

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

310 – BEDDING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

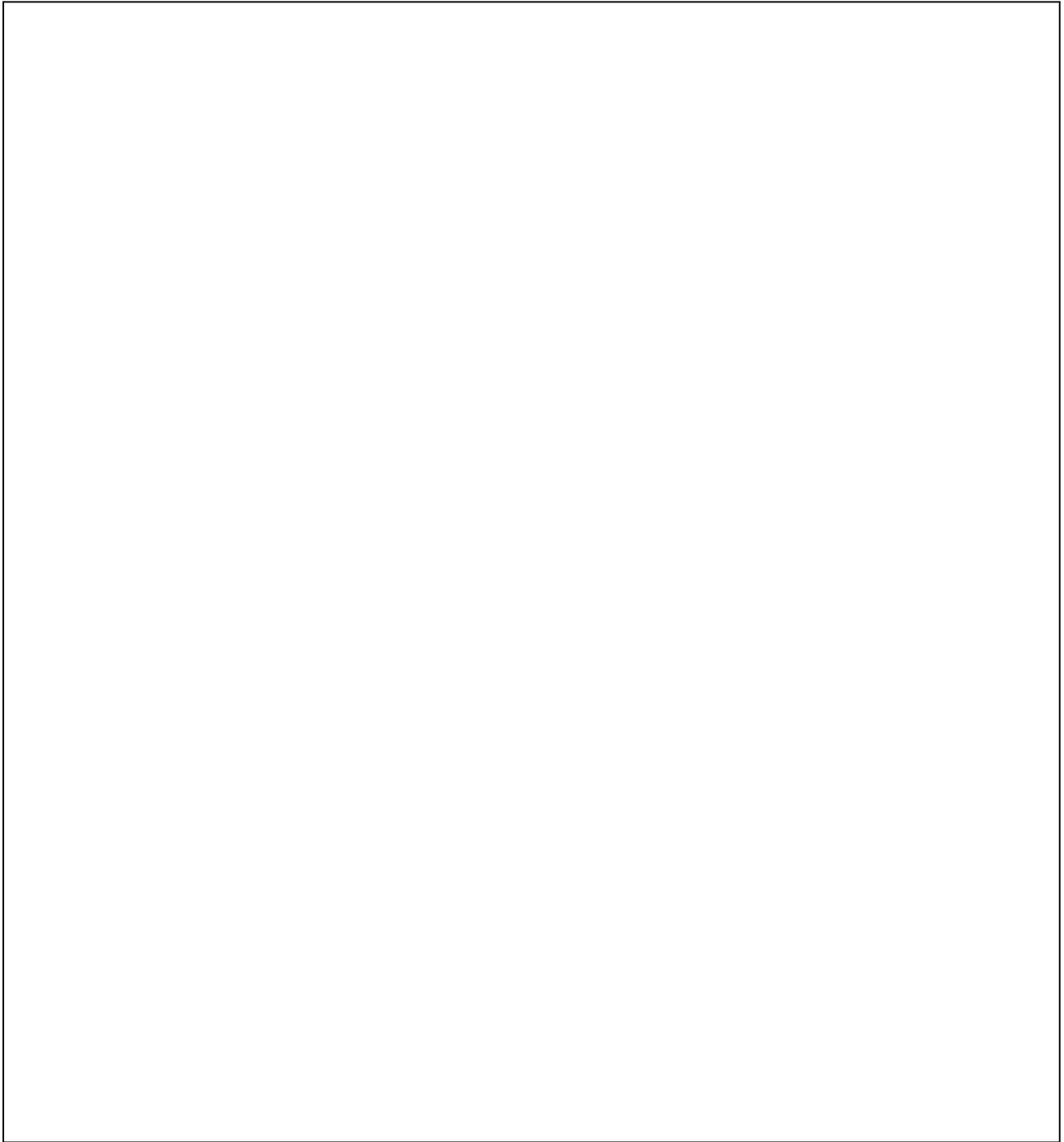
A properly operated and maintained bedding system is an asset to the farm. This system was designed and installed to improve surface drainage. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check all vegetative, pipe or structure outlets to make sure they are functioning properly
- Maintain design depth of cover on all pipelines and structures.
- Avoid operation of tillage and subsoiling equipment that could damage any component of the system.
- Remove all foreign debris that hinders system operation.
- Maintain vigorous growth of vegetative coverings on non farm areas. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control excessive growth.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR BEDDING PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR BEDDING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

313 - WASTE STORAGE FACILITY

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained waste storage structure is an asset to your farm. This waste storage structure was designed and installed for temporary storage of animal waste. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Do not allow human entry to any enclosed structure without safety equipment that includes ladders and breathing apparatus. Maintain appropriate warning signs.
- Safety stations should be inspected twice a year. Safety items such as ropes, ladders and swim rings should be replaced as necessary.
- Do not allow the operation of any equipment that exceeds the design load limit on or within twenty feet of the structure.
- Maintain all pumps, agitators, piping, valves and all other electrical and mechanical equipment in good operating condition by following the manufacturer's recommendations. Repair as necessary.
- Maintain grounding rods and wiring for all electrical equipment in good condition.
- Inspect haul roads and approaches to and from the waste storage facility frequently to determine the need for stabilizing materials.
- A thorough inspection of pond liners and concrete sumps, pits, walls, ramps, and floors for damage, separation and/or cracks should be made each time the pond is emptied. Repair any damage prior to refilling the pond.
- Do not dispose of dead animals, greases, syringes, or other non-animal waste products in the facility.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human or livestock entry.

- Annually inspect pond for damage from normal use. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function. Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and outlets after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the embankment. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and paint.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.
- Apply insecticides for insect control as per manufacturer's recommendations and precautions, as needed.
- Operate system in a manner to minimize odors and air drift.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WASTE STORAGE FACILITY.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

317 - COMPOSTING FACILITY
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained composting facility is an asset to your farm. This facility was designed and installed to reduce the pollution potential of organic agricultural wastes to surface and ground water by composting. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

Composting is a biological process. It requires a combination of art and science for success. The operation may need to undergo some trial and error in the start-up of a new composting facility.

Operation and maintenance is required to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Do not allow human entry to any enclosed structure without appropriate safety equipment. Maintain appropriate warning signs.
- Safety stations should be inspected twice a year. Safety items should be replaced as necessary. Safety requirements for operation of the composting facility shall be posted in a visible location and replaced when necessary.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human or livestock entry.
- Manage the compost piles for temperature, odors, moisture, and oxygen, as appropriate. Make adjustments throughout the composting period to insure proper composting processes.
- Closely monitor temperatures above 165°F. Take action immediately to cool piles that have reached temperatures above 185°F.
- Do not allow the operation of any equipment that exceeds the design load limit on or within twenty feet of the structure.

- Maintain all pumps, agitators, piping, valves and all other electrical and mechanical equipment in good operating condition by following the manufacturer's recommendations. Repair as necessary.
- Maintain grounding rods and wiring for all electrical equipment in good condition.
- Inspect haul roads and approaches to and from the composting facility frequently to determine the need for stabilizing materials.
- Visually inspect area around composting facility. Ensure that surface runoff is directed away from the facility and contaminated runoff is directed to an appropriate storage or treatment facility. Take appropriate corrective actions to direct runoff to the appropriate locations.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and paint.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Operate system in a manner to minimize odors and air drift.

SPECIFIC RECOMMENDATIONS FOR YOUR COMPOSTING FACILITY

Provide recipe for composting and sequence of ingredient layering and mixing.

Provide guidance on making changes to the recipe when necessary.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR COMPOSTING FACILITY.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

320 – IRRIGATION CANAL OR LATERAL
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

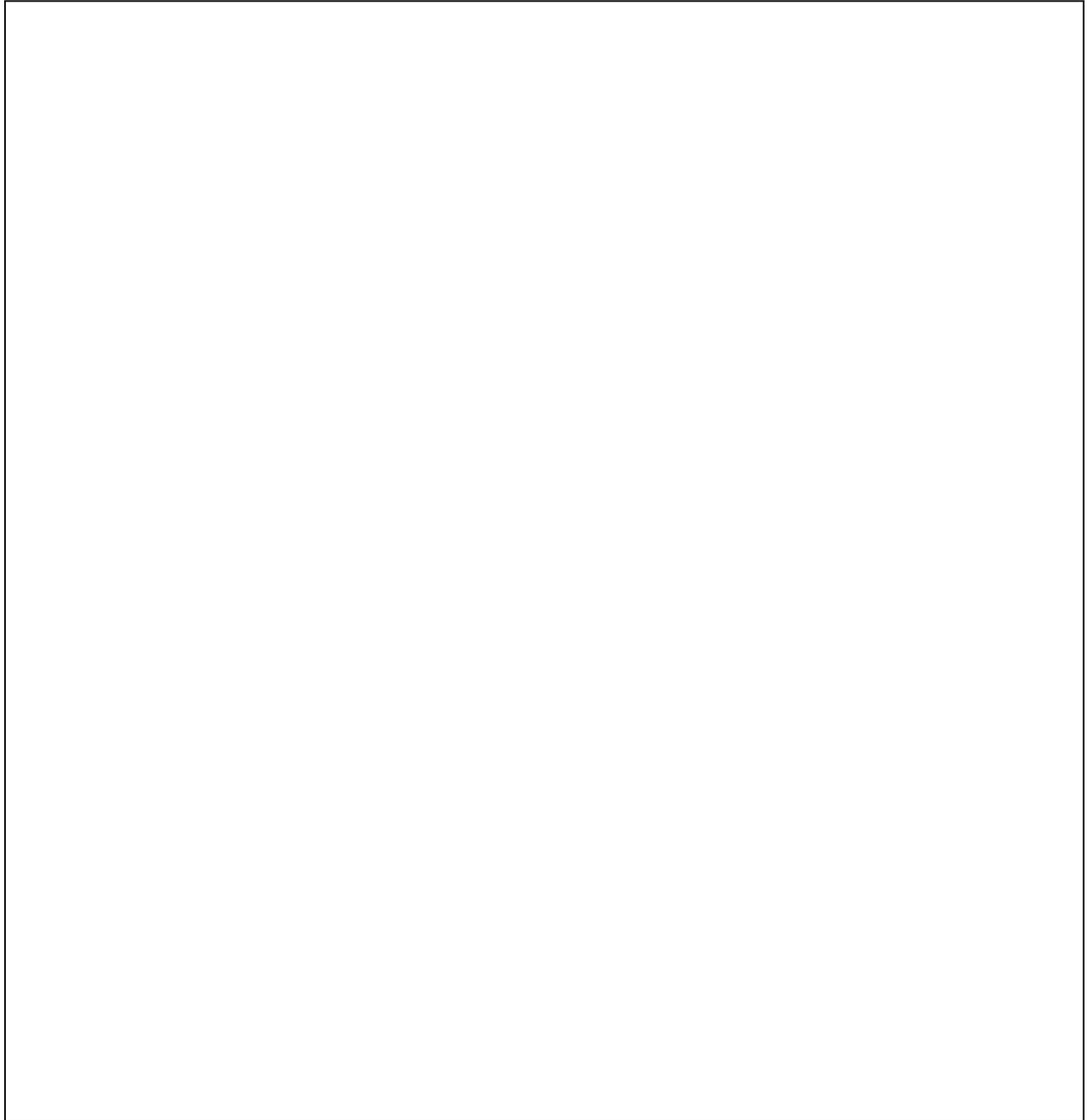
A properly operated and maintained irrigation canal or lateral is an asset to the farm. This system of canals and/or laterals was designed and installed to convey water from the source of supply to beginning of the farm irrigation system. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain cross section and gradient by controlling channel erosion and sloughing.
- Immediately remove silt deposits, obstructions, or blockage of the drainage system that includes channel spillways, trash racks, inlets, or outlets.
- Control the growth of vegetative materials by the use of herbicides and/or mowing. Avoid direct drainage water contact with herbicides.
- Remove all foreign debris that hinders system operation.
- Install and maintain fences to control livestock access when adjacent fields are used for pasture.
- Replace weathered or displaced rock riprap to constructed grade.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION CANAL OR LATERAL

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide specific recommendations for their irrigation canal or lateral.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION CANAL OR LATERAL.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

326 – CLEARING AND SNAGGING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

Streams are dynamic and tend to move over time, often abrupt changes in alignment are due to fallen trees, snags or other debris in the channel. This practice will require you to perform periodic operation to maintain satisfactory performance. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

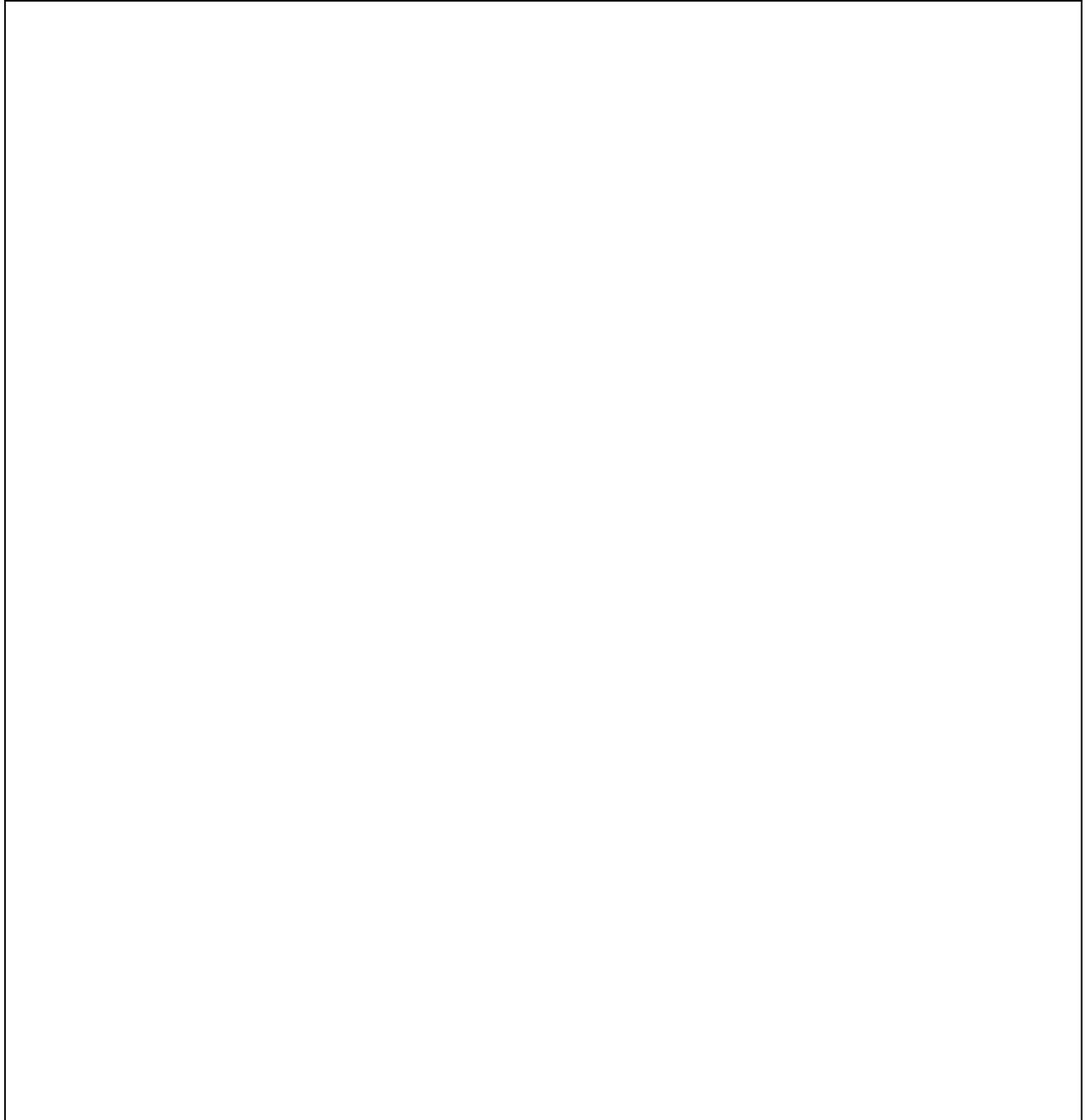
This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Periodically remove sediment or soil that is deposited in the channel and restore to the original channel dimensions.
- Remove all foreign debris that hinders system operation.
- Immediately remove any obstructions or blockage of spillways, trash racks, or pipe inlets.
- Vegetation shall be maintained, and trees and brush controlled by approved herbicides or mechanical means. Fertilize as needed to maintain a vigorous vegetative cover. Re-establish vegetation cover immediately where scour erosion has removed established seeding.
- Provide for periodic inspections, especially immediately following storms providing a 10-year frequency or greater runoff. Special attention shall be given to inspection of landscape resources and habitat for fish and wildlife. Prompt repair or replacement of damaged components is necessary.
- Where applicable, control grazing in the construction area during vegetative establishment and when soil conditions are wet.
- Periodically inspect the area for signs of significant streambank undermining or instability.

- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR CLEARING AND SNAGGING PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR CLEARING AND SNAGGING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

348 – DAM, DIVERSION

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained dam is an asset to the farm. This structure was designed and installed to store water for beneficial uses per the site specific design. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

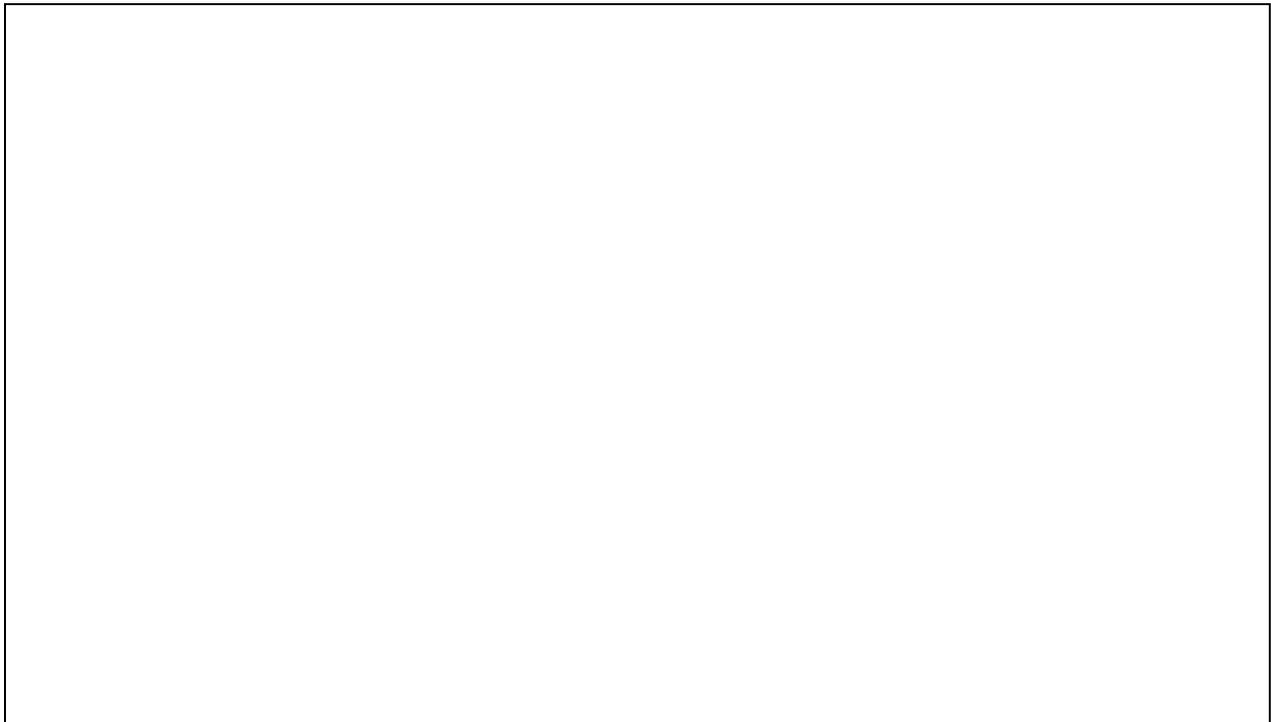
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function.
- Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the dam. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.

- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR DIVERSION DAM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

350 – SEDIMENT BASIN

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained Sediment Basin is an asset to your farm. This sediment basin was designed and installed to remove, collect and provide temporary storage of sediment and water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Periodic removal of sediment is necessary to maintain the effectiveness of this installation. The cleanout intervals may vary depending upon the volume of sediment that has accumulated. As a general rule the basin will lose its effectiveness when about 50 percent of the design volume is filled with sediment.
- Periodically inspect the spillways and control gates for proper functioning for their ability to maintain the water level to design elevations. Immediately remove any blockage or obstructions in spillways.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.

- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR SEDIMENT BASIN.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

351 – WELL DECOMMISSIONING
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

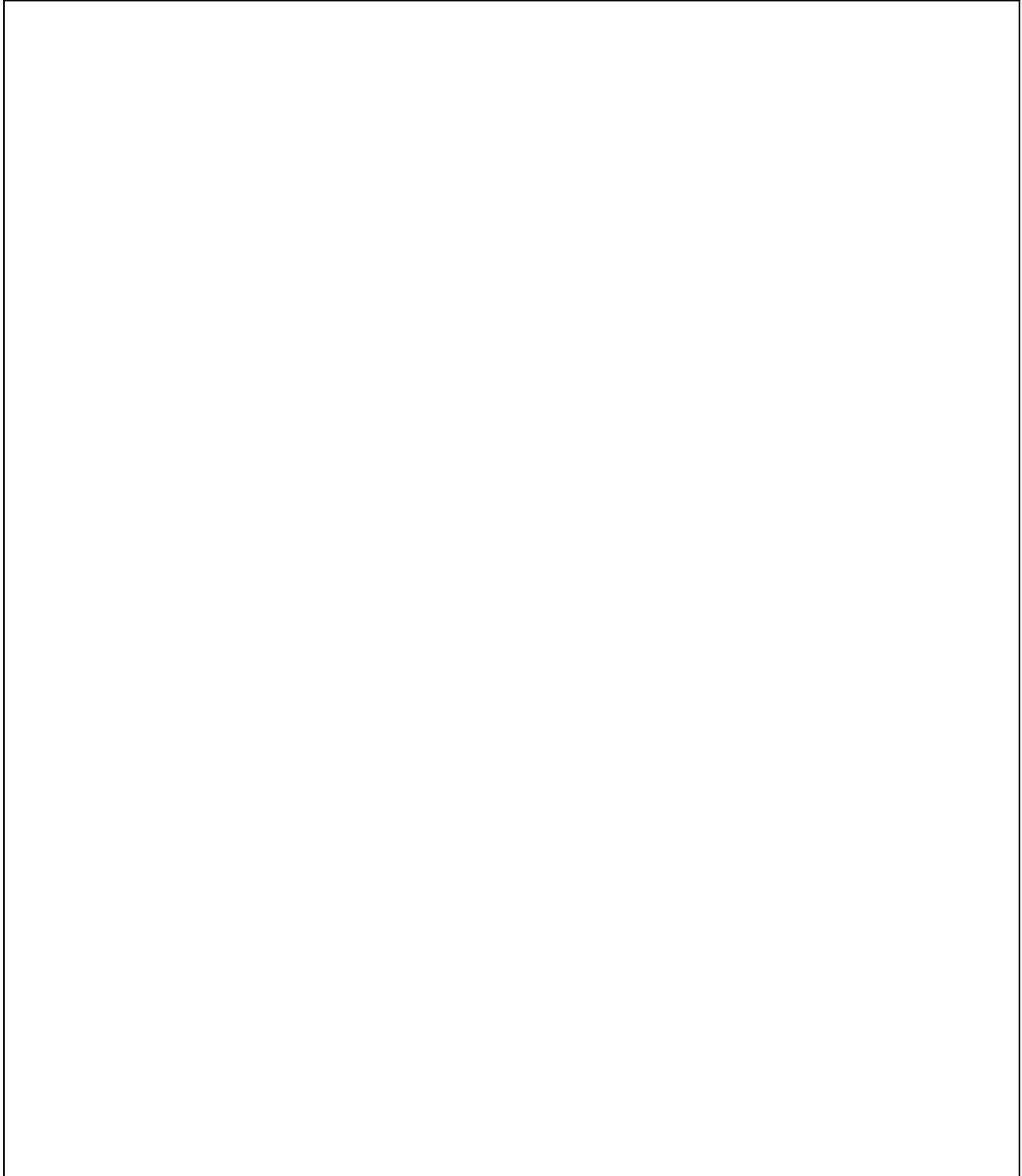
This well has been decommissioned as it is no longer in use. Decommissioning will prevent entry of vermin, debris, or other foreign substances into the well or well bore hole; eliminate the physical hazard of an open hole to people, animals, and farm machinery; prevent entry of contaminated surface water into well and migration of contaminants into unsaturated (vadose) zone or saturated zone as well as prevent the commingling of chemically or physically different ground waters between separate water bearing zones. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Annually inspect the site to ensure that the decommissioned well and the adjacent area have not settled or eroded, or are otherwise adversely disturbed. Promptly repair and re-vegetate bare spots and eroded areas.
- Prevent surface ponding by localized grading or addition of gravel to remove depressions.
- Maintain installed fences to provide warning and/or unauthorized human or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Maintain vegetated areas in adequate cover. Re-seed and mow as needed.

SPECIFIC RECOMMENDATIONS FOR YOUR DECOMMISSIONED WELL



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR DECOMMISSIONED WELL.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

356 - DIKE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained dike is an asset to your farm. This dike was designed and installed to prevent inundation of your farmland from the adjacent watercourse. The estimated life span of this installation is at least 10 years. The life of the structure can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic maintenance and may also require operational items to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.
- Periodically check the elevation of the earthfills and restore to grade, if necessary.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Periodically inspect flap gates, control gates, valves and other appurtenances for proper functioning, and their ability to maintain the water level to design elevations. Immediately remove any blockage or debris that could cause malfunction. At approximately 3 month intervals exercise gates and valves to help assure proper function.
- Make sure that all structure drains are functional and soil is not being transported through the drainage system. Keep screens and/or rodent guards maintained and in place.
- Determine and eliminate causes of settlement or cracks in the earthen sections and repair damage.

- Check all rock riprap sections for accelerated weathering and displacement. Replace to original grades if necessary.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenances.
- Remove woody vegetation from embankments.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR DIKE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

359 - WASTE TREATMENT LAGOON

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained waste treatment lagoon is an asset to your farm. This waste storage structure was designed and installed to biologically treat animal waste. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Do not allow human entry to any enclosed structure without safety equipment that includes ladders and breathing apparatus. Maintain appropriate warning signs.
- Safety stations should be inspected twice a year. Safety items such as ropes, ladders and swim rings should be replaced as necessary.
- Do not allow the operation of any equipment that exceeds the design load limit on or within twenty feet of the structure.
- Maintain all pumps, agitators, piping, valves and all other electrical and mechanical equipment in good operating condition by following the manufacturer's recommendations. Repair as necessary.
- Maintain grounding rods and wiring for all electrical equipment in good condition.
- Inspect haul roads and approaches to and from the waste storage facility frequently to determine the need for stabilizing materials.
- A thorough inspection of pond liners and concrete sumps, pits, walls, ramps, and floors for damage, separation and/or cracks should be made each time the pond is emptied. Repair any damage prior to refilling the pond.
- Do not dispose of dead animals, greases, syringes, or other non-animal waste products in the facility.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human or livestock entry.

- Annually inspect pond for damage from normal use. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function. Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and outlets after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the embankment. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and paint.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.
- Apply insecticides for insect control as per manufacturer's recommendations and precautions, as needed.
- Operate system in a manner to minimize odors and air drift.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WASTE TREATMENT LAGOON.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

360 – CLOSURE OF WASTE IMPOUNDMENTS

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained closed waste impoundments project is an asset to your farm. This project was designed and installed to protect the quality of surface water and groundwater resources, to eliminate a safety hazard for humans and livestock and to safeguard the public health.

The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain appropriate warning signs.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human, vehicle or livestock entry. Repair and replace as necessary.
- Inspect project site yearly and fill areas where settlement is adversely affecting drainage and land use.
- Add soil amendments to soils that cannot support adequate vegetation or replace them with suitable soil material.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.
- Inspect drainage structures and channels. Remove any obstructions to keep structures and channels clean and functional. Take corrective actions to address any erosion that occurs.
- Visually inspect grazed land. Take corrective actions to address any erosion that occurs. Seek the advice of the local NRCS for proper grazing practices to eliminate any future erosion.

- Inspect project area after heavy rains. Promptly repair any damage. Fill rills and gullies that occur and re-vegetate.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

If the closed waste impoundment is converted to another use, operation and maintenance shall be in accordance with the NRCS conservation practice standard for the intended purpose.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR CLOSED WASTE IMPOUNDMENTS PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

362 – DIVERSION

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained diversion is an asset to the farm. This system was designed and installed to convey water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program. Additional permits may be required to perform this work.

GENERAL RECOMMENDATIONS

- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.
- Periodically check the elevation of fill and restore if necessary.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Periodically remove the sediment or soil that is deposited in the channel and restore to the original dimension.
- Remove all foreign debris that hinders system operation any obstructions or blockage of spillways, trash racks, or pipe inlets.
- All settlement or cracks in the soil should be investigated to determine the cause and immediately repaired.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other apparatuses.
- Remove woody vegetation from embankments.

SPECIFIC RECOMMENDATIONS FOR YOUR DIVERSION PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR DIVERSION PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

378 - POND

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained pond is an asset to your farm. This structure was designed and installed to provide storage to runoff water for beneficial use. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

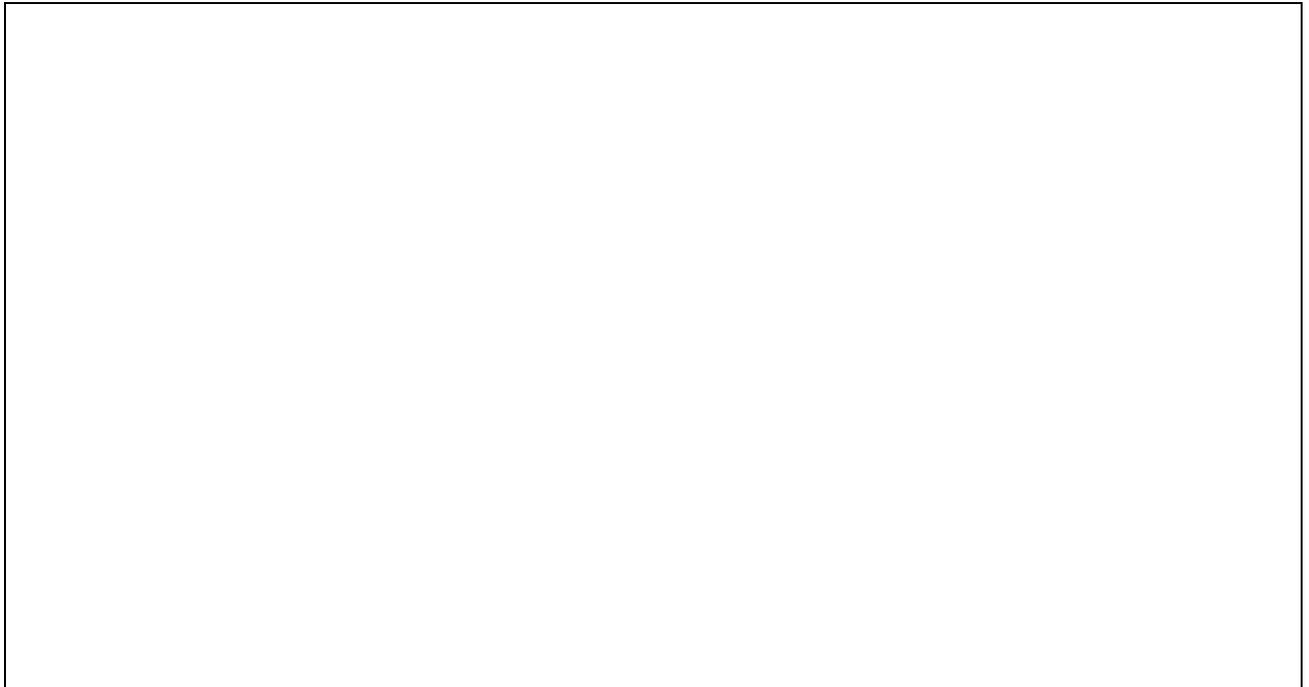
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program. Additional permits may be required to perform this work.

GENERAL RECOMMENDATIONS

- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function.
- Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the dam. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.

- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR POND.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

388 - IRRIGATION FIELD DITCH
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

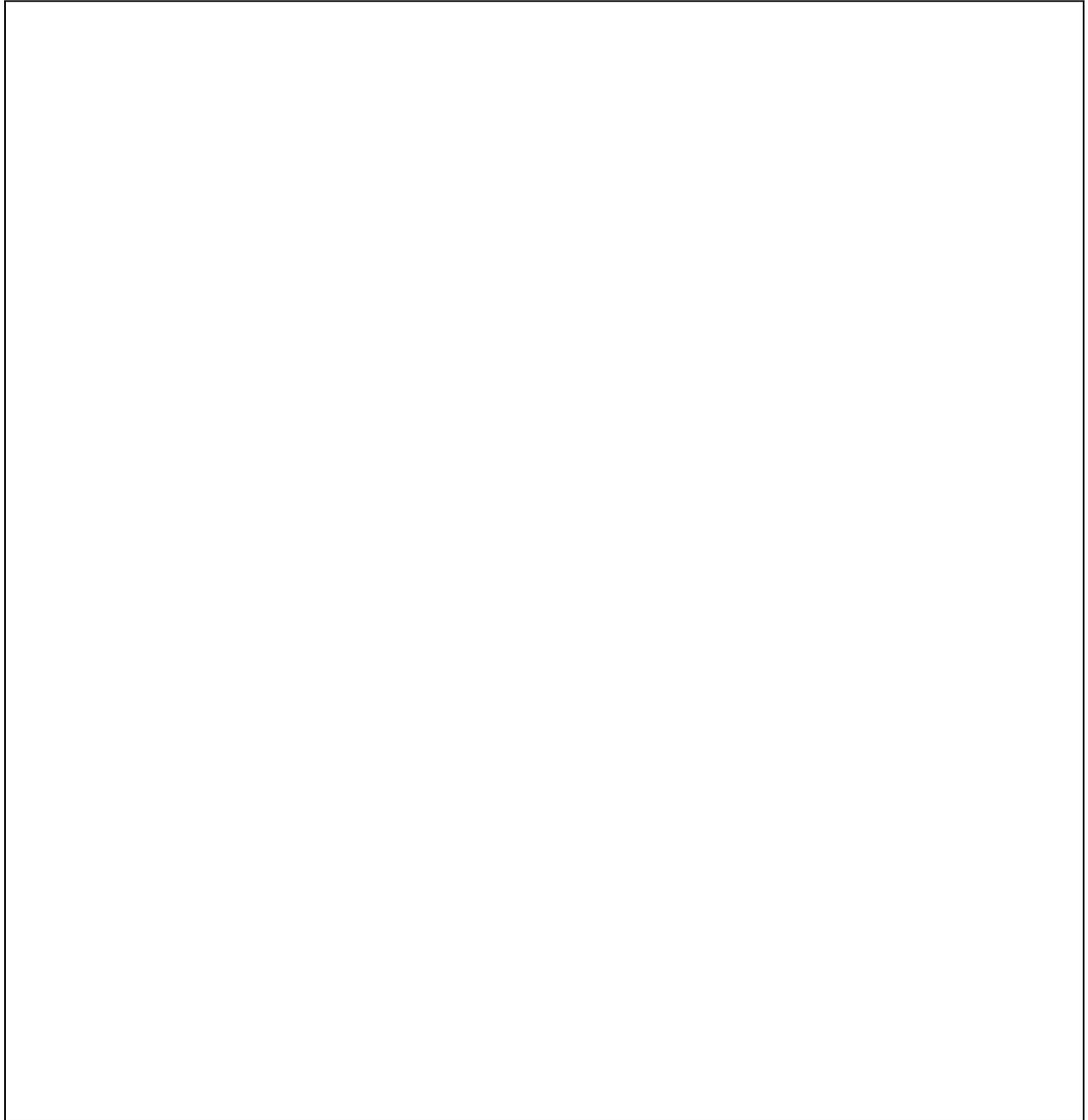
A properly operated and maintained irrigation field ditch is an asset to the farm. This ditch was designed and installed to convey water from the source of supply to a field or fields in a farm distribution system. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain cross section and gradient by controlling ditch erosion and bank sloughing.
- Immediately remove silt deposits, obstructions, or blockage of the drainage system that includes channel spillways, trash racks, inlets, or outlets.
- Maintain growth of planned vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control excessive growth. Avoid direct drainage water contact with herbicides.
- Remove all foreign debris that hinders system operation.
- Install and maintain fences to control livestock access when adjacent fields are used for pasture.
- Replace weathered or displaced rock riprap to constructed grade.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION FIELD DITCH



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION FIELD DITCH.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

393 – FILTER STRIP

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained vegetated filter strip is an asset to your farm. This vegetated filter strip was designed and installed to remove sediment and pollutants from runoff. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Remove all foreign debris that hinders system operation.
- Harvest treatment strip vegetation as appropriate to encourage dense growth, maintain an upright growth habit, and remove nutrients and other contaminants that are contained in the plant tissue.
- Control undesired weed species, especially state-listed noxious weeds.
- Inspect and repair treatment strips after storm events to fill in gullies, remove flow disrupting sediment accumulation, re-seed disturbed areas, and take other measures to prevent concentrated flow.
- Apply supplemental nutrients as needed to maintain the desired species composition and stand density of herbaceous vegetation.
- Maintain or restore the treatment strip as necessary by periodically grading when deposition jeopardizes its function, and then reestablishing to herbaceous vegetation.
- Routinely de-thatch and/or aerate treatment strips used for treating runoff from livestock holding areas in order to promote infiltration.
- Conduct maintenance activities only when the treatment strip is dry and moisture content in the surface soil layer will not allow compaction.
- Prevent grazing in treatment strips.

- Inspect filter strips regularly, especially following heavy rains. Inspect filter strips annually for damage due to normal use. Repair and reseed eroded areas immediately. Remove sediment deposits to maintain capacity of filter strip.
- Seeding shall be protected from concentrated flow and grazing until vegetation is established.
- Promptly repair all broken subsurface drain lines adjacent to or in the waterway.
- Maintain all sediment control measures in the contributing watershed to prevent sedimentation and the resulting loss of capacity.
- Filter strips in arid or semiarid regions that potentially could be affected by high salinity and/or sodicity (sodium content) should be monitored for excessive salt and sodium buildup. If found to be excessive, an appropriate corrective action shall be taken

SPECIFIC RECOMMENDATIONS FOR YOUR FILTER STRIP

Provide application rates (seasonal rates may differ).

Provide filter resting time.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR FILTER STRIP.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

395 – STREAM HABITAT IMPROVEMENT AND MANAGEMENT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly maintained stream habitat improvement and management project is an asset to your property. This practice was designed and installed to provide suitable habitat for desired aquatic species and diverse aquatic communities, to provide channel morphology and associated riparian characteristics important to desired aquatic species, and/or to provide aesthetic values and recreation opportunities associated with stream habitats such as angling and fish viewing. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

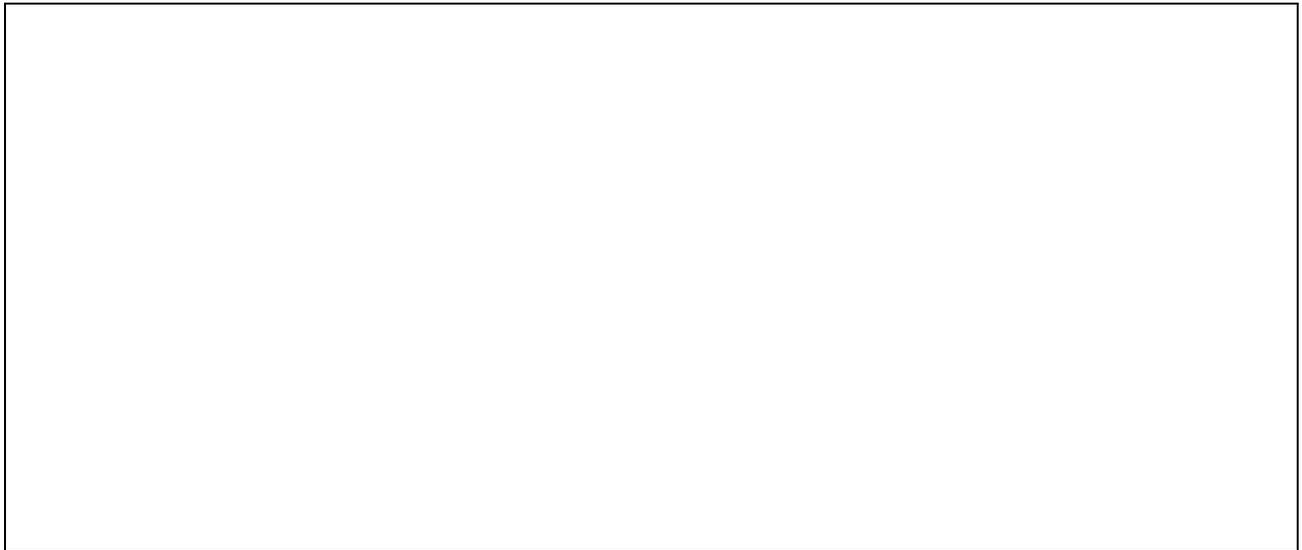
This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Inspect the integrity of fences, access roads, water access, crossings and other livestock control measures. Replace or repair as necessary.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Routine maintenance of vegetation includes removal of hazardous trees and branches that threaten safety, buildings, fences, as well as vegetation along road shoulders, trails and similar features. Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.

- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Remove excess debris that may accumulate on or in the immediate area any structure.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Control livestock access to the structure. Livestock may be injured. Repair damaged vegetation and earthfills or accelerated soil erosion caused by livestock.
- Maintain grade control structures necessary for stream bottom and bank stability.
- Maintain stream bank protection facilities, i.e. rock jetties, bank riprap, rock barbs, log revetments, etc.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

**SPECIFIC RECOMMENDATIONS FOR YOUR STREAM HABITAT IMPROVEMENT
AND MANAGEMENT PROJECT**



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR STREAM HABITAT IMPROVEMENT AND MANAGEMENT PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

396 – FISH PASSAGE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained fish passage project is an asset to the farm. This system was designed and installed to modify or remove barriers to fish passage. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program. Additional permits may be required to perform this work.

GENERAL RECOMMENDATIONS

- Inspect the integrity of fences, access roads, water access, crossings and other livestock control measures. Replace or repair as necessary.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Routine maintenance of vegetation includes removal of hazardous trees and branches that threaten safety, buildings, fences, as well as vegetation along road shoulders, trails and similar features. Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.

- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Remove excess debris that may accumulate on or in the immediate area any structure.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Control livestock access to the structure. Livestock may be injured. Repair damaged vegetation and earthfills or accelerated soil erosion caused by livestock.
- Maintain grade control structures necessary for stream bottom and bank stability.
- Maintain stream bank protection facilities, i.e. rock jetties, bank riprap, rock barbs, log revetments, etc.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

SPECIFIC RECOMMENDATIONS FOR YOUR FISH PASSAGE PROJECT

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR FISH PASSAGE PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

397 – AQUACULTURE PONDS

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained aquaculture pond is an asset to your farm. This structure was designed and installed to store water for commercial aquaculture purposes. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

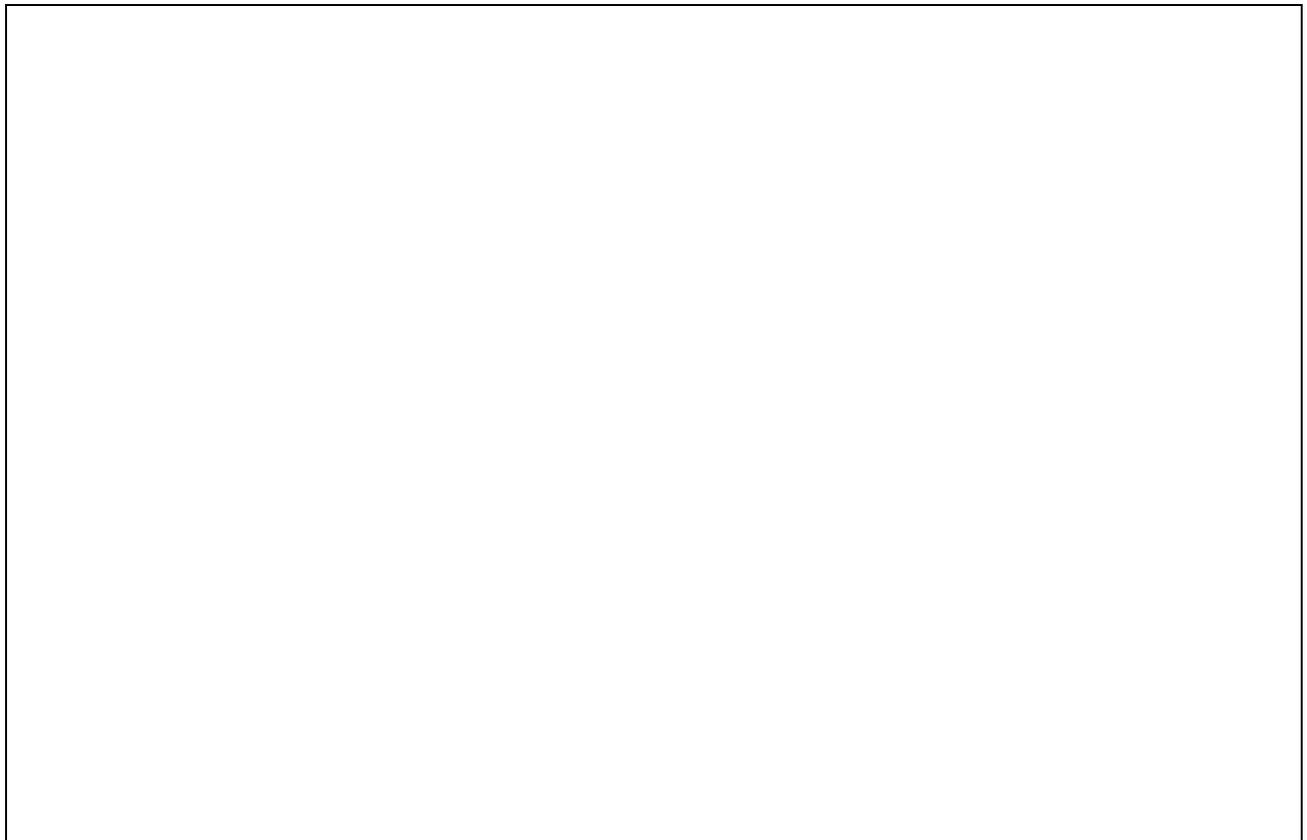
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function.
- Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the embankment. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.
- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.

- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spells, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR AQUACULTURE POND



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR AQUACULTURE POND.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

398 – FISH RACEWAY OR TANK
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained fish raceway or tank is an asset to your farm. This structure was designed and installed to provide high density fish production. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Periodically inspect the spillways and control gates for proper functioning for their ability to maintain the water level to design elevations. Immediately remove any blockage or obstructions in spillways.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spells, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and paint.

- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE

Provide recommended water temperature, dissolved oxygen content, pH, total hardness, carbon dioxide and salinity maximums or ranges.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR FISH RACEWAY OR TANK.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

402 – DAM

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained dam is an asset to the farm. This structure was designed and installed to store water for beneficial uses per the site specific design. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

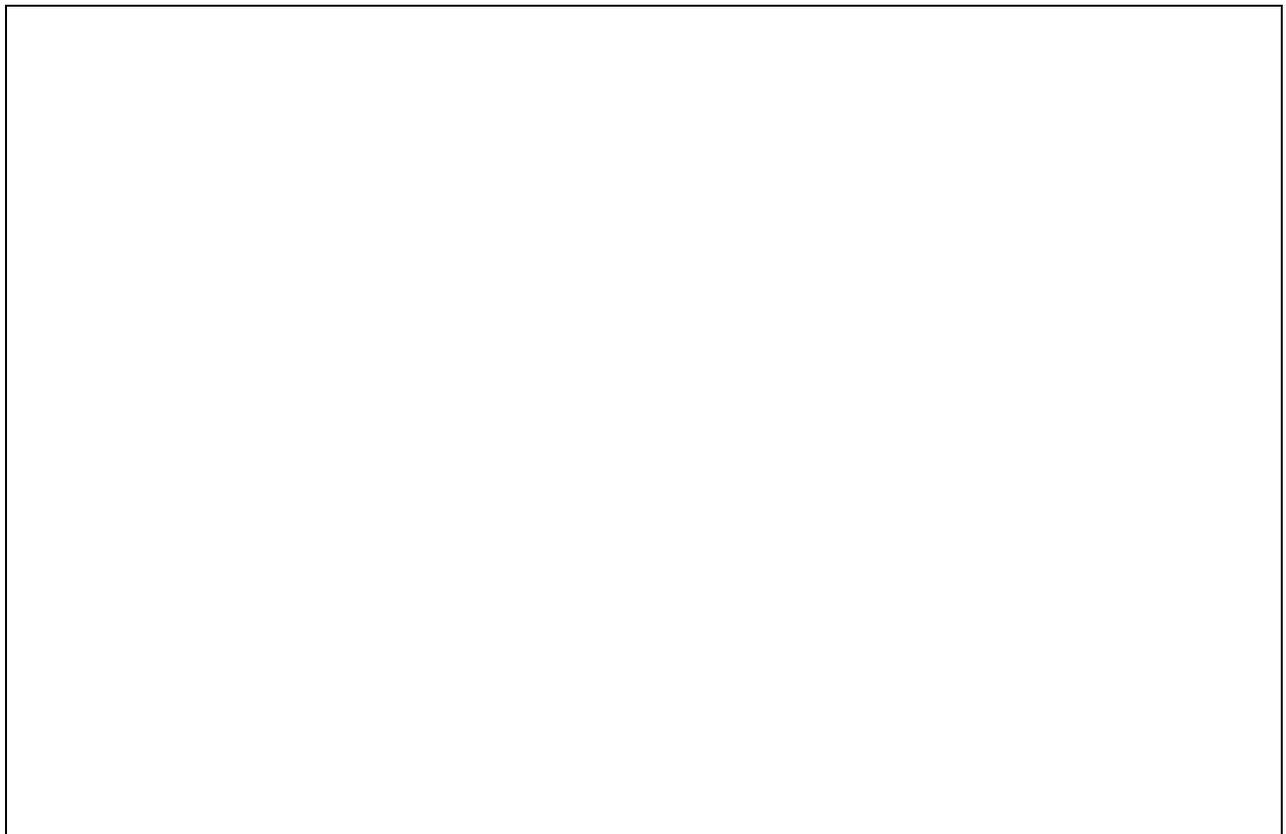
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program. Additional permits may be required to perform this work.

GENERAL RECOMMENDATIONS

- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function.
- Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the dam. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.
- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.

- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spells, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR DAM



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR DAM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

410 – GRADE STABILIZATION STRUCTURE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained grade stabilization structure is an asset to the farm. The grade stabilization structure was designed and installed to stabilize an eroding area and to safely convey runoff from the drainage area. Estimated life span of the installation is at least 10 years. The life of the structure can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic maintenance and may also require operational items to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program. Additional permits may be required to perform this work.

GENERAL RECOMMENDATIONS

- Avoid operating farm equipment close to the structure. Equipment can transfer vibration and weight to the structure that may be in excess of design and cause damage or failure.
- Removal of vegetation will accelerate soil erosion which can result in damage to earthfills or spillways. Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove woody vegetation from embankments.
- Control livestock access to the structure. They may be injured, damage protective vegetation and earthfills or accelerate soil erosion.
- Removal of debris accumulation at the structure, and immediately upstream or downstream. Debris accumulation can reduce hydraulic capacity and cause structural damage or failure during a runoff event.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. Repair if not functional. All screens and/or rodent guards shall also be kept in place and replaced if damaged or removed.
- Repair spalls, cracks and weathered areas in concrete surfaces.

- Repair or replace rusted or damaged metal and paint.
- Repair or replace all worn or damaged timber components.
- Periodically replace and relocate rock riprap either by machine or by hand. Repair or replace riprap rocks to the lines and grades of the original design.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR GRADE STABILIZATION STRUCTURE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

412 – GRASSED WATERWAY
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained grassed waterway is an asset to your farm. This grassed waterway was designed and constructed to safely convey runoff water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic maintenance and may also require operational items to maintain waterway capacity, vegetative cover and outlet stability. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Inspect grassed waterways regularly, especially following heavy rains. Inspect grassed waterways annually for damage due to normal use. Repair and reseed eroded areas immediately. Remove sediment deposits to maintain capacity of grassed waterway.
- Seeding shall be protected from concentrated flow and grazing until vegetation is established.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Avoid areas where forbs have been established when applying herbicides. Avoid crossing the waterway during spray operations and if not possible cross only with the spray equipment shut off.
- Periodic mowing or grazing may also be needed to control height.
- Remove sediment/tillage furrows or ridges along the edge of the waterway that hinders runoff water from flowing into the waterway.
- Maintain all parts of the irrigation system used for vegetative establishment and maintenance. Promptly repair any damage.
- Maintain constructed width by lifting or disengaging equipment properly. Avoid farming operations along the waterway which would hinder water entry. Fill and seed all rills or small gullies that form in the waterway.

- Promptly repair all broken subsurface drain lines adjacent to or in the waterway.
- Maintain all sediment control measures in the contributing watershed to prevent sedimentation and the resulting loss of capacity.
- Limit the traffic and do not use as a roadway, especially when the waterway is wet. Use care when crossing the grassed waterway to prevent tillage marks or wheel tracks and promptly repair if necessary.
- Limit livestock usage to vegetative growth periods when they will not damage the vegetative root system or compact or trample the soil.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Check all rock riprap sections or other grade control structures for accelerated weathering and displacement. Replace to original grades if necessary.
- Prescribed burning and mowing may be appropriate to enhance wildlife values, but must be conducted to avoid peak nesting seasons and reduced winter cover.

SPECIFIC RECOMMENDATIONS FOR YOUR GRASSED WATERWAY



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR GRASSED WATERWAY.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

423 – HILLSIDE DITCH

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

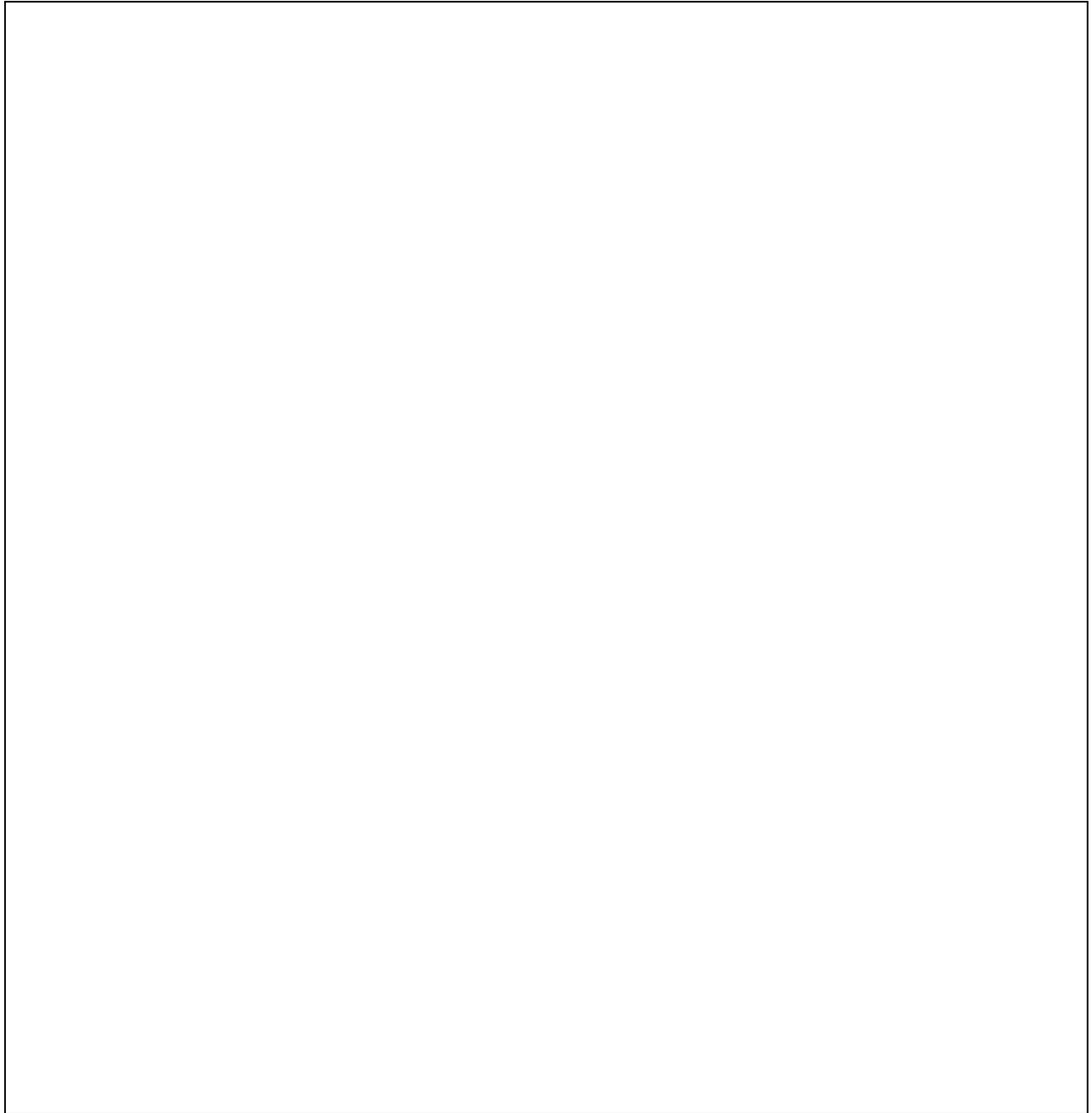
A properly operated and maintained hillside ditch is an asset to the farm. This project was designed and installed to control the flow of water on steep slopes and intended to minimize erosion and runoff. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain hillside ditch capacity, storage, supporting ridge height and outlets.
- Redistribute sediment build up. If possible, correct sediment source.
- Repair or replace damaged hillside ditch components.
- Remove debris, liter, and excess vegetation accumulation from ditches and outlet facilities.
- Support ridges, especially those with steep back slopes, can be very hazardous to humans and livestock. Maintain good vegetation on all slopes to help control erosion and stabilize slope conditions.
- Control vegetation, trees and brush with grazing and use of approved herbicides, or mechanical means.
- Provide for periodic inspections, especially immediately following storms providing a 10 year frequency or greater runoff. Prompt repair or replacement of damaged components is necessary.

SPECIFIC RECOMMENDATIONS FOR YOUR HILLSIDE DITCH

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide specific recommendations for their hillside ditch.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR HILLSIDE DITCH.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

428A – IRRIGATION WATER CONVEYANCE
PLAIN CONCRETE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

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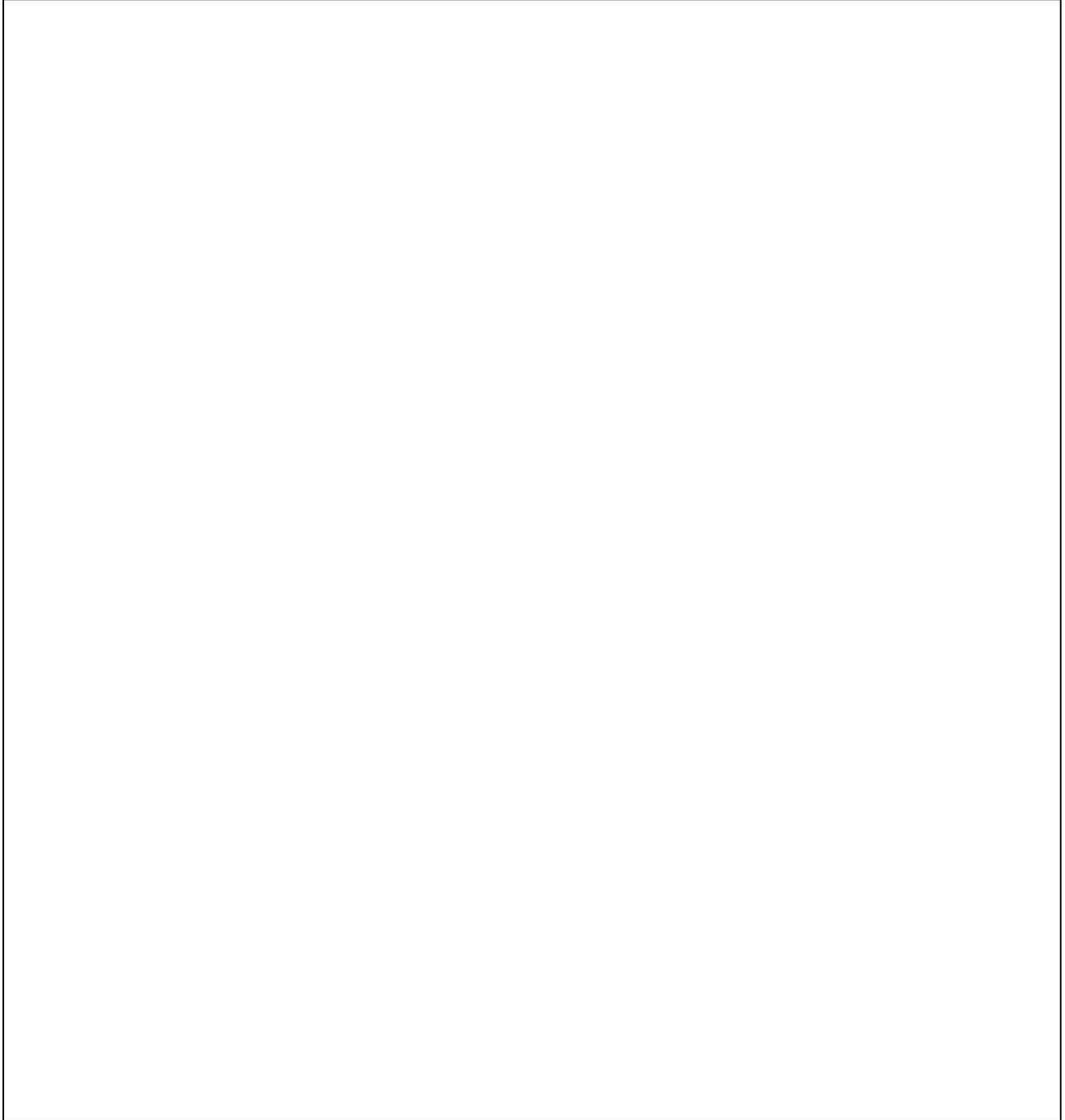
A properly operated and maintained lined irrigation ditch or canal is an asset to the farm. This lining was designed and installed to reduce water loss in the irrigation delivery and/or head ditches. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain adequate drainage of foundations.
- Maintain widths of soil berms or banks. Avoid use of tillage equipment that accelerates soil removal.
- Drain all lined ditches and canals when not being used. Immediately repair any cracks or breaks in the lining, and if settlement is present, investigate cause before repair.
- If livestock are present, prevent their access to linings and provide other drinking water facilities.
- Remove any blockage (sediments, debris, foreign material etc.) that restrict flow capacity.
- Immediately repair any vandalism, vehicular or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation and perennials from areas adjacent to lining,
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Avoid crossings of equipment or vehicles except at designated areas.

SPECIFIC RECOMMENDATIONS FOR YOUR LINED IRRIGATION CANAL OR DITCH



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR LINED IRRIGATION CANAL OR DITCH.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**428B – IRRIGATION WATER CONVEYANCE
FLEXIBLE MEMBRANE DITCH AND CANAL LINING**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained lined irrigation ditch or canal is an asset to the farm. This lining was designed and installed to reduce water loss in the irrigation delivery and/or head ditches. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain adequate drainage of foundations.
- Maintain widths of soil berms or banks. Avoid use of tillage equipment that accelerates soil removal.
- Drain all lined ditches and canals when not being used. Immediately repair any cracks or breaks in the lining, and if settlement is present, investigate cause before repair.
- If livestock are present, prevent their access to linings and provide other drinking water facilities.
- Remove any blockage (sediments, debris, foreign material etc.) that restrict flow capacity.
- Immediately repair any vandalism, vehicular or livestock damage.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from areas adjacent to lining,
- Equipment is permitted only on liners with a minimum soil cover of 12 inches. If equipment is allowed on a liner covered with a minimum 12 inches of soil, avoid excessive speeds and sharp turns.

- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR LINED IRRIGATION CANAL OR DITCH



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR LINED IRRIGATION CANAL OR DITCH.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**428C – IRRIGATION WATER CONVEYANCE
GALVANIZED STEEL DITCH AND CANAL LINING**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained lined irrigation ditch or canal is an asset to the farm. This lining was designed and installed to reduce water loss in the irrigation delivery and/or head ditches. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain adequate drainage of foundations.
- Maintain widths of soil berms or banks. Avoid use of tillage equipment that accelerates soil removal.
- Drain all lined ditches and canals when not being used. Immediately repair any cracks or breaks in the lining, and if settlement is present, investigate cause before repair.
- If livestock are present, prevent their access to linings and provide other drinking water facilities.
- Remove any blockage (sediments, debris, foreign material etc.) that restrict flow capacity.
- Immediately repair any vandalism, vehicular or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation and perennials from areas adjacent to lining,
- Equipment is permitted only on liners with a minimum soil cover of 12 inches. If equipment is allowed on a liner covered with a minimum 12 inches of soil, avoid excessive speeds and sharp turns.

- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR LINED IRRIGATION CANAL OR DITCH



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR LINED IRRIGATION CANAL OR DITCH.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

428D – IRRIGATION WATER CONVEYANCE
PNEUMATICALLY-APPLIED MOTOR DITCH AND CANAL LINING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained lined irrigation ditch or canal is an asset to the farm. This lining was designed and installed to reduce water loss in the irrigation delivery and/or head ditches. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

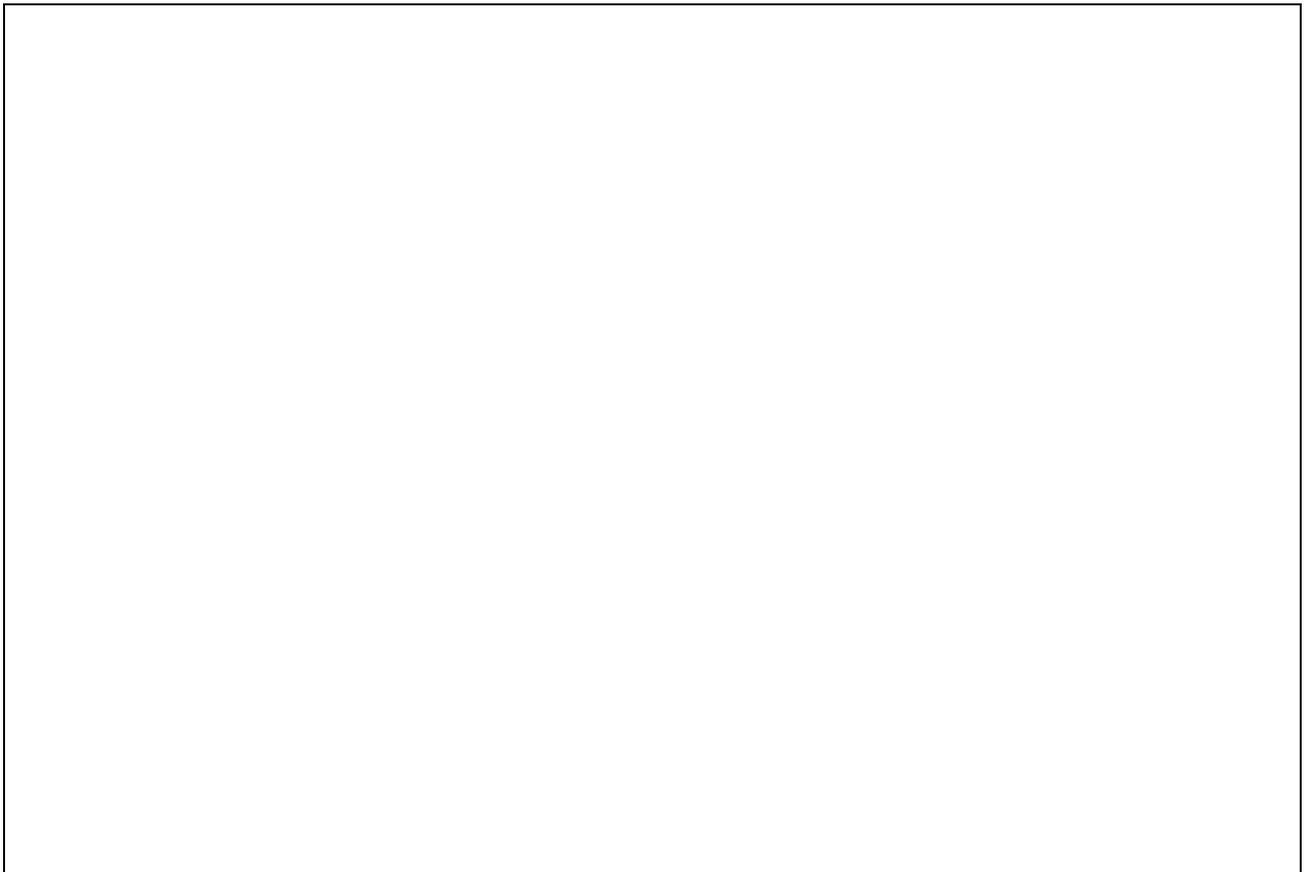
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain adequate drainage of foundations.
- Maintain widths of soil berms or banks. Avoid use of tillage equipment that accelerates soil removal.
- Drain all lined ditches and canals when not being used. Immediately repair any cracks or breaks in the lining, and if settlement is present, investigate cause before repair.
- If livestock are present, prevent their access to linings and provide other drinking water facilities.
- Remove any blockage (sediments, debris, foreign material etc.) that restrict flow capacity.
- Immediately repair any vandalism, vehicular or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from areas adjacent to lining,
- Equipment is permitted only on liners with a minimum soil cover of 12 inches. If equipment is allowed on a liner covered with a minimum 12 inches of soil, avoid excessive speeds and sharp turns.

- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect embankments for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR LINED IRRIGATION CANAL OR DITCH



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR LINED IRRIGATION CANAL OR DITCH.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**430AA – IRRIGATION WATER CONVEYANCE
ALUMINUM TUBING PIPELINE**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**430CC – IRRIGATION WATER CONVEYANCE
NONREINFORCED CONCRETE PIPELINE**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**430DD – IRRIGATION WATER CONVEYANCE
HIGH-PRESSURE, UNDERGROUND, PLASTIC PIPE**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

430EE – IRRIGATION WATER CONVEYANCE
LOW-PRESSURE, UNDERGROUND, PLASTIC PIPELINE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

430FF – IRRIGATION WATER CONVEYANCE

STEEL PIPELINE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

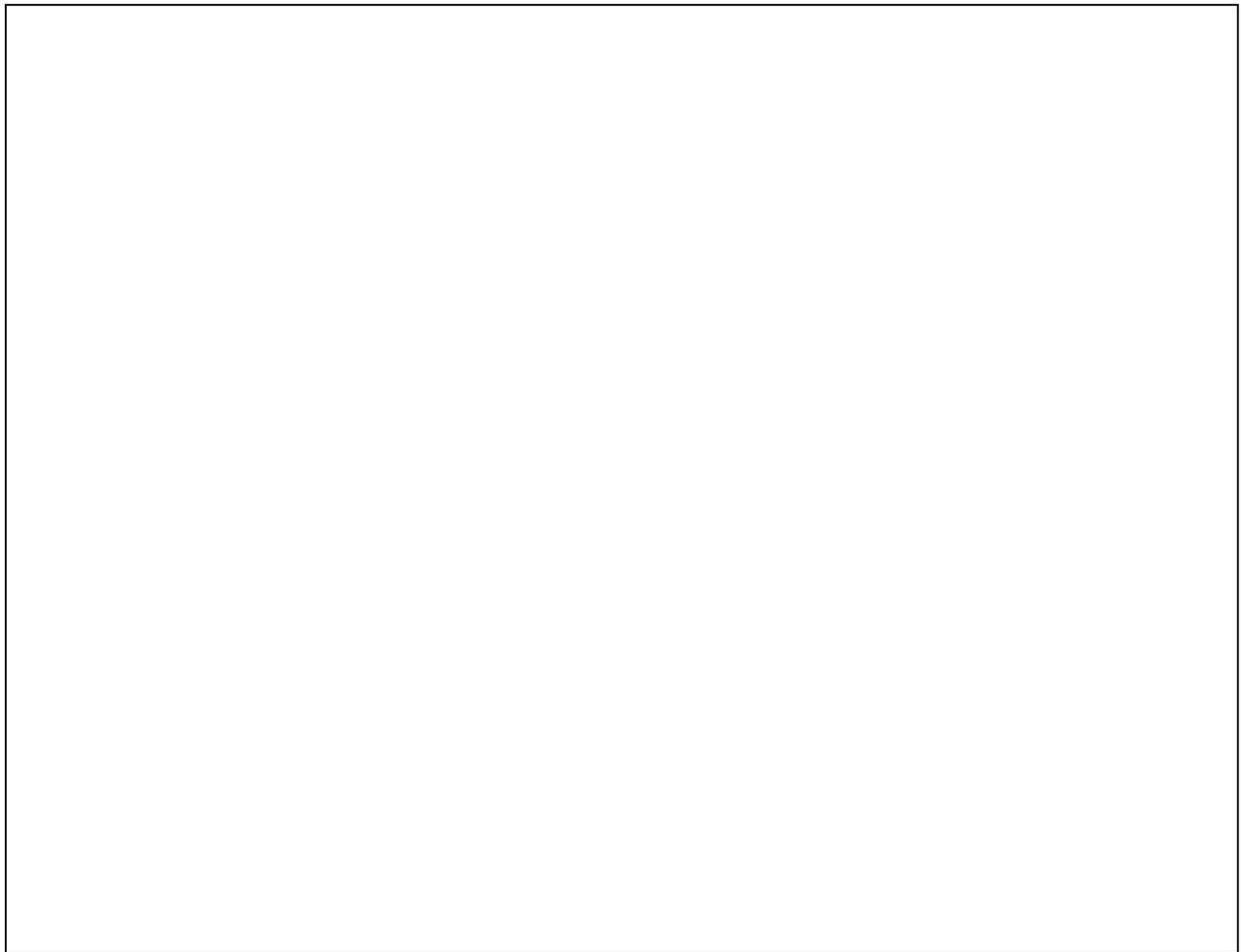
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Check exterior coatings on above-ground and on-ground pipeline installations. Repair any damage immediately.
- Where sacrificial anodes are used for cathodic protection, check their condition on a regular basis as outlined in special O & M requirements. Replace as necessary.
- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**430GG – IRRIGATION WATER CONVEYANCE
REINFORCED PLASTIC MORTAR PIPELINE**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

430HH – IRRIGATION WATER CONVEYANCE

RIGID GATED PIPELINE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

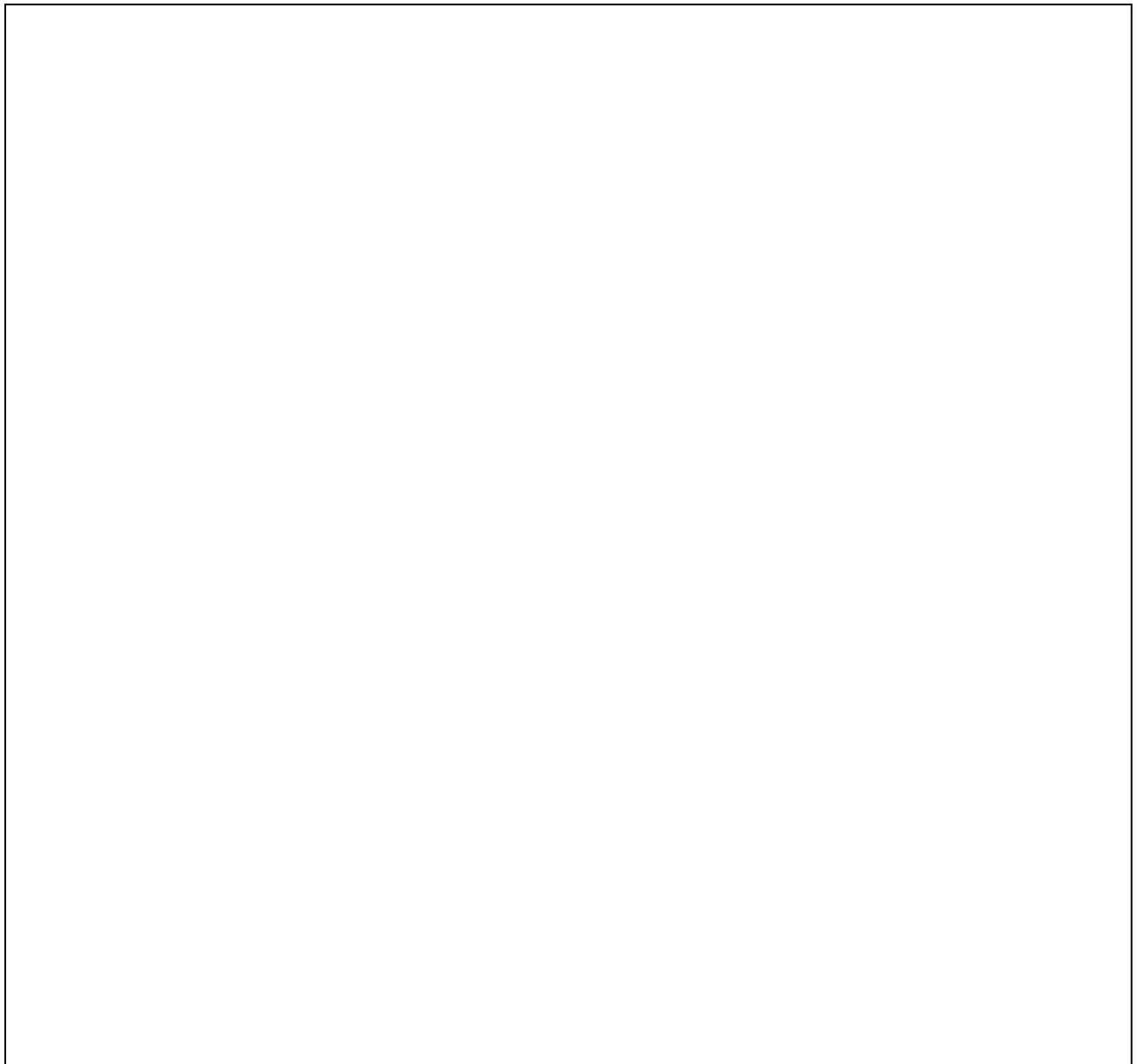
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

**430II – IRRIGATION WATER CONVEYANCE
CORREGATED METAL PIPELINE**

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation pipeline is an asset to your farm. This irrigation pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.

- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION PIPELINE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

432 – DRY HYDRANT
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained dry hydrant is an asset to your farm. This project was designed and installed to improve water quality, eliminate unsightly residues and odors, reduce erosion, and restore areas to beneficial use.

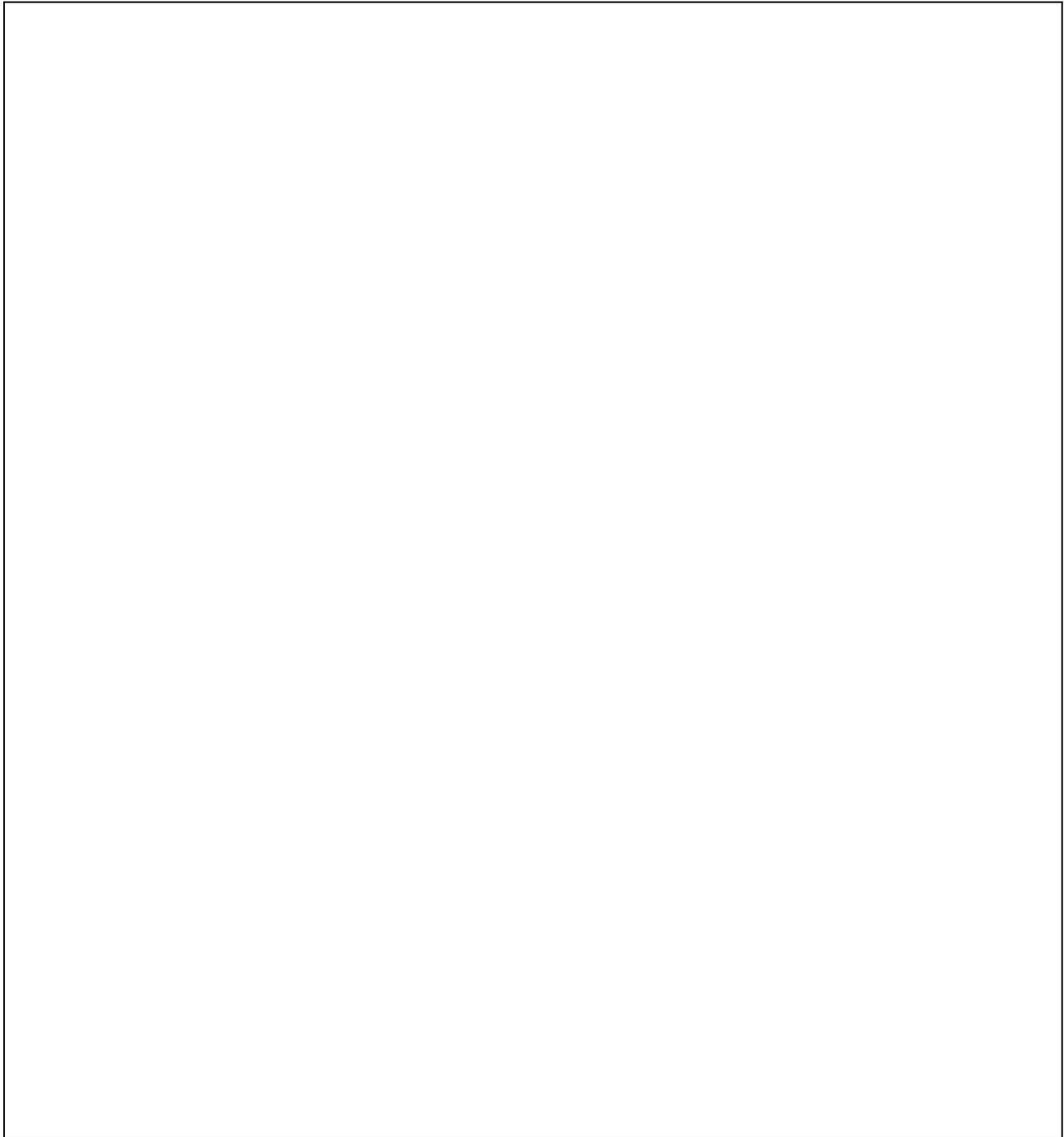
The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Mow the dry hydrant access area regularly to keep the area readily available for emergency use.
- Back-flush the dry hydrant each spring and fall to remove any silt or debris that accumulates on the screen.
- Following back-flushing of the system, pumper testing of the dry hydrant at the maximum designed flow rate shall be done at least annually to verify site usability.
- Remove and dispose of all silt, debris, aquatic growth, or other interference that may limit the full operation of the dry hydrant.
- Clear the site of all obstructions to access or operation of the dry hydrant.
- Check the intake screen at least once every five years to identify any sediment build up and to provide information for a clean-out operation or for aquatic growth control needs. Repair or replace the screen if necessary.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.

SPECIFIC RECOMMENDATIONS FOR YOUR DRY HYDRANT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR DRY HYDRANT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

436 – IRRIGATION STORAGE RESERVOIR
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained Irrigation Storage Reservoir is an asset to your farm. This structure was designed and installed to store water for short-term regulation per the site specific design. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require performance of periodic maintenance and operational items to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function.
- Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the dam. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.
- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.

- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION STORAGE RESERVOIR.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

441 – IRRIGATION SYSTEM - MICROIRRIGATION

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained microirrigation system is an asset to the farm. This irrigation system was designed and installed to efficiently apply irrigation water directly to the root zone of the plants to maintain soil moisture without excessive water loss, erosion, reduction in water quality or salt accumulation. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

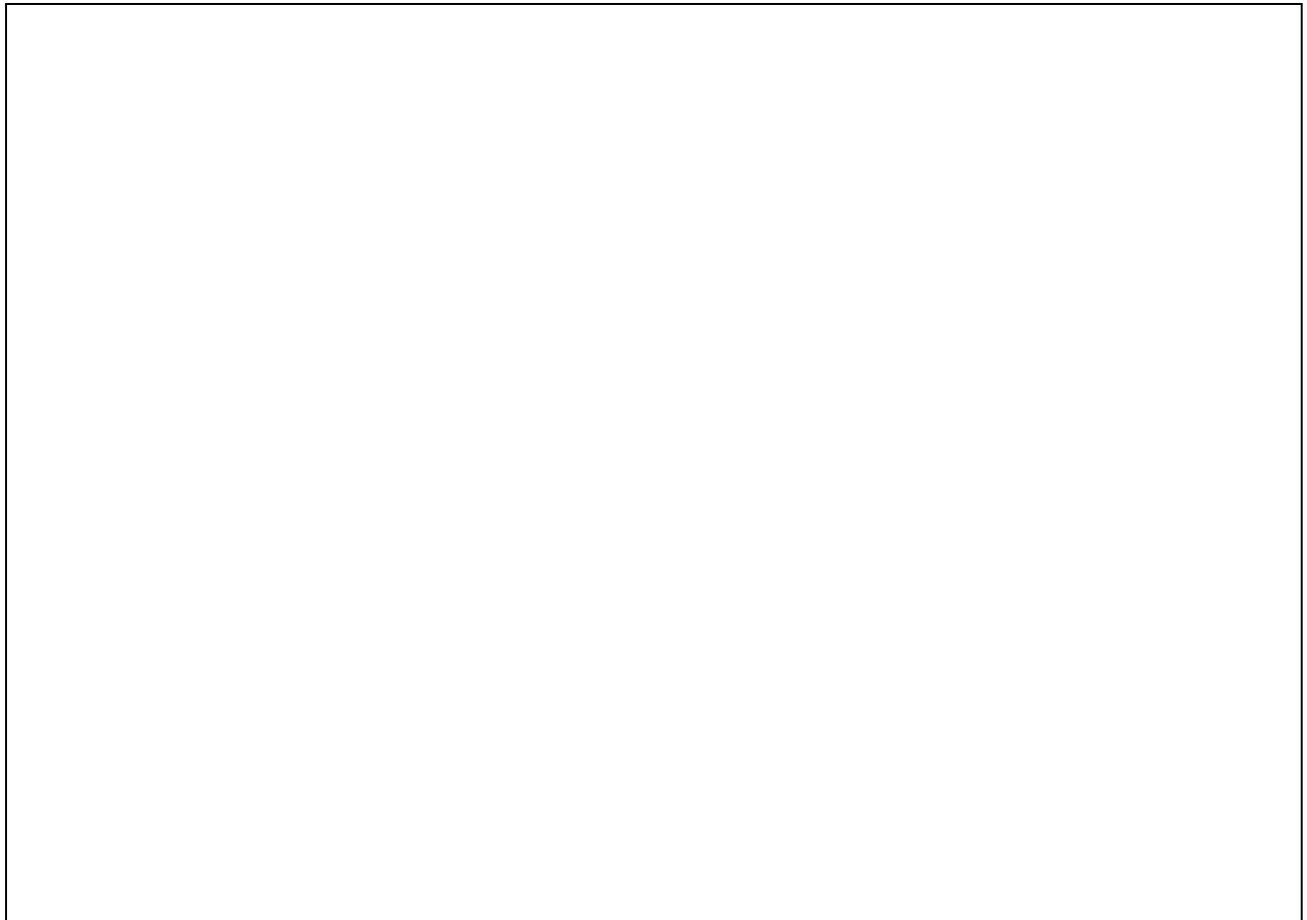
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Only operate the system when needed to furnish water for plant growth, salt management or to store moisture within the rooting depth of the plant. Monitor crops regularly noting areas of moisture stress and repair or adjust system operation as needed.
- Operate the system at the pressure, discharge rate, speed, duration and frequency as designed.
- Periodically examine each sprinkler and spray head, etc., for proper operation. Clean plugged nozzles, and replace if defective and worn. Use shank end of steel drill bits to check diameters.
- Check to make sure that all connections are watertight and all valves are working properly.
- Promptly repair all leaks in delivery facilities, by replacing valves, fittings, gaskets, worn or damaged parts.
- During non-seasonal use, place appurtenances in an area where they will not be damaged but are secure, if necessary.
- Promptly repair all leaks, by replacing gaskets or worn parts.

