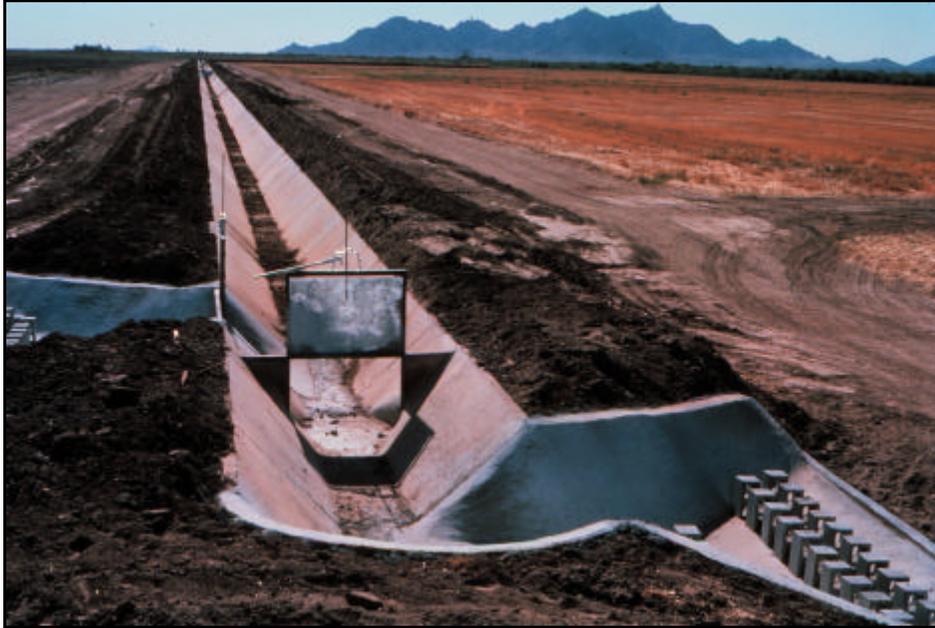


Irrigation Water Conveyance/Ditch and Canal Lining--Plain Concrete

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 428A

04/02



DEFINITION

Concrete Ditch and Canal Lining is installing a fixed lining of concrete in an existing or newly constructed irrigation field ditch, canal or lateral.

PRACTICE INFORMATION

Lined ditches and canals help improve efficiency and conservation of our irrigation water supplies. The purpose of the practice is to prevent waterlogging, reduce erosion, and reduce water loss from seepage.

This practice applies to concrete linings made of nonreinforced concrete that is cast in place in a preformed ditch or canal. This practice is restricted to installations in ditches and canals that have a bottom width

of 6 foot or less, a design capacity not greater than 100 cubic feet per second and a maximum velocity of 15 feet per second.

Care must be taken to assure nonreinforced concrete lined ditches and canals are protected from side drainage flooding. Other considerations include risks from frost heaving, high shrink/swell soil, and in some cases high salt concentrations that cause rapid deterioration of concrete.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages list the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, and soil.

Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

STATE		FIELD OFFICE		DATE	
PRACTICE: 428A Irrigation Water Conveyance - ditch/canal lining--plain concrete			NOTES:		
RESOURCE: SOIL RESOURCE CONCERN: EROSION					
RESOURCE INDICATORS			PHYSICAL EFFECTS		
SHEET AND RILL			N/A		
WIND			N/A		
EPHEMERAL GULLY			N/A		
CLASSIC GULLY			N/A		
STREAMBANK			N/A		
IRRIGATION INDUCED			N/A		
SOIL MASS MOVEMENT			N/A		
ROADBANK/CONSTRUCTION			N/A		
OTHER					
RESOURCE CONCERN: SOIL CONDITION					
SOIL TILTH			significant improvement in soil tilth		
SOIL COMPACTION			significant reduction in soil compaction		
SOIL CONTAMINATION					
• SALTS			significant reduction in soil salinity		
• ORGANICS			insignificant		
• FERTILIZERS			N/A		
• PESTICIDES			N/A		
• OTHER					
DEPOSITION/DAMAGE					
• ONSITE			insignificant		
• OFFSITE			insignificant		
DEPOSITION/SAFETY					
• ONSITE			insignificant		
• OFFSITE			insignificant		
OTHER					
RESOURCE: WATER RESOURCE CONCERN: WATER QUANTITY					
SEEPS			significant reduction in seepage hazard		
RUNOFF/FLOODING			slight decrease in runoff/flooding		
EXCESS SUBSURFACE WATER			significant reduction in excess subsurface water		
INADEQUATE OUTLETS			insignificant		
WATER MGT. IRRIGATION					
• SURFACE			significant improvement in irrigation efficiency		
• SPRINKLER			significant improvement in irrigation efficiency		
WATER MGT. NON-IRRIGATED			N/A		
RESTRICTED FLOW CAPACITY (H2O convey.)					
• ONSITE			situational regarding onsite drainage		
• OFFSITE			situational concerning drainage/offsite		
RESTRICTED STORAGE			insignificant		

RESOURCE: WATER	
RESOURCE CONCERN: WATER QUALITY	
RESOURCE INDICATORS	PHYSICAL EFFECTS
GROUNDWATER CONTAMINANTS	
• PESTICIDES	slight poten reduction GWater contam./pesticides
• NUTRIENTS AND ORGANICS	slight poten. decrease/GWater contam./nutr,organ.
• SALINITY	significant poten. decrease/GWcontam/salinity
• HEAVY METALS	slight poten. decrease/GWater contam./heavy metal
• PATHOGENS	slight poten. decrease/GWater contam./pathegens
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	insignificant
• NUTRIENTS AND ORGANICS	insignificant
• SUSPENDED SEDIMENTS	insignificant
• LOW DESOLVED OXYGEN	insignificant
• SALINITY	insignificant
• HEAVY METALS	insignificant
• WATER TEMPERATURE	insignificant
• PATHOGENS	insignificant
AQUATIC HABITAT SUITABILITY	slight improvement in Aqua. Hab. Suit.
OTHER	
RESOURCE: AIR	
RESOURCE CONCERN: AIR QUALITY	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	N/A
• OFFSITE SAFETY	N/A
• ONSITE STRUCT. PROBLEMS	N/A
• OFFSITE STRUCT. PROBLEMS	N/A
• ONSITE HEALTH	N/A
• OFFSITE HEALTH	N/A
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	N/A
AIRBORNE CHEMICAL DRIFT	N/A
AIRBORNE ODORS	N/A
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: AIR CONDITION	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

RESOURCE: HUMAN	
RESOURCE CONCERN: SOCIAL CONSIDERATIONS	
RESOURCE INDICATORS	PHYSICAL EFFECTS
PUBLIC HEALTH AND SAFETY	sign. improvement in public health & safety
PRIVATE/PUBLIC VALUES	sign. improvement in private/public values
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	insignificant risk involved
TENURE	N/A
OTHER	
RESOURCE CONCERN: CULTURAL CONSIDERATIONS	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	