkhole Area Treatment 527		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	Moderate to Substantial Improvement		Concentrated flow erosion control is part of practice.		
Classic Gully	Moderate to Substantial Improvement		Concentrated flow erosion control is part of practice.		
Streambank	Not Applicable		Not Applicable		
Shoreline	Not Applicable		Not Applicable		
Irrigation Induced	Not Applicable		Not Applicable		
Mass Movement	Slight to Substantial Improvement		Inverted filter helps stabilize side slopes to prevent mass movement and sinkhole enlargement		
Road, Roadsides, and Construction Sites	Not Applicable		Not Applicable		
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	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Animal Waste and other Organics - N	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Animal Waste and other Organics - P	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Animal Waste and other Organics - K	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Commercial Fertilizer - N	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Commercial Fertilizer – P	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Commercial Fertilizer – K	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		
• Residual Pesticides	Slight to Moderate Improvement		Vegetated buffer reduces soil/contaminant runoff to ground water.		

Damage from Sediment Deposition	Not Applicable	Not Applicable
WATER – QUANTITY		
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	Slight Improvement	Stabilized sinkhole may provide stable outlets for drains of support practices
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	Slight Improvement	Erosion and sediment control measures associated with this practice may reduce sediment introduced into aquifer, which may then reduce sediment incoming to surface water bodies that have ground water feeds.
Aquifer Overdraft	Not Applicable	Not Applicable
Insufficient Flows in Water Courses	Not Applicable	Not Applicable
WATER – QUALITY		
In Groundwater:		
• Harmful Levels of Pesticides	Slight to Substantial Improvement	Support vegetation or diversion may trap and allow pesticides to degrade before surface water enters the sinkhole
• Excessive Nutrients and Organics	Slight to Substantial Improvement	Support vegetation may trap and use nutrients and organics from run-in water
• Excessive Salinity	Slight to Substantial Improvement	Support vegetation or diversion may reduce salinity from run-in water
• Harmful Levels of Heavy Metals	Slight to Moderate Improvement	Support vegetation may reduce concentrations of heavy metals in run-in water.
• Harmful Levels of Pathogens	Slight to Substantial Improvement	Support vegetation or diversion may trap and ameliorate bacteria from run-in water.
• Harmful Levels of Petroleum	Sight to substantial mprovement	Diversion of run-in water to surface treatment may reduce petroleum concentrations.
In Surface Water:		
• Harmful Levels of Pesticides	Slight to Substantial Improvement	Reduction in pesticide concentrations in run-in water may reduce pesticides in water bodies that receive ground water.
• Excessive Nutrients and Organics	Slight to Substantial Improvement	Reduction in nutrients and organic concentrations in run-in

		water may reduce them in water bodies that receive ground water.
• Excessive Suspended Sediment and Turbidity	Slight to Substantial Improvement	Reduction in sediment concentrations in run-in water may reduce sediment yield in water bodies that receive ground water.
• Excessive Salinity	Not Applicable	Not Applicable
• Harmful Levels of Heavy Metals	Not Applicable	Not Applicable
• Harmful Temperatures	Not Applicable	Not Applicable
• Harmful Levels of Pathogens	Slight to Substantial Improvement	Reduction in bacteria concentrations in run-in water may reduce bacteria contamination of water bodies that receive ground water.
• Harmful Levels of Petroleum	Not Applicable	Not Applicable
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 ₂ O (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 – SUITABILITY		
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	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.
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	Slight to Substantial.	Substantial. Consists of changing or adding additional land use or uses.
Land – Land in Production	Slight to Substantial Increase	Substantial increase if land is brought into production.
Capital – Change in Equipment	Moderate increase.	
Capital - Total Investment Cost	Moderate.	Moderate.
Capital – Annual Cost	Not applicable.	Not applicable.
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Negligible	
Labor – Change in Management Level	Negligible	
Risk - Yield	Moderate to Substantial Decrease	Substantial Decrease to health and human life.
Risk - Flexibility	Moderate to Substantial Decrease	Substantial decrease in risk by permitting use of land occupied sinkhole.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Moderate to Substantial Increase	Moderate to substantial increase due to construction costs.
Profitability – Change in Profitability	Moderate decrease.	
HUMAN - CULTURAL		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight to Substantial Increase	Treatment may affect archaeological sites positively by decreasing erosion or negatively through mechanical activity
HUMAN – ENERGY		
Depletion of Fossil Fuel Resources	Not Applicable	Not Applicable
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.