- Maintain all pumps, agitators, piping, valves and other electrical and mechanical equipment in good operating condition following the manufacturer's recommendations.
- Maintain all screens, filters, valves, timers and other electrical and mechanical equipment in good operating condition following manufacturer's recommendations. Drain and protect from freezing, as necessary.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage. Do not allow livestock near equipment during operation.

SPECIFIC RECOMMENDATIONS FOR YOUR MICROIRRIGATION SYSTEM



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR MICROIRRIGATION SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

442 – IRRIGATION SYSTEM - SPRINKLER

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained sprinkler system is an asset to the farm. This irrigation system was designed and installed to efficiently and uniformly apply irrigation water to maintain adequate soil moisture without causing excessive water loss, erosion or reduced water quality. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Only operate the system when needed to furnish water for plant growth, salt management or to store moisture within the rooting depth of the plant. Monitor crops regularly noting areas of moisture stress and repair or adjust system operation as needed.
- Operate the system at the pressure, discharge rate, speed, duration and frequency as designed.
- Periodically examine each sprinkler and spray head, etc., for proper operation. Clean plugged nozzles, and replace if defective and worn. Use shank end of steel drill bits to check diameters.
- Check to make sure that all connections are watertight and all valves are working properly.
- Promptly repair all leaks in delivery facilities, by replacing valves, fittings, gaskets, worn or damaged parts.
- During non-seasonal use, place appurtenances in an area where ~~it~~ they will not be damaged but are secure, if necessary.
- Promptly repair all leaks, by replacing gaskets or worn parts.
- Maintain all pumps, agitators, piping, valves and other electrical and mechanical equipment in good operating condition following the manufacturer's recommendations.

- Maintain all screens, filters, valves, timers and other electrical and mechanical equipment in good operating condition following manufacturer's recommendations. Drain and protect from freezing, as necessary.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage. Do not allow livestock near equipment during operation.

SPECIFIC RECOMMENDATIONS FOR YOUR SPRINKLER IRRIGATION SYSTEM



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR SPRINKLER IRRIGATION SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

443 – IRRIGATION SYSTEM – SURFACE AND SUBSURFACE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation system is an asset to the farm. This irrigation system was designed and installed to efficiently convey and distribute irrigation water to meet the needs of the crops without causing erosion or runoff. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Only operate the system when needed to furnish water for plant growth, salt management or to store moisture within the rooting depth of the plant. Monitor crops regularly noting areas of moisture stress and repair or adjust system operation as needed.
- Operate the system at the pressure, discharge rate, speed, duration and frequency as designed.
- Promptly repair all leaks in delivery facilities, by replacing valves, fittings, gaskets, worn or damaged parts.
- During non-seasonal use, place appurtenances in an area where ~~it~~ they will not be damaged but are secure, if necessary.
- Promptly repair all leaks, by replacing gaskets or worn parts.
- Ensure that runoff water is promptly removed by a drainage or tailwater recovery system.
- Maintain all pumps, agitators, piping, valves and other electrical and mechanical equipment in good operating condition following the manufacturer's recommendations.

- Maintain all screens, filters, valves, timers and other electrical and mechanical equipment in good operating condition following manufacturer's recommendations. Drain and protect from freezing, as necessary.
- Maintain system components such as ditches, pipes, structures, etc.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage. Do not allow livestock near equipment during operation.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION SYSTEM



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

447 – IRRIGATION SYSTEM – TAILWATER RECOVERY

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

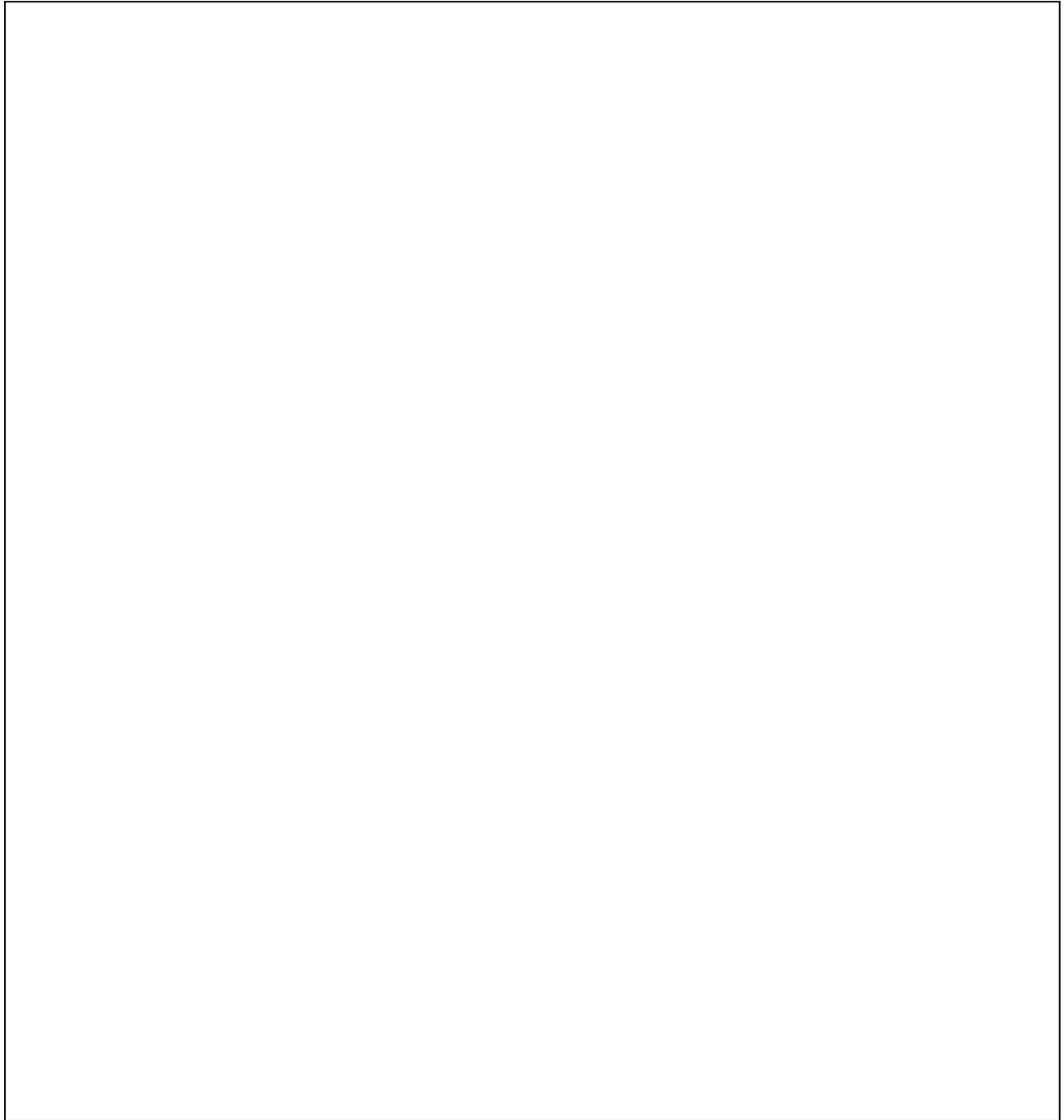
A properly operated and maintained irrigation tailwater recovery system is an asset to the farm. This irrigation system was designed and installed to collect, store and transport irrigation water for reuse in a farm irrigation distribution system. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Control field soil erosion to help minimize sediment deposits in tailwater facilities.
- Minimize erosion in collection ditches and pipeline inlets. Controlling erosion helps minimize sediment deposits in storage facilities, sumps, and low velocity pipelines and ditches.
- Periodically check all above ground pipeline connections and structures for proper operation, including leaks. A 10 gal/min leak totals over 1400 gal/day and 10,000 gal/week. Repair leaks immediately. Determine cause of cracks and structure displacement, and repair as needed.
- Periodically clean trash racks, sediment traps, sumps, reservoirs, and ditches to maintain design capacity and efficiency.
- Prevent, and if necessary, remove crop residue and foreign debris from entering water conveyance facilities. Properly cleaned and maintained screens help minimize required system maintenance.
- Perform motor and engine maintenance according to a fixed schedule based on hours of operation, days, weekly, etc.; in addition to “as needed” maintenance based on visual observation or audio sensing.
- Maintain pumps, structures, storage facilities, conveyance pipelines and ditches in good operating condition by performing Operation and Maintenance per site-specific recommendations for each component.

SPECIFIC RECOMMENDATIONS FOR YOUR IRRIGATION TAILWATER RECOVERY SYSTEM

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION TAILWATER RECOVERY SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

450 – ANIONIC POLYACRYLAMIDE (PAM) EROSION CONTROL

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained PAM application system is an asset to the farm. This PAM application system was designed and installed to apply irrigation water, at an increased distribution uniformity, to meet the water requirements of the crops and conserve water. The estimated life span of this installation is approximately 1 irrigation season. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- All equipment will be operated and maintained to provide the uniform application rates as listed in the standard or on the Practice Requirements Sheet.
- Monitor the irrigation and discontinue applying PAM when the advance phase has been completed with no sufficient soil movement.
- Check to make sure all discharge devices, injectors, valves, timers, etc. are functional and set at the proper operating condition
- Maintain all screens, filters, valves, timers and other electrical and mechanical equipment in good operating condition following manufacturer's recommendations.
- Do not over apply PAM. Excessive application of PAM can lower infiltration rate or suspend solids in water, rather than promote settling.
- Safety precautions as listed on the label, and industry guidelines shall be followed. PAM dust can cause choking and difficult breathing. A mask shall be used by persons handling and mixing PAM

- Anionic PAM mixtures combined with water are very slippery and can be a safety hazard. Care must be taken to prevent spills of anionic PAM onto paved surfaces.
- All equipment used to mix and to apply PAM shall be rinsed thoroughly with water to avoid formation of intractable PAM residues.
- Purchase only the amount of PAM needed for a given growing season, as full potency shelf-life is only about one year. Some loss of effectiveness may be noted when using PAM that is more than one year old.
- Any PAM to be stored should be stored in cool, dry places away from direct sunlight to avoid PAM breakdown and loss of potency. Avoid freezing of liquid forms of PAM. Emulsified concentrates may need mixing before injection or dilution as PAM and the carrier may separate.
- If spills occur, avoid traffic in the spill area since high concentrations of PAM are extremely slippery. Clean thoroughly with sand, sawdust, or the like before attempting to wash down with water.

SPECIFIC RECOMMENDATIONS FOR YOUR PAM APPLICATION



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR PAM PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

453 – LAND RECLAMATION, LANDSLIDE TREATMENT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained landslide treatment project is an asset to your farm. This project was designed and installed to protect the quality of surface water and groundwater resources, to eliminate a safety hazard for humans and livestock and to safeguard the public health.

The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

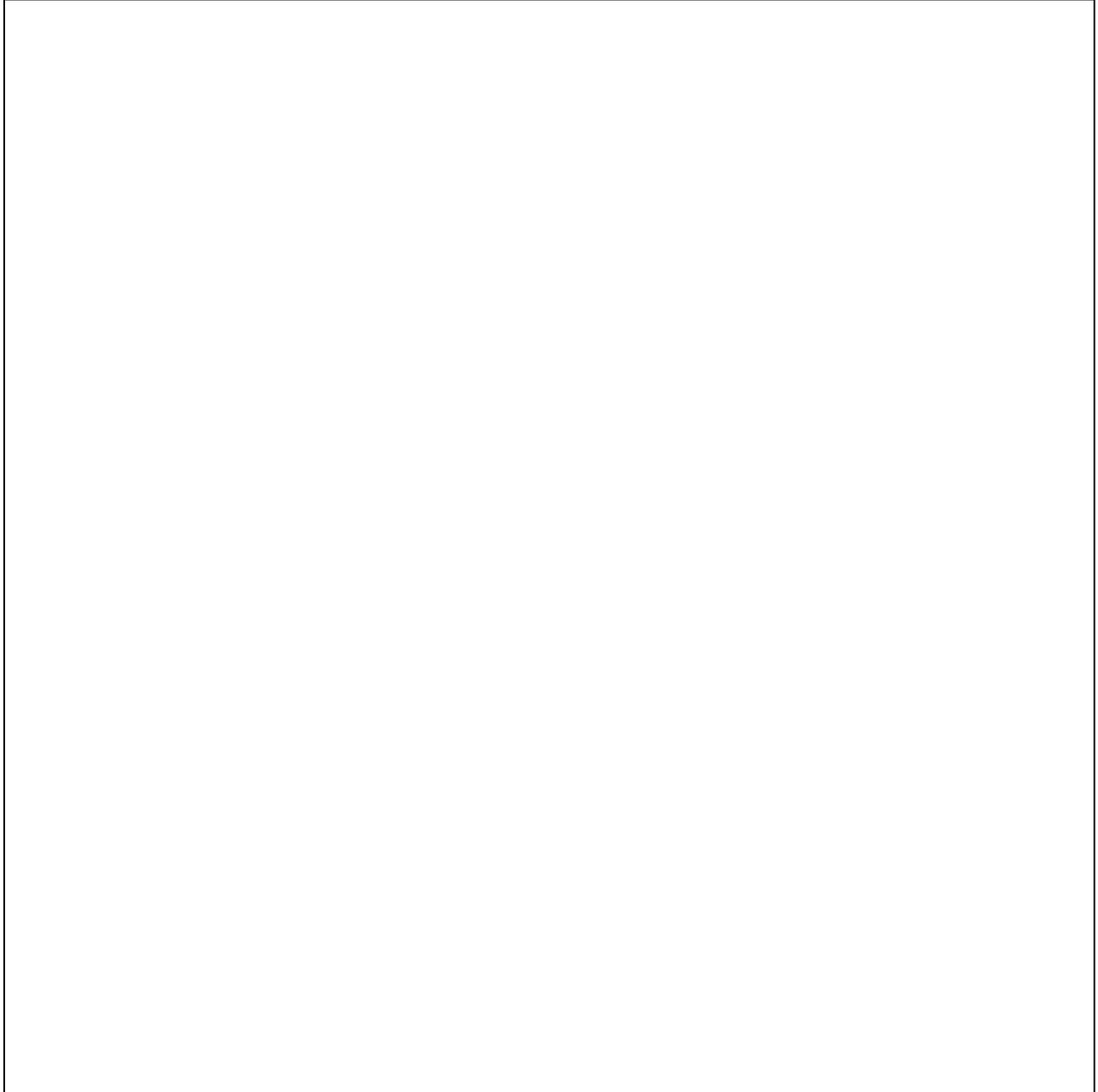
This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain appropriate warning signs.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human, vehicle or livestock entry. Repair and replace as necessary.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.
- Inspect drainage structures and channels. Remove any obstructions to keep structures and channels clean and functional. Take corrective actions to address any erosion that occurs.
- Inspect project area after heavy rains. Promptly repair any damage. Fill rills and gullies that occur and re-vegetate.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Maintain drainage systems in a functional condition. Repair or replace any clogged pipes. Take corrective actions to address any erosion that occurs.
- Immediately repair any vandalism, vehicular, or livestock damage.

- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR LANDSLIDE TREATMENT PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

455 – LAND RECLAMATION, TOXIC DISCHARGE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained toxic discharge project is an asset to your farm. This project was designed and installed to improve water quality, eliminate unsightly residues and odors, reduce erosion, and restore areas to beneficial use.

The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain appropriate warning signs.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human, vehicle or livestock entry. Repair and replace as necessary.
- Inspect project site yearly and fill areas where settlement is adversely affecting drainage and land use.
- Add soil amendments to soils that cannot support adequate vegetation or replace them with suitable soil material.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.
- Inspect drainage structures and channels. Remove any obstructions to keep structures and channels clean and functional. Take corrective actions to address any erosion that occurs.
- Maintain drainage systems in a functional condition. Repair or replace any clogged pipes. Take corrective actions to address any erosion that occurs.
- Repair spells, cracks and weathered areas in concrete surfaces.

- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Visually inspect grazed land. Take corrective actions to address any erosion that occurs. Seek the advice of the local NRCS for proper grazing practices to eliminate any future erosion.
- Inspect project area after heavy rains. Promptly repair any damage. Fill rills and gullies that occur and re-vegetate.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

Provide baseline water quality data for destination system, where appropriate (seasonal data may differ).

Specify frequency and types of water quality testing.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR TOXIC DISCHARGE PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

457 – MINE SHAFT AND ADIT CLOSING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained mine shaft and adit closing project is an asset to your farm. This project was designed and installed to fill or seal mine shafts and other openings to reduce subsidence problems, hazards to humans and animals, the emission of hazardous gases, and the pollution of surface and ground water, to close openings for human safety while maintaining access for wildlife species and/or to close openings for the protection of cultural resources.

The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain appropriate warning signs.
- All fences, railings, barriers fences and/or warning signs shall be maintained to prevent unauthorized human, vehicle or livestock entry. Repair and replace as necessary.
- Inspect project site yearly and fill areas where settlement is adversely affecting drainage and land use. Re-vegetate as necessary.
- Add soil amendments to soils that cannot support adequate vegetation or replace them with suitable soil material.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.
- Inspect project area after heavy rains. Promptly repair any damage. Fill rills and gullies that occur and re-vegetate.

- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR MINE SHAFT AND ADIT CLOSING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

464 – IRRIGATION LAND LEVELING
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

Land that is leveled and maintained is an asset to the farm. Land leveling was designed and installed to permit uniform and efficient application of irrigation water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Avoid use of tillage equipment that leaves ridges or depressions that cannot be removed by subsequent tillage operations.
- Periodically use a planing operation to reestablish the installed field gradient. High efficiency surface irrigation systems on cultivated ground require re-leveling or "touch up" every growing season. With on-farm laser controlled equipment, re-leveling every year has been shown to be approximately the same cost as re-leveling every third or fourth year. Increased irrigation uniformity is a benefit of more frequent re-establishment of planned leveling grades and elevations.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS IRRIGATION LAND LEVELING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

466 – LAND SMOOTHING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

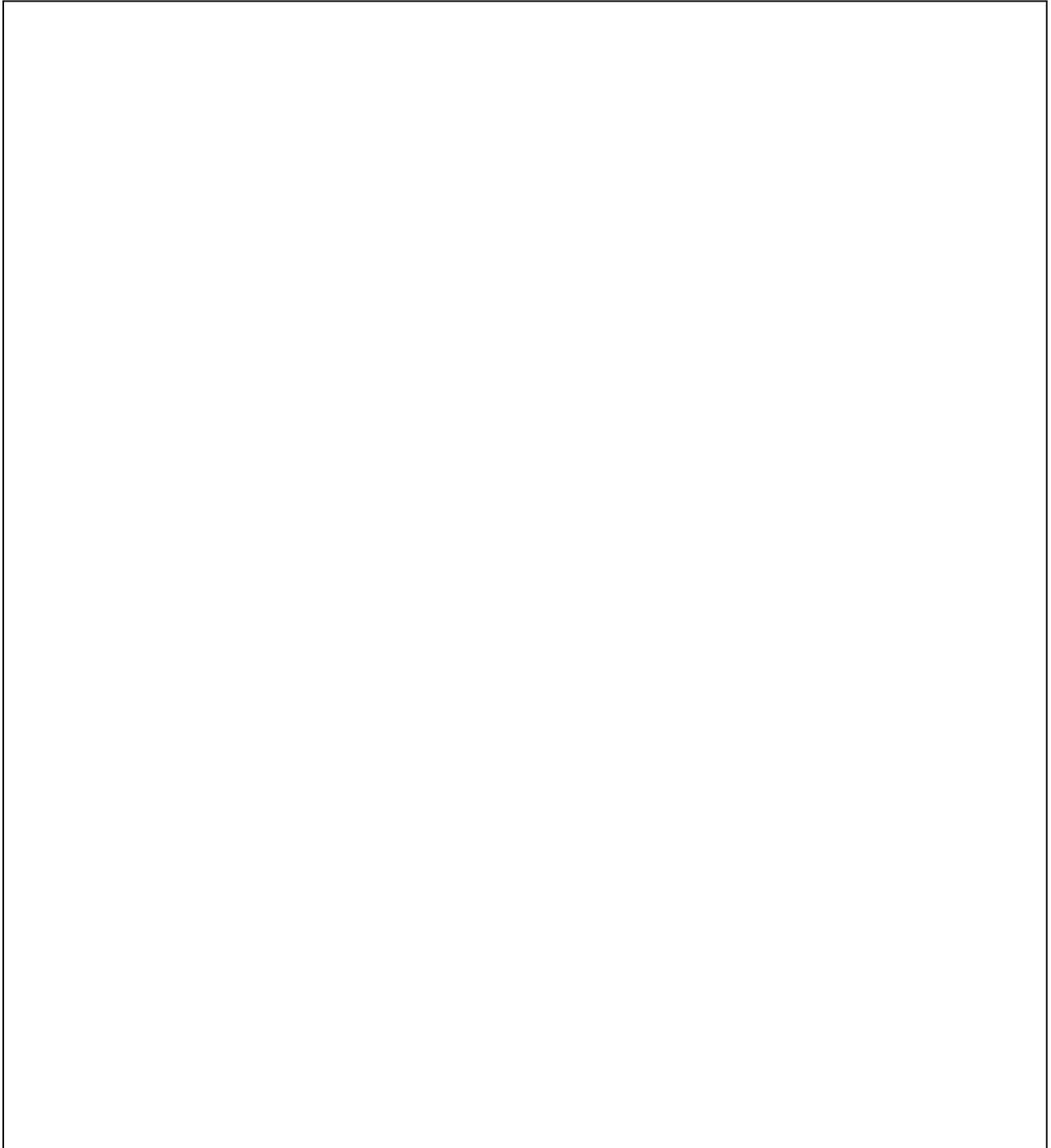
Land that is smoothed and maintained is an asset to the farm. Land smoothing was designed and installed to remove surface irregularities that interfered with the planned land use. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Avoid use of tillage equipment that leaves ridges or depressions that cannot be removed by subsequent tillage operations.
- On cultivated land, periodically smooth land areas to reestablish the installed field condition. Maintain good vegetative cover in all other areas.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR LAND SMOOTHING PROJECT

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide specific recommendations for their land smoothing project.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS LAND SMOOTHING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

468 – LINED WATERWAY OR OUTLET
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

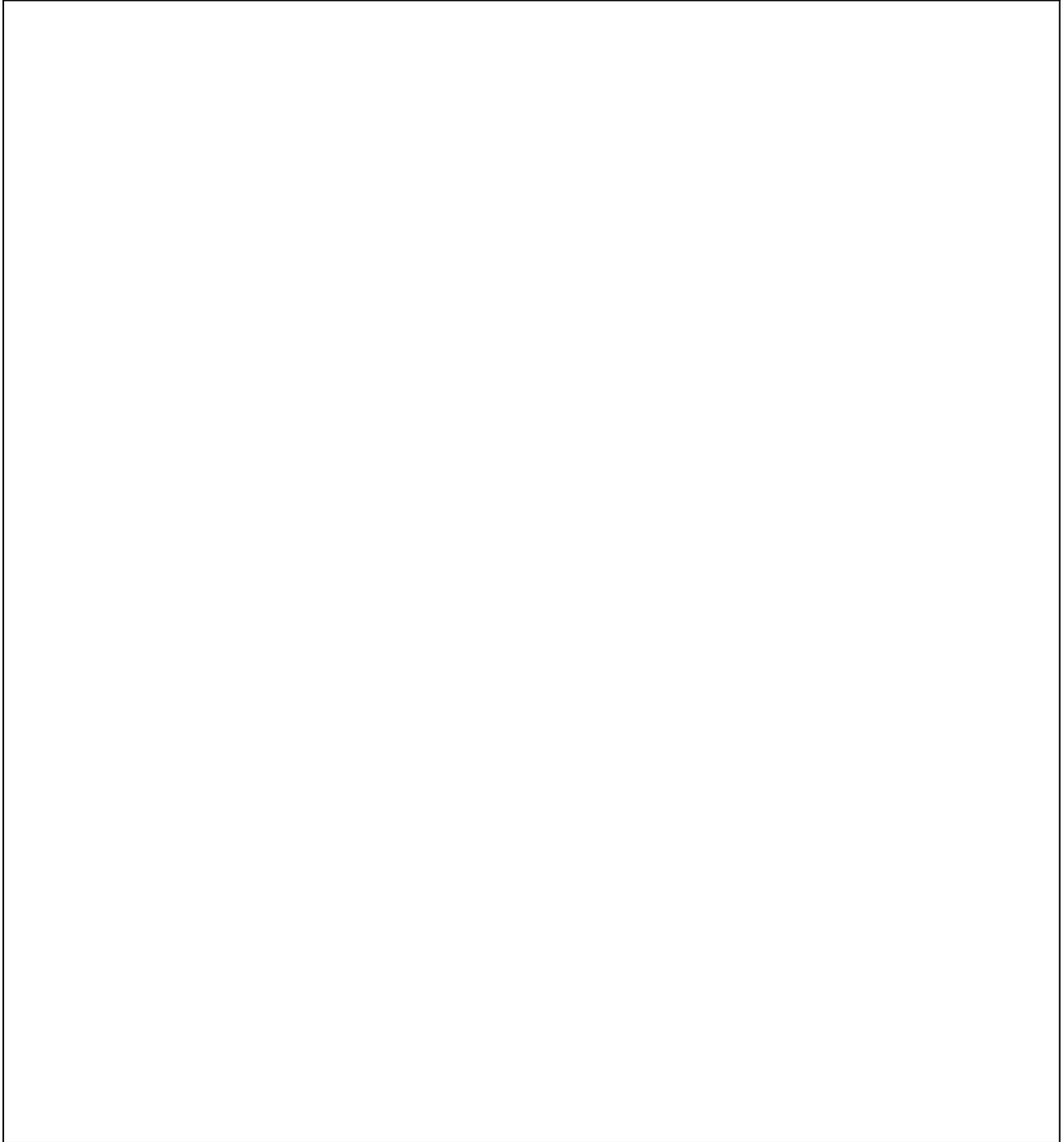
A properly operated and maintained lined waterway or outlet is an asset to the farm. This lining facility was designed and installed to provide erosion protection for the waterway or outlet. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain adequate drainage of foundations.
- Maintain widths of soil berms or banks. Avoid use of tillage equipment that accelerates soil removal.
- Drain all lined waterways or outlets when not being used. Immediately repair any cracks or breaks in the lining, and if settlement is present, investigate cause before repair.
- If livestock are present, prevent their access to linings and provide other drinking water facilities.
- Remove any blockage (sediments, debris, foreign material etc.) that restrict flow capacity.
- Immediately repair any vandalism, vehicular or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation and perennials from areas adjacent to lining,
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and paint and apply paint as a protective coating.
- Avoid crossings of equipment or vehicles except at designated areas.

SPECIFIC RECOMMENDATIONS FOR YOUR LINED WATERWAY OR OUTLET



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR LINED WATERWAY OR OUTLET.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

516 - PIPELINE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained pipeline is an asset to your farm. This pipeline was designed and installed to deliver water to where it may be utilized. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

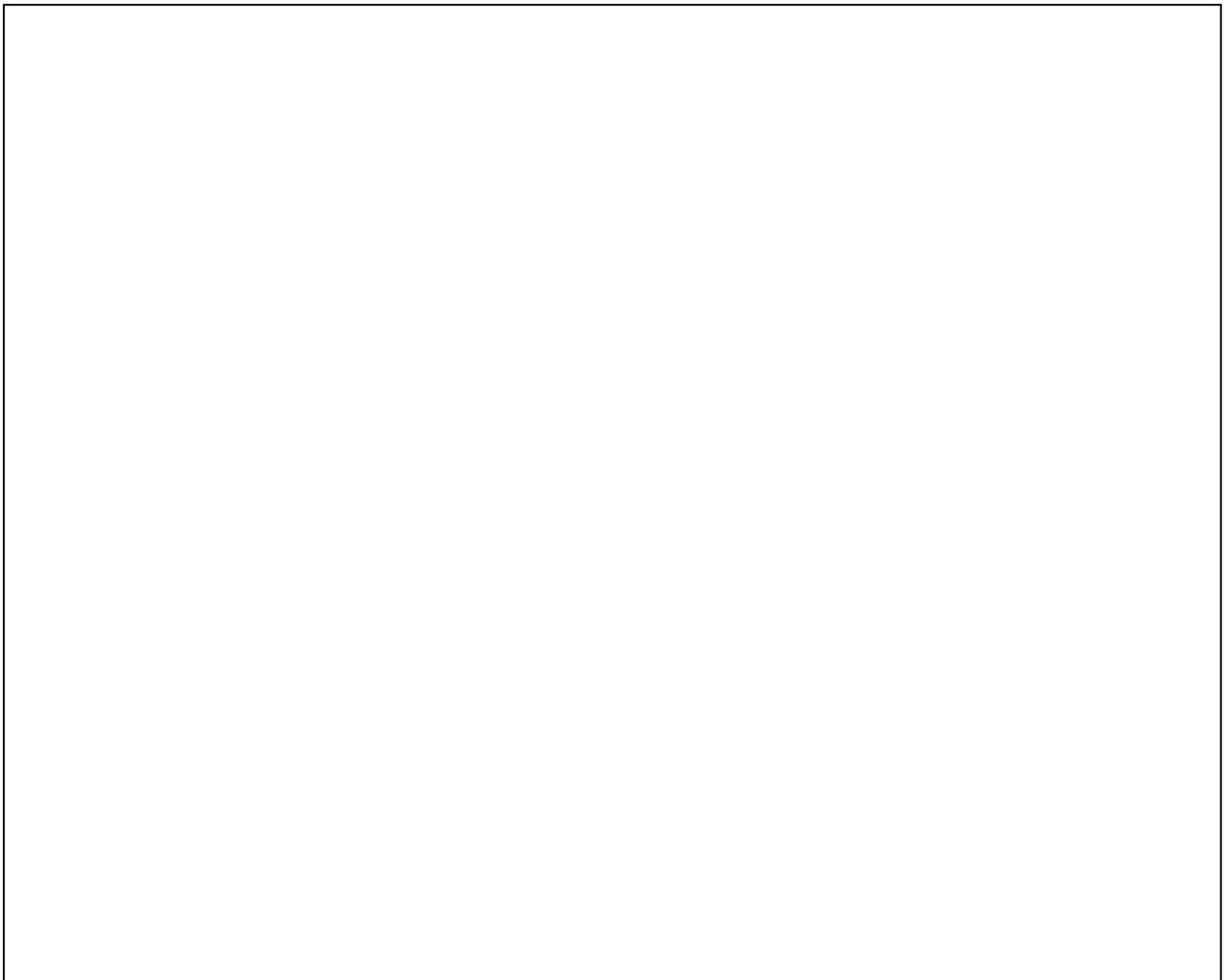
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check to make sure all valves and air vents are set at the proper operating condition providing protection to the pipeline.
- Allow the time to fill gradually when being put into use after shut down or draining.
- Periodically check and repair all valves, gates and regulators to the system requirements following the manufacturer's recommendations.
- Maintain the design depth of cover over the pipeline.
- Limit traffic over the pipeline to designated sections that were designed for traffic loads.
- Avoid travel over pipelines by tillage equipment when the soil is saturated.
- Avoid any subsoiling operation that may disturb the pipeline.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove all foreign debris that hinders system operation.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, an antifreeze solution may be added.
- Check exterior coatings on above-ground and on-ground pipeline installations. Repair any damage immediately.

- Where sacrificial anodes are used for cathodic protection, check their condition on a regular basis as outlined in special O & M requirements. Replace as necessary.
- If the pipeline is connected to a continuous flowing source, such as a spring, maintain flow through the pipe to avoid freezing.
- Immediately repair any vandalism, vehicular, or livestock damage to any outlets and appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR PIPELINE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR PIPELINE

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

521A – POND SEALING OR LINING

FLEXIBLE MEMEBRANE

OPERATION AND MAINTENANCE

pond lining or sealing is an asset to the farm. This system was designed and installed to reduce seepage in a pond. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the soil covering on liners at the construction depth. Replace soil as needed.
- Equipment is permitted only on liners with a minimum soil cover of 12 inches. If equipment is allowed on the liner, avoid excessive speeds and sharp turns.
- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR POND LINING OR SEALING PROJECT

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR POND LINING OR SEALING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

521B – POND SEALING OR LINING

SOIL DISPERSANT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained pond lining or sealing is an asset to the farm. This system was designed and installed to reduce seepage in a pond. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the soil covering on liners at the construction depth.
- Equipment is permitted only on liners with a minimum soil cover of 12 inches. If equipment is allowed on the liner, avoid excessive speeds and sharp turns.
- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.

- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR POND LINING OR SEALING PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR POND LINING OR SEALING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

521C – POND SEALING OR LINING

BENTONITE SEALANT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

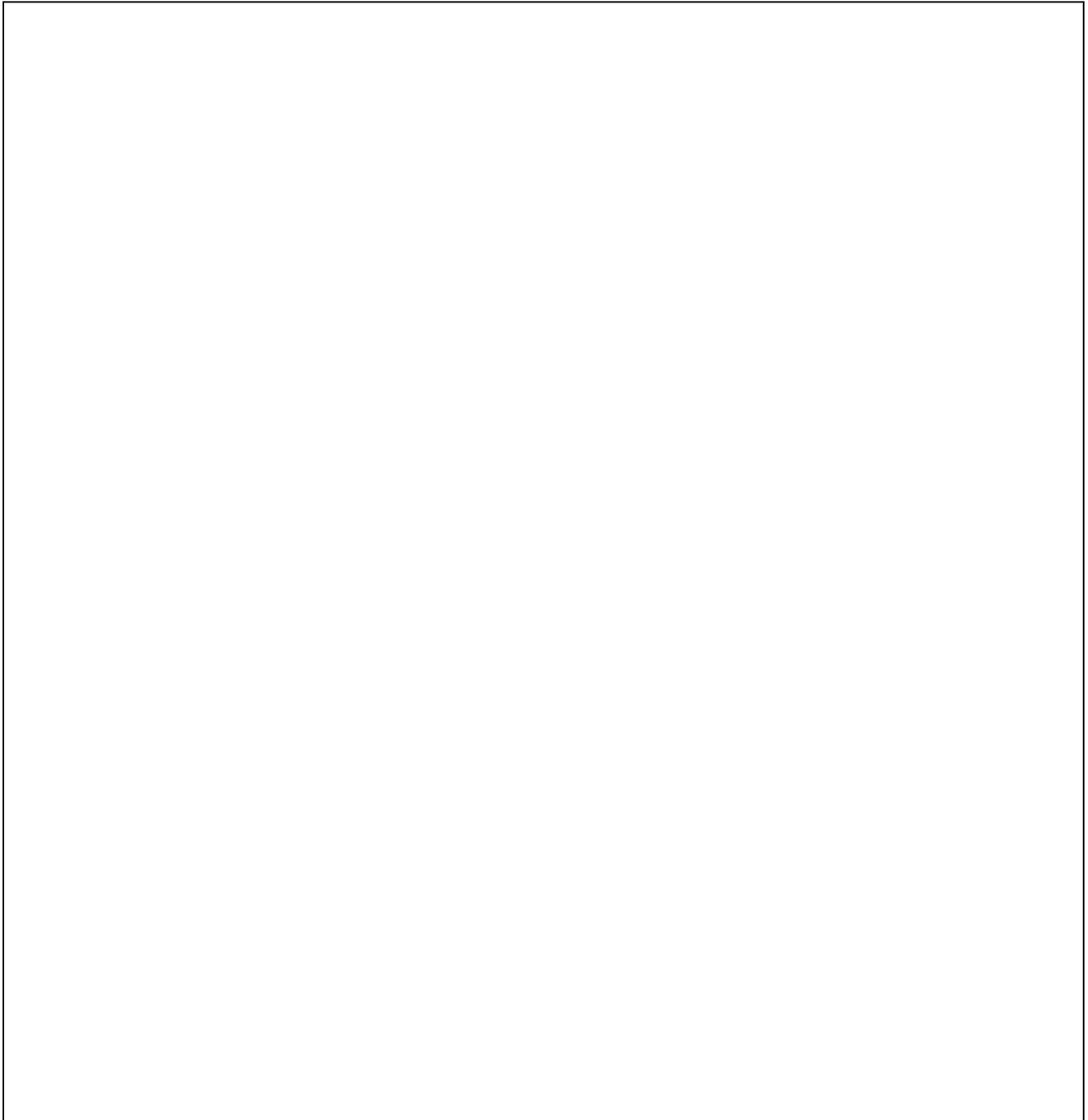
A properly operated and maintained pond lining or sealing is an asset to the farm. This system was designed and installed to reduce seepage in a pond. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the soil covering on liners at the construction depth.
- Limit the use or travel of any equipment in the area that was sealed. Avoid excessive speeds and sharp turns.
- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR POND LINING OR SEALING PROJECT

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR POND LINING OR SEALING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

521F – POND SEALING OR LINING

GLEIZATION

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

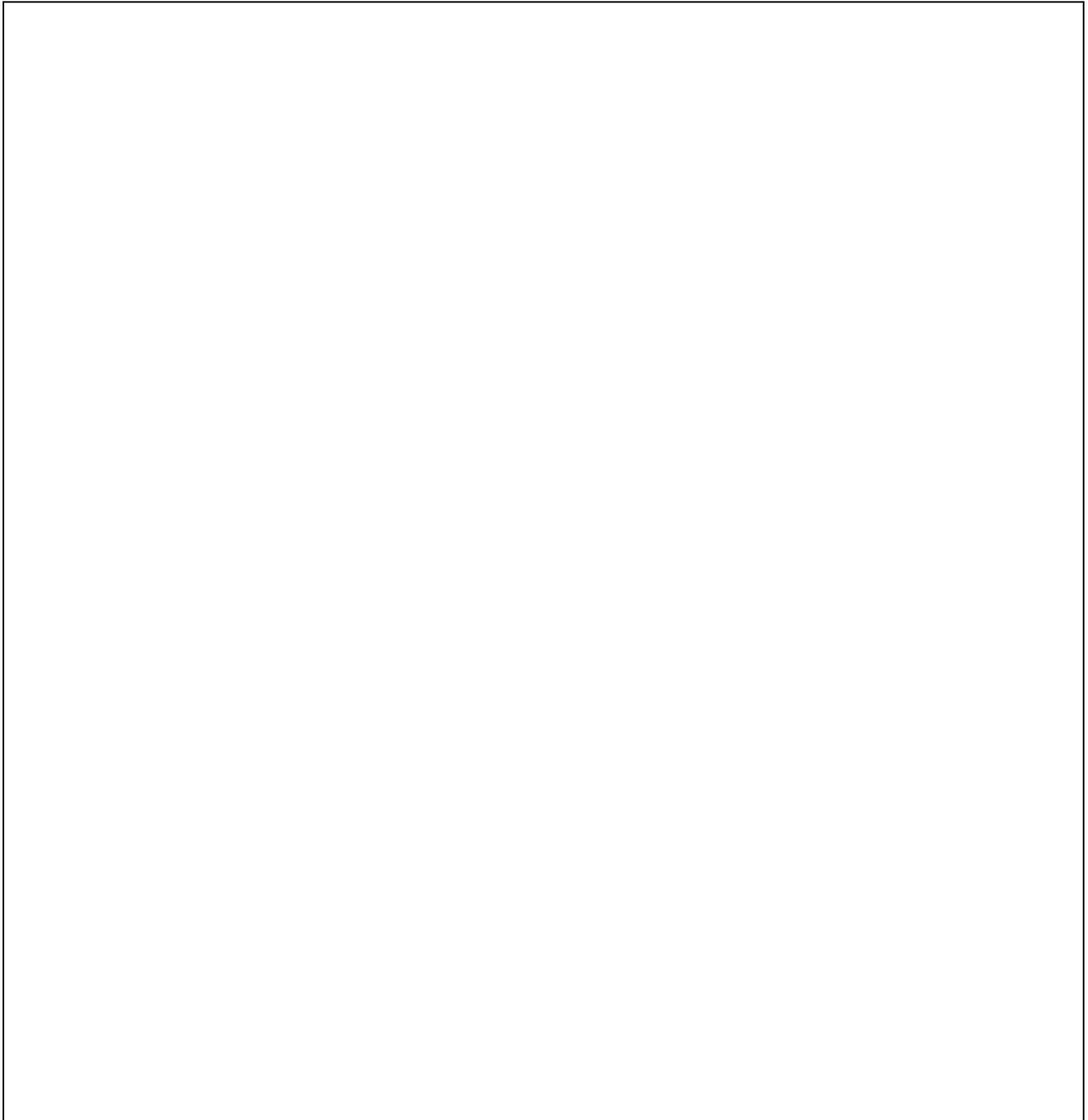
A properly operated and maintained pond lining or sealing is an asset to the farm. This system was designed and installed to reduce seepage in a pond. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the soil covering on liners at the construction depth.
- Limit the use or travel of any equipment in the area that was sealed. Avoid excessive speeds and sharp turns.
- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR POND LINING OR SEALING PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR POND LINING OR SEALING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

521G – POND SEALING OR LINING

SOIL CEMENT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

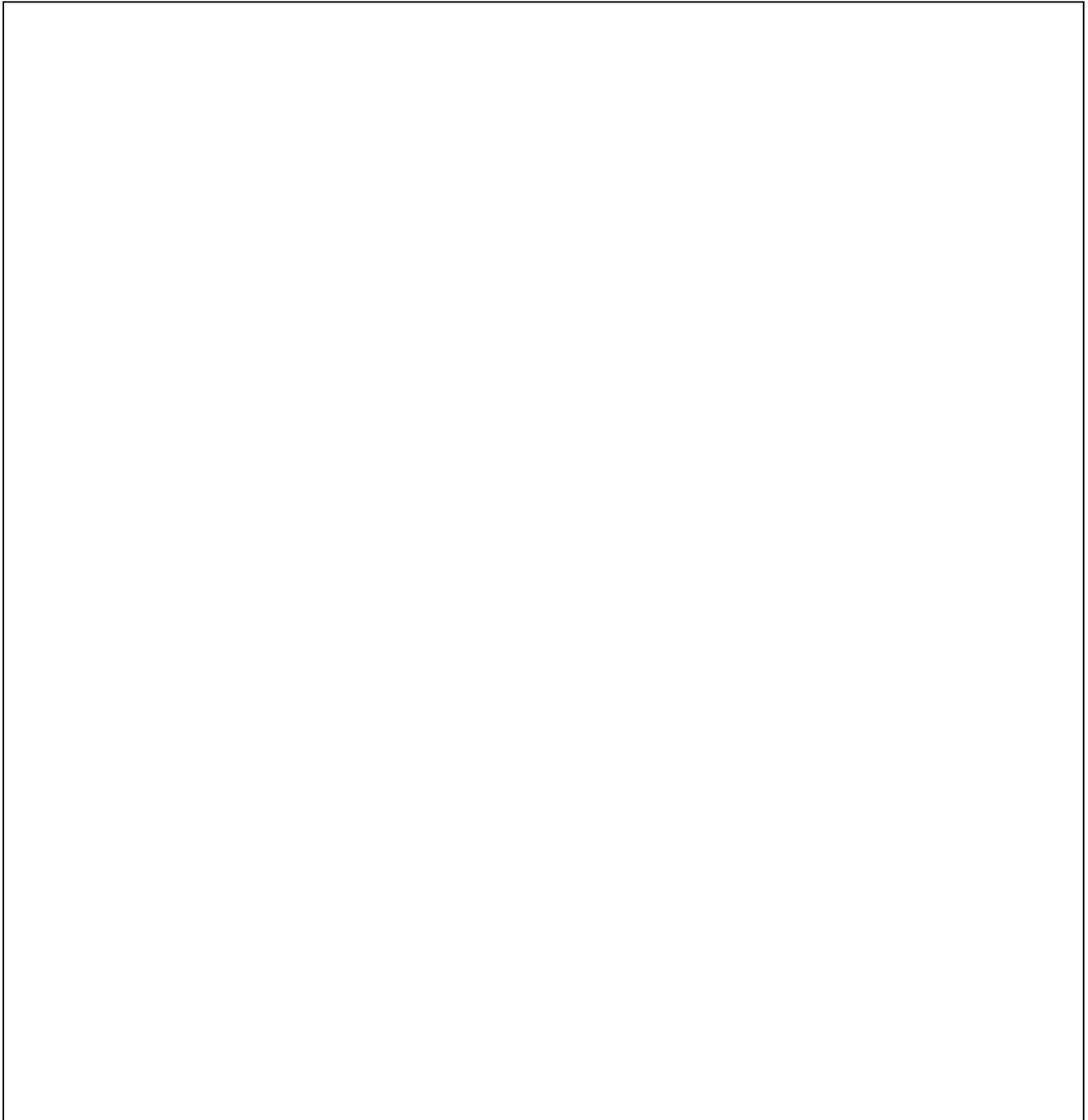
A properly operated and maintained pond lining or sealing is an asset to the farm. This system was designed and installed to reduce seepage in a pond. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the soil covering on liners at the construction depth.
- Limit the use or travel of any equipment in the area that was sealed. Avoid excessive speeds and sharp turns.
- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR POND LINING OR SEALING PROJECT

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide specific recommendations for their pond lining or sealing project.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR POND LINING OR SEALING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

521H – POND SEALING OR LINING

GEOSYNTHETIC LINING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

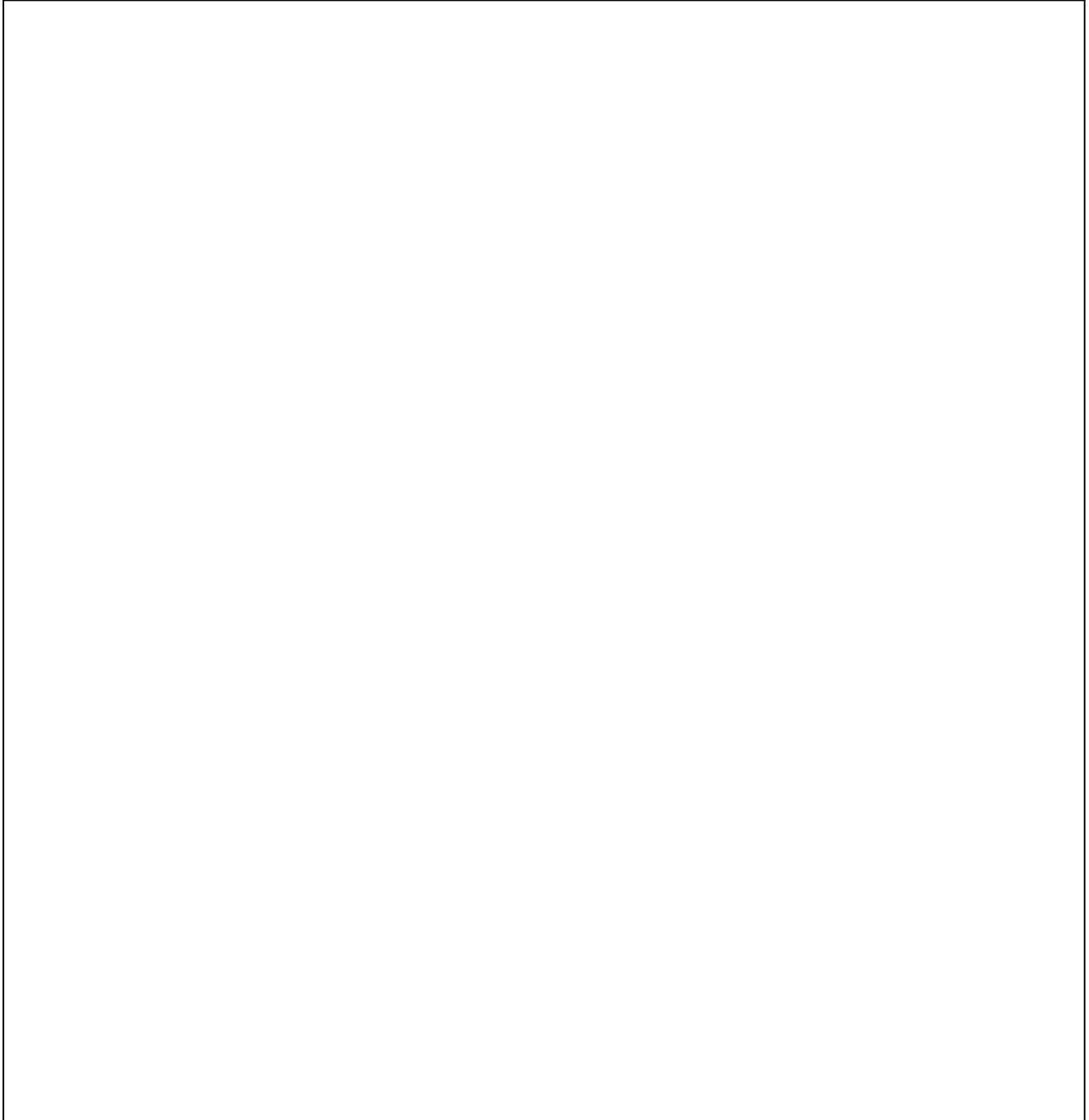
A properly operated and maintained pond lining or sealing is an asset to the farm. This system was designed and installed to reduce seepage in a pond. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the soil covering on liners at the construction depth.
- Limit the use or travel of any equipment in the area that was sealed. Avoid excessive speeds and sharp turns.
- Prevent all livestock from using any area of the pond which was sealed by artificial liners.
- Fences shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Settlement or cracks in the soil weaken earthen sections and may accelerate the development of flow paths that may result in structure failure. This should be investigated to determine the cause and immediately repaired.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately remove any debris that may harm or reduce the effectiveness of sealants.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR POND LINING OR SEALING PROJECT

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR POND LINING OR SEALING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

532 – PUMPED WELL DRAIN

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

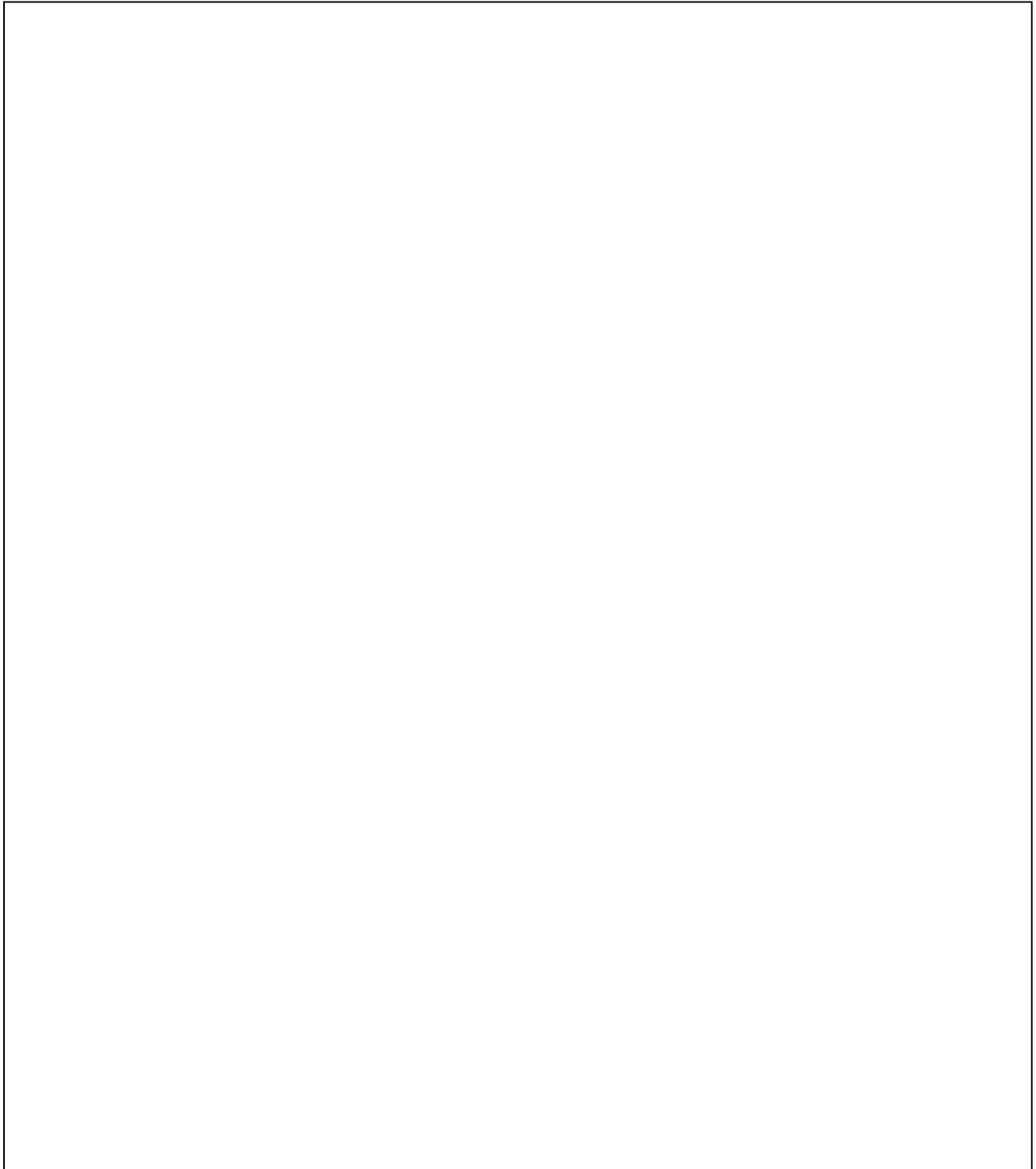
A properly operated and maintained pumped well drain is an asset to the farm. This well was designed and installed to provide adequate subsurface drainage to crop land to be benefited. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Operate the well only when needed for crop production or salt management.
- Monitor crops regularly noting areas of excess moisture stress and adjust well operation as needed.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Maintain area around pump and electrical panel. Remove all foreign debris that hinders system operation. Provide and maintain adequate surface water drainage around the well pumping plant area.
- Drain the system and components in areas that are subject to freezing. If parts of the system cannot be drained, a non-toxic antifreeze solution may be added.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR PUMPED WELL DRAIN



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR PUMPED WELL DRAIN.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

533 – PUMPING PLANT FOR WATER CONTROL

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained pumping plant is an asset to your farm. This pumping plant was designed and installed to convey water in a pipeline where it can be distributed for use. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain all pumps, agitators, piping, valves and other electrical and mechanical equipment in good operating condition following the manufacture's recommendations.
- Precautionary measures should be taken to prevent spills of fuels and lubricants. Promptly clean up spills and prevent movement of fuels or lubricants to any water body.
- Maintain grounding rods and wiring of all electrical equipment in good working condition.
- Maintain all safety shields on pumps, motors, or other electrical or mechanical equipment.
- Check all pump bases and mountings for durability and ability to hold the pump in place without vibration, repair when necessary.
- Replace, repack or tighten the seals when leakage is in excess of manufacturer's recommendations.
- Drain all pumps and piping including valves that are subject to freezing. If parts of the system cannot be drained, a non-corrosive anti-freeze solution shall be added.
- Minimize erosion in collection ditches and pipeline inlets. Controlling erosion helps minimizes sediment deposits in storage facilities and sumps.
- Periodically check all above ground pipeline connections and structures for proper operation, including leaks. A 10 gal/min leak totals over 1400 gal/day and 10,000 gal/week. Repair leaks immediately.
- Determine cause of cracks and structure displacement, and repair as needed.
- Periodically clean trash racks, sediment traps, sumps, reservoirs, and ditches to maintain design capacity and efficiency.

- Prevent, and if necessary, remove foreign debris from entering water facilities. Properly cleaned and maintained screens help minimize required system maintenance.
- Replace weathered or displaced rock riprap to constructed grade.
- Do not allow the operation of any equipment that exceeds the design limit on or within twenty feet of the structure.
- Maintain surface drainage around the pumping plant to avoid ponding of water.
- Immediately repair any vandalism, vehicular or livestock damage to the structure, earthen areas surrounding the structure, or any appurtenances.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR PUMPING PLANT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR PUMPING PLANT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

543 – LAND RECONSTRUCTION, ABANDONED MINED LAND

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

Properly operated and maintained abandoned mined land project is an asset to your farm. This project was designed and installed to stabilize abandoned mined areas so that they can be used to support desirable vegetation, reduce erosion and sedimentation, enhance water quality or quantity, maintain and improve the visual quality of the landscape, and protect public health, safety, and general welfare. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain appropriate warning signs.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human, vehicle or livestock entry.
- Inspect project site yearly and fill areas where settlement is adversely affecting drainage and land use.
- Add soil amendments to soils that cannot support adequate vegetation or replace them with suitable soil material.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.
- Inspect drainage structures and channels. Remove any obstructions to keep structures and channels clean and functional. Take corrective actions to address any erosion that occurs.
- Visually inspect grazed land. Take corrective actions to address any erosion that occurs. Seek the advice of the local NRCS for proper grazing practices to eliminate any future erosion.

- Inspect project area after heavy rains. Promptly repair any damage. Fill rills and gullies that occur and re-vegetate.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR ABANDONED MINED LAND PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

544 – LAND RECONSTRUCTION, CURRENTLY MINED LAND

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

Properly operated and maintained currently mined land project is an asset to your farm. This project was designed and installed to prevent permanent damage to soil and water resources in and near mined areas, to restore the productivity of soils to permit their pre-mining level, to reduce erosion and sedimentation, and to maintain or improve the visual quality of the landscape.

The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

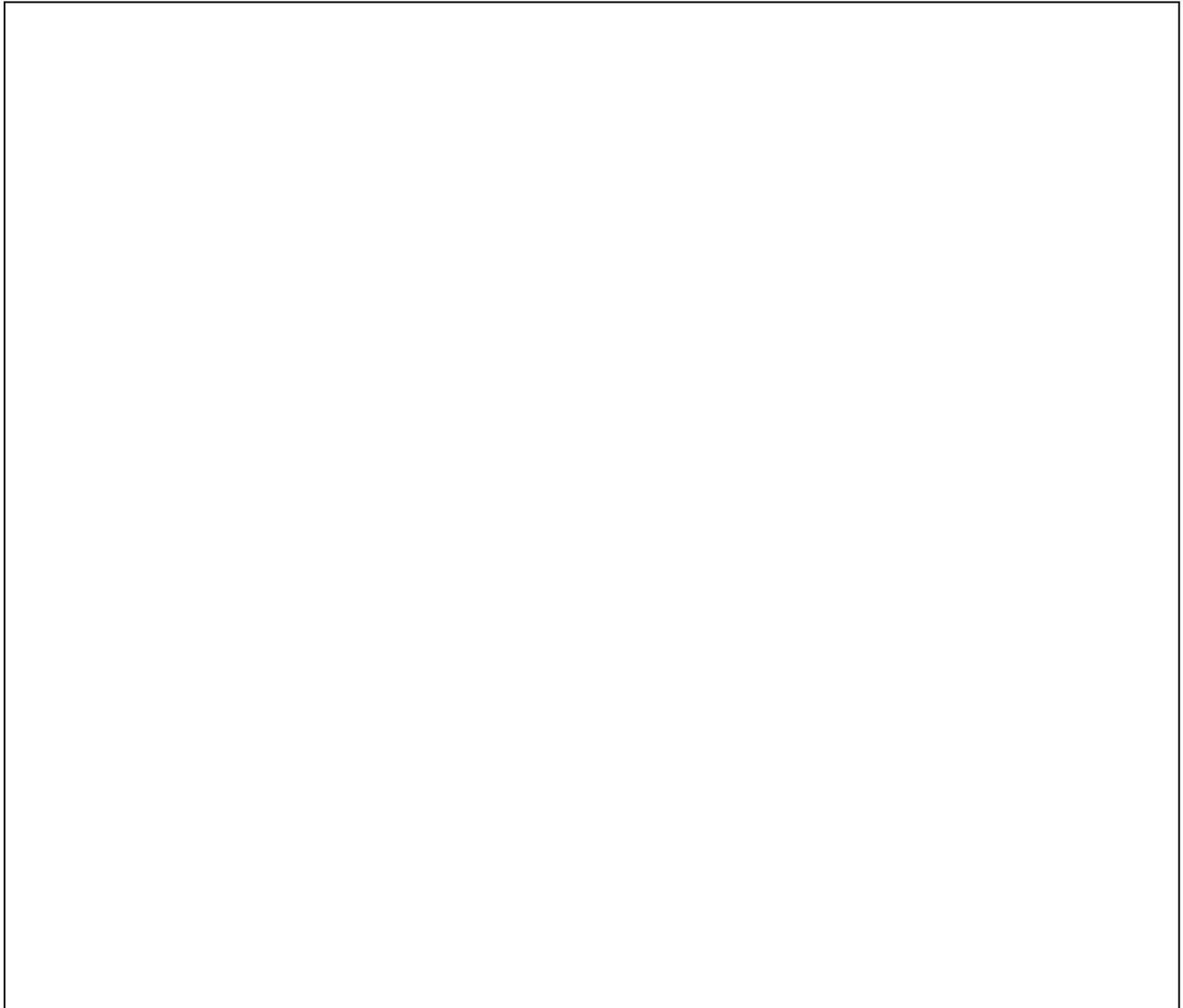
This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain appropriate warning signs.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human, vehicle or livestock entry.
- Inspect project site yearly and fill areas where settlement is adversely affecting drainage and land use.
- Add soil amendments to soils that cannot support adequate vegetation or replace them with suitable soil material.
- Inspect haul roads and approaches to and from the project frequently to determine the need for stabilizing materials. Repair as needed.
- Inspect drainage structures and channels. Remove any obstructions to keep structures and channels clean and functional. Take corrective actions to address any erosion that occurs.
- Visually inspect grazed land. Take corrective actions to address any erosion that occurs. Seek the advice of the local NRCS for proper grazing practices to eliminate any future erosion.

- Inspect project area after heavy rains. Promptly repair any damage. Fill rills and gullies that occur and re-vegetate.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR CURRENTLY MINED LAND PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

552 – IRRIGATION REGULATING RESERVOIR
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained irrigation regulating reservoir is an asset to your farm. This structure was designed and installed to store water for short-term regulation per the site specific design. The estimated life span of this installation is at least 20 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require performance of periodic maintenance and operational items to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function.
- Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the dam. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.

- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR IRRIGATION REGULATING RESERVOIR.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

554 – DRAINAGE WATER MANAGEMENT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

A properly operated and maintained drainage water management system is an asset to the farm. These water control facilities were designed and installed to provide adequate drainage and water source to crop land to be benefited. The estimated life span of this installation is at least 15 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Coordinate water management operations in the system with; rainfall, ground water contribution and crop and soil moisture needs.
- Prompt repair or replacement of damaged components is necessary.
- Remove debris and foreign material from all components that hinders system operation.
- Maintain vigorous growth of vegetative coverings on all slopes and water courses. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Maintaining area around pumping plant. It should be free of debris, standing water, weeds, etc. Remove all foreign debris that hinders system operation and/or provides a safety hazard to electrical facilities.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR DRAINAGE WATER MANAGEMENT PROJECT

Provide time and stage requirements to hold water in open drainage ditches or closed drainage systems.

Provide pumping requirements and schedules.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR DRAINAGE WATER MANAGEMENT PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

555 – ROCK BARRIER

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

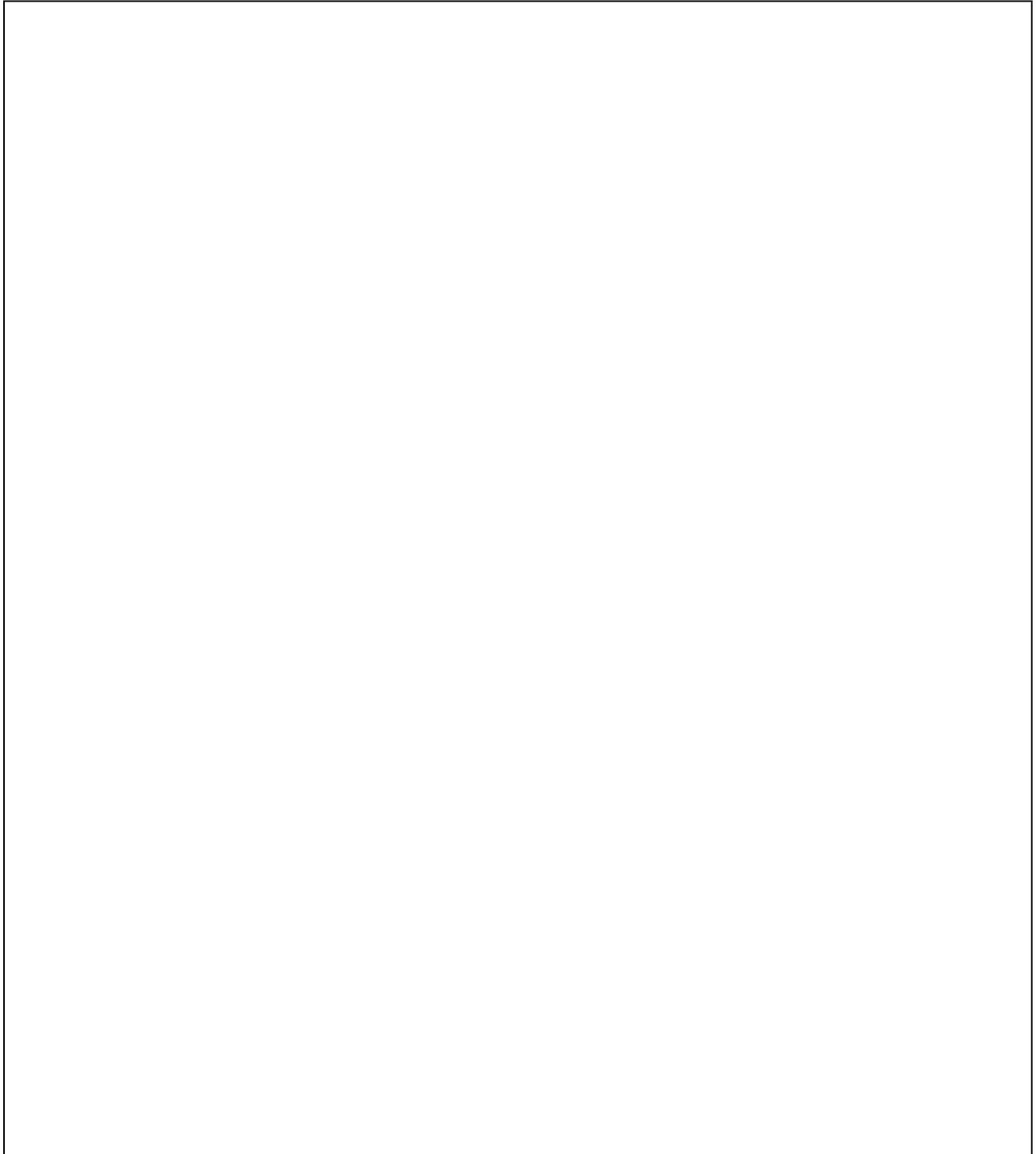
A properly operated and maintained rock barrier is an asset to the farm. This rock barrier was designed and installed to help control erosion. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Provide periodic inspections, especially immediately following runoff events.
- Promptly repair or replace damaged components as necessary.
- Remove sediment that has accumulated in surface drain and outlet to maintain designed capacity.
- Vegetation in the outlet, damaged by livestock, machinery, or erosion must be repaired promptly.
- Maintain rock placement by repairing and replacing as needed.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control excessive growth.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR ROCK BARRIER



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR ROCK BARRIER.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

558 – ROOF RUNOFF STRUCTURE

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained roof runoff structure is an asset to your farm. This structure was designed and installed to collect, control and transport precipitation from roofs. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

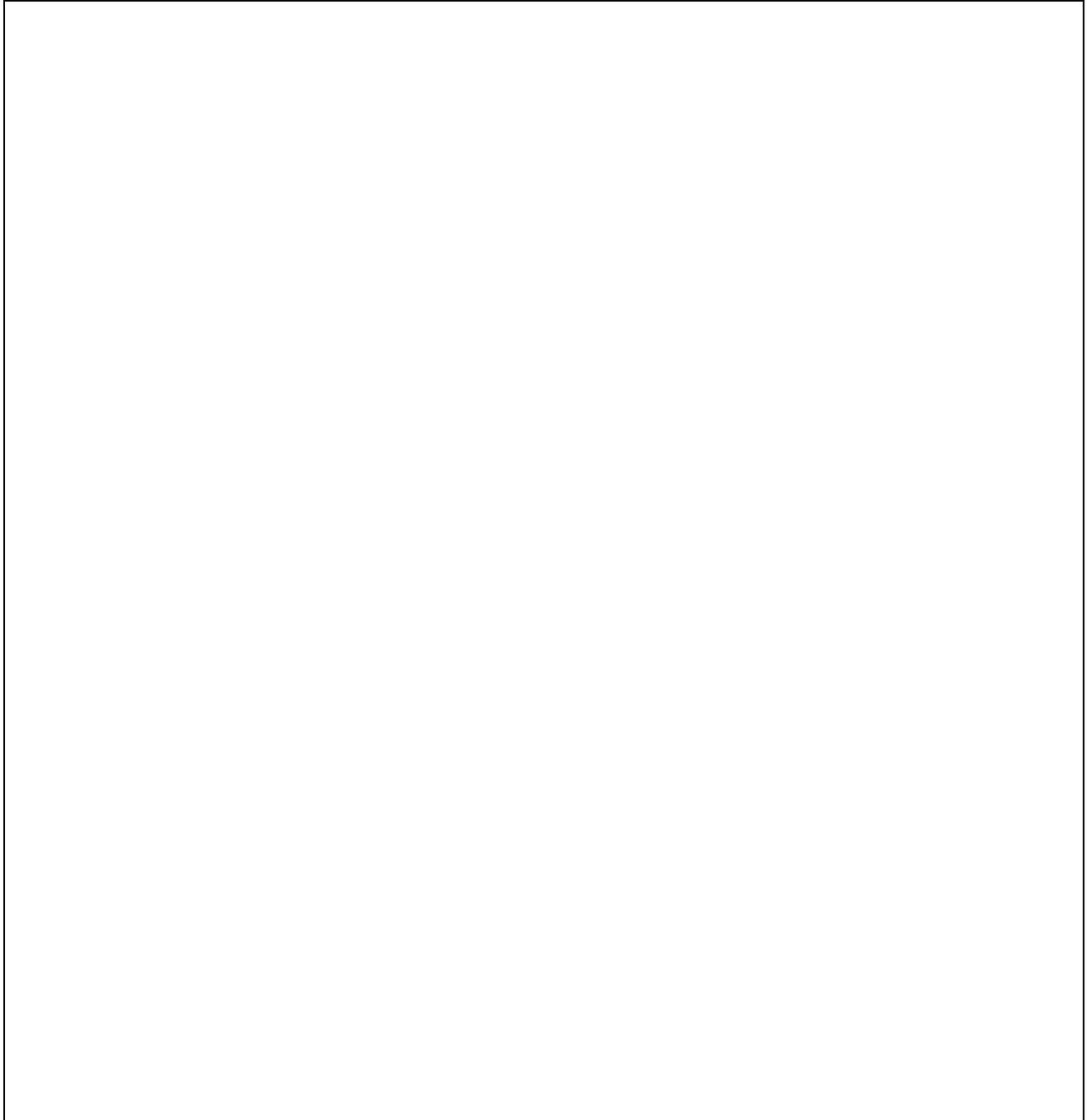
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Keep roof runoff structures clean and free of obstructions that reduce flow.
- Make regular inspections and perform repair maintenance as needed to ensure proper functioning of the roof runoff structure and associated outlet structures.
- Inspect all fasteners to securely hold all gutters and downspouts in place. Repair or replace if needed.
- Inspect all underground conveyance lines free from debris and obstructions. Repair or replace if needed.
- Inspect all screens and strainers in place and in good working condition. Repair or replace if needed.
- Remove any trees or branches that deposit debris and reduce the capacity of the system.
- Periodically check gutters, downspouts and all above ground pipelines, trash guards, pumps, structures, and appurtenances for proper operation. Repair or replace if needed.
- Protect downspouts from damage by livestock and equipment. Repair or replace damaged components as needed.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Replace weathered or displaced rock riprap to constructed grade.
- Repair spalls, cracks and weathered areas in concrete surfaces.

- Maintain drainage away from the structure. Do not stockpile materials in the drainage path. Do not discharge directly into surface waters.

SPECIFIC RECOMMENDATIONS FOR YOUR ROOF RUNOFF STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR ROOF RUNOFF STRUCTURE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

560 – ACCESS ROAD

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained access road is an asset to the farm. The access road was designed and installed as a travelway for equipment, vehicles and animals. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the road surface in good condition, which includes periodic grading and addition of gravel surface material when necessary. Prevent surface ponding by localized grading or addition of gravel to remove depressions. Road base rock may be required to stabilize the foundation.
- Promptly repair or replace damaged components. Maintain road ditch and drainage facility capacities.
- Limit livestock use to periods that permit usage without physical damage to the road surface, road shoulders, and excavated or embankment side slopes. Protect vegetation from overgrazing.
- Maintain installed fences to provide warning and/or unauthorized human or livestock entry.
- Remove debris or blockage in road ditches, drop inlets, road culverts, bridges waterways and storm water outlets. Remove litter from roadway surfaces, road ditches and drainage facilities.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage to earthfills, side slopes, spillways, outlets or other appurtenances.
- Inspect culverts, roadside ditches, water bars, and outlets after each major runoff event and restore flow capacity as needed.
- Maintain vegetated areas in adequate cover. Re-seed and mow as needed.
- Remove debris or blockage of stream crossings culverts or bridges.

SPECIFIC RECOMMENDATIONS FOR YOUR ACCESS ROAD

Provide additional measures for Air Quality purposes where appropriate.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR ACCESS ROAD.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

561 – HEAVY USE AREA PROTECTION

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

A properly operated and maintained heavy use area protection project is an asset to the farm. This project was designed and installed to stabilize areas frequently used by people, animals or vehicles and is intended to protect water quality, air quality, reduce soil erosion and improve aesthetics and or livestock health.. The estimated life span of this installation is at least 15 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain road and pathway surfaces in good condition, which includes periodic grading and addition of surface material when necessary. Prevent surface ponding by localized grading or addition of surface materials to remove depressions. Road base-course rock may be required to stabilize the road foundation. If so, remove unstable materials and rebuild travelway.
- Promptly repair or replace damaged components.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and paint.
- Remove debris or blockage in road and pathway drainage facilities. Maintain road and pathway drainage capacities.
- Remove debris from road and pathway surfaces, adjoining land areas, ditches and drainage facilities.
- Maintain good vegetative cover, mulches, and other covering installed for erosion protection. Limit traffic with fencing or barriers, where needed.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR HEAVY USE AREA PROTECTION PROJECT

If Roof Rainfall Diversion Structures are included as part of the project, Operation and Maintenance guidance for this structure will be provided by the Engineer who designs the structure.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR HEAVY USE AREA PROTECTION PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

566 – RECREATION LAND GRADING AND SHAPING
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

Properly operated and maintained recreation land grading and shaping is an asset to the area. Grading and shaping was designed and installed to configure the land surface to improve recreation use. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain recreation land surfaces in good condition, which includes replacement or addition of surface material when necessary. Prevent surface ponding by localized grading or addition of surface materials (i.e. aggregate, mulch, top soil) to remove depressions. Replace protective vegetation as soon as possible.
- Promptly repair or replace soil, vegetation, mulch, aggregate, etc. in areas damaged by erosion or heavy use.
- Remove debris or blockage in drainage ditches, drop inlets, culverts, bridges, waterways and storm water outlets. Maintain drainage facility capacities.
- Remove debris and litter from recreation areas, adjoining land areas, ditches and drainage facilities.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or damage to earthfills, slopes, drainage facilities, water ways and storm water outlets or other appurtenances.
- Maintain good vegetative cover, mulches, and other covering installed for erosion protection. Limit heavy traffic to areas protected for that purpose.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS RECREATION LAND GRADING AND SHAPING PLAN.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

568 – RECREATION TRAIL AND WALKWAY

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

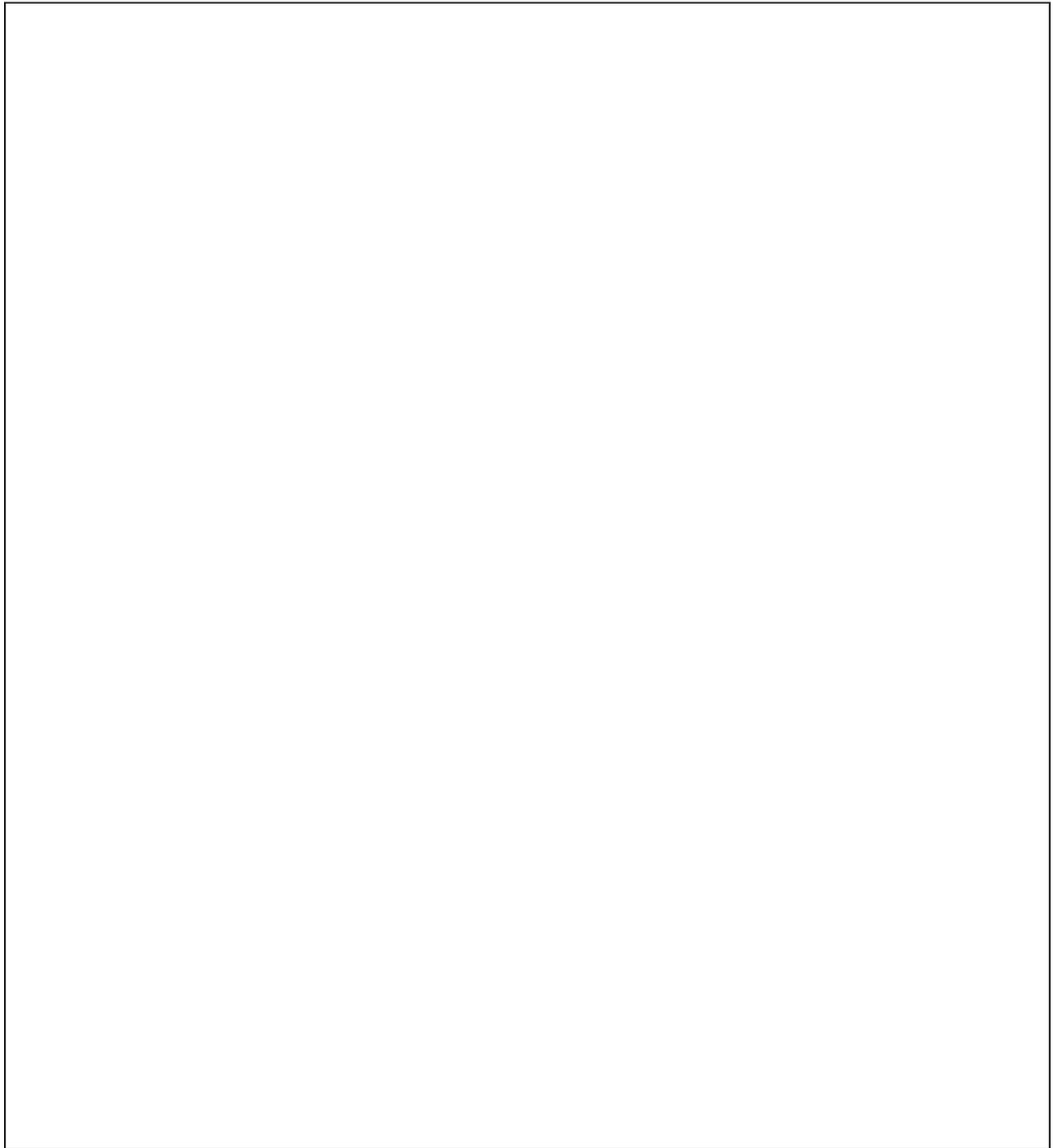
Properly operated and maintained recreation trails and walkways are an asset to the area. Trails and walkways were designed and installed as a travel way for animals, personnel and small maintenance vehicles. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Prompt repair or replacement of damaged components is necessary.
- Maintain trail and walkway surfaces in good condition, which can include periodic grading and addition of surface material.
- Repair eroded areas and re-vegetate as soon as possible. Install additional erosion control measures, as needed, to stabilize any eroded areas.
- Remove debris and liter from trails and pathway surfaces, adjoining land areas, ditches and drainage facilities. Maintain drainage facility capacities.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, and damage to trail and walkway surfaces, earthfills, side slopes, drainage facilities, water ways and storm water outlets or other appurtenances.
- Maintain good vegetative cover, mulches, and other covering installed for erosion protection. Limit traffic with fencing or barriers, where needed. Maintain good vegetative cover on all slopes and water courses.

SPECIFIC RECOMMENDATIONS FOR YOUR RECREATION TRAIL AND WALKWAY

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR RECREATION TRAIL AND WALKWAY.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

570 –RUNOFF MANAGEMENT SYSTEM

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained runoff management system is an asset to the area. The system was designed and installed to help control excess runoff caused by construction activities and/or other land disturbances. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Remove debris and litter from inlet and storage structures, water conveyance facilities and outlet structures that can hinder operation.
- Annually inspect pond for damage from normal use. Inspect the spillways, inlets, outlets and control gates for proper functioning for their ability to maintain the water level to design elevations. At no more than 3 to 6 month intervals open and close gates and valves to assure proper function. Immediately remove any blockage or obstructions and repair any damage.
- Inspect inlet, embankments and spillways, infiltration trenches and debris collectors after heavy rains for possible damage. Promptly repair any damage.
- Annually inspect the downstream toe of the dam. If there are wet areas or seeps, contact the local NRCS office for additional assistance.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Fill rills and gullies that occur on the embankments and/or spillway and re-vegetate.
- Maintain a grass filter strip around the perimeter of the pond to trap sediment.
- Check downstream floodplain at least once every 5 years to assure life or property will not be threatened in the case of a dam failure.

- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Remove debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR RUNOFF MANAGEMENT SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

574 – SPRING DEVELOPMENT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

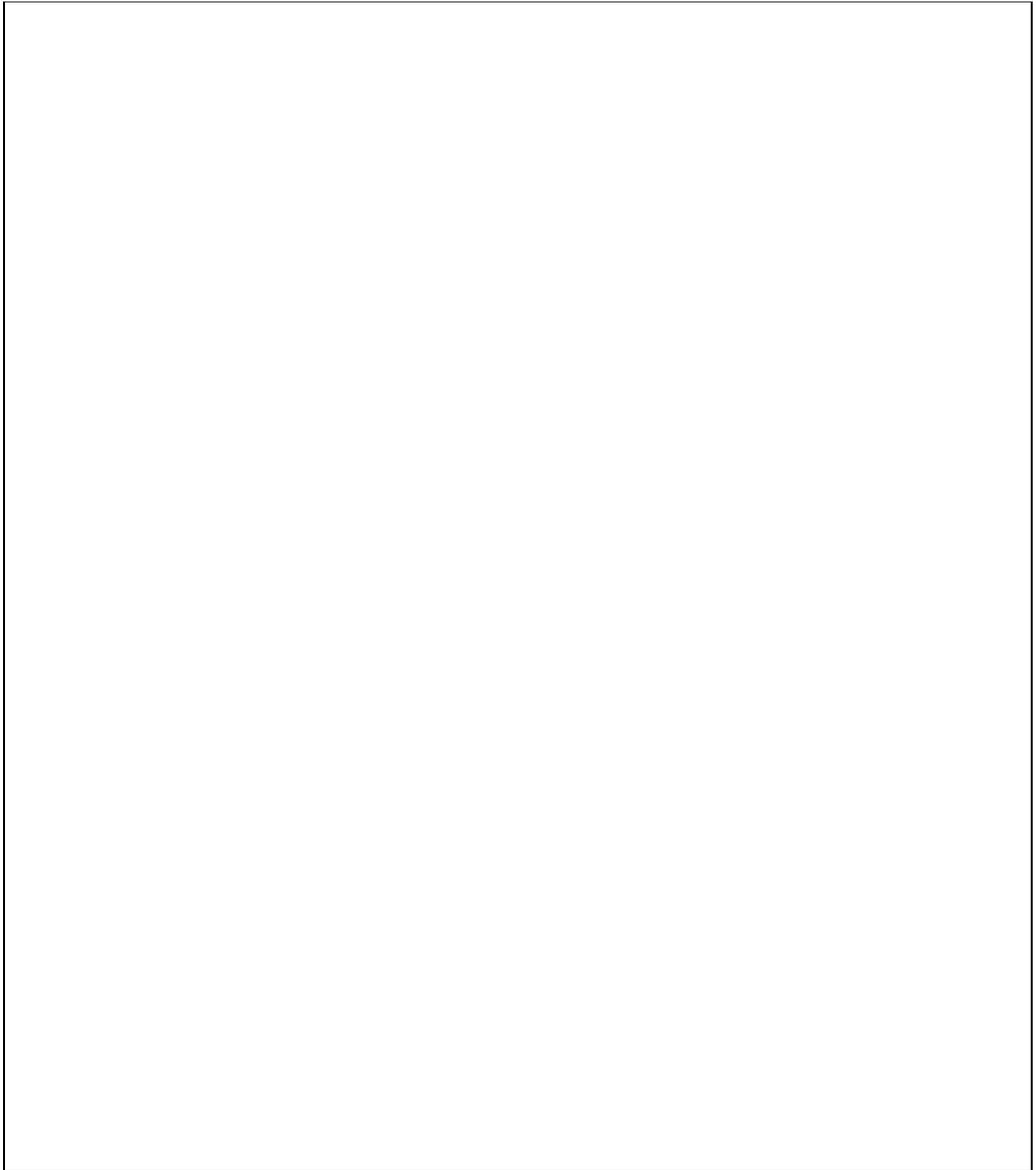
A properly operated and maintained spring development is an asset to the farm. This project was designed and installed to obtain and improve the distribution of water for livestock and/or wildlife purposes. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check all above ground connections, cover and seals, valves, insect and rodent guards, inlets and outlets to make sure they are functioning properly.
- Maintain all fences in good condition to exclude livestock from collection area.
- Maintain, where necessary, coverings and insulation to prevent damage by freezing.
- Precaution and care is needed to prevent herbicides, insecticides and other pollutants from contamination of water source.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control growth.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR SPRING DEVELOPMENT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR SPRING DEVELOPMENT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

575 – ANIMAL TRAILS AND WALKWAYS

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

Properly operated and maintained animal trails and walkways are an asset to the area. Trails and walkways were designed and installed as a travel way for animals, personnel and small maintenance vehicles. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Prompt repair or replacement of damaged components is necessary.
- Maintain trail and walkway surfaces in good condition, which can include periodic grading and addition of surface material.
- Repair eroded areas and re-vegetate as soon as possible. Install additional erosion control measures, as needed, to stabilize any eroded areas.
- Remove debris and litter from trails and pathway surfaces, adjoining land areas, ditches and drainage facilities. Maintain drainage facility capacities.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, and damage to trail and walkway surfaces, earthfills, side slopes, drainage facilities, water ways and storm water outlets or other appurtenances.
- Maintain good vegetative cover, mulches, and other covering installed for erosion protection. Limit traffic with fencing or barriers, where needed. Maintain good vegetative cover on all slopes and water courses.
- Annually inspect all fences and gate. Repair or replace promptly.
- Periodically remove manure accumulations.

SPECIFIC RECOMMENDATIONS FOR YOUR ANIMAL TRAILS AND WALKWAYS

For multiple adjacent vegetated walkways, provide guidance as to the rotation of walkways to allow for recovery of vegetation and for improvement of traffic-supporting conditions.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR ANIMAL TRAILS AND WALKWAYS.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

580 – STREAMBANK AND SHORELINE PROTECTION

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly maintained streambank and shoreline is an asset to your property. This practice was designed and installed to provide streambank and shoreline erosion protection. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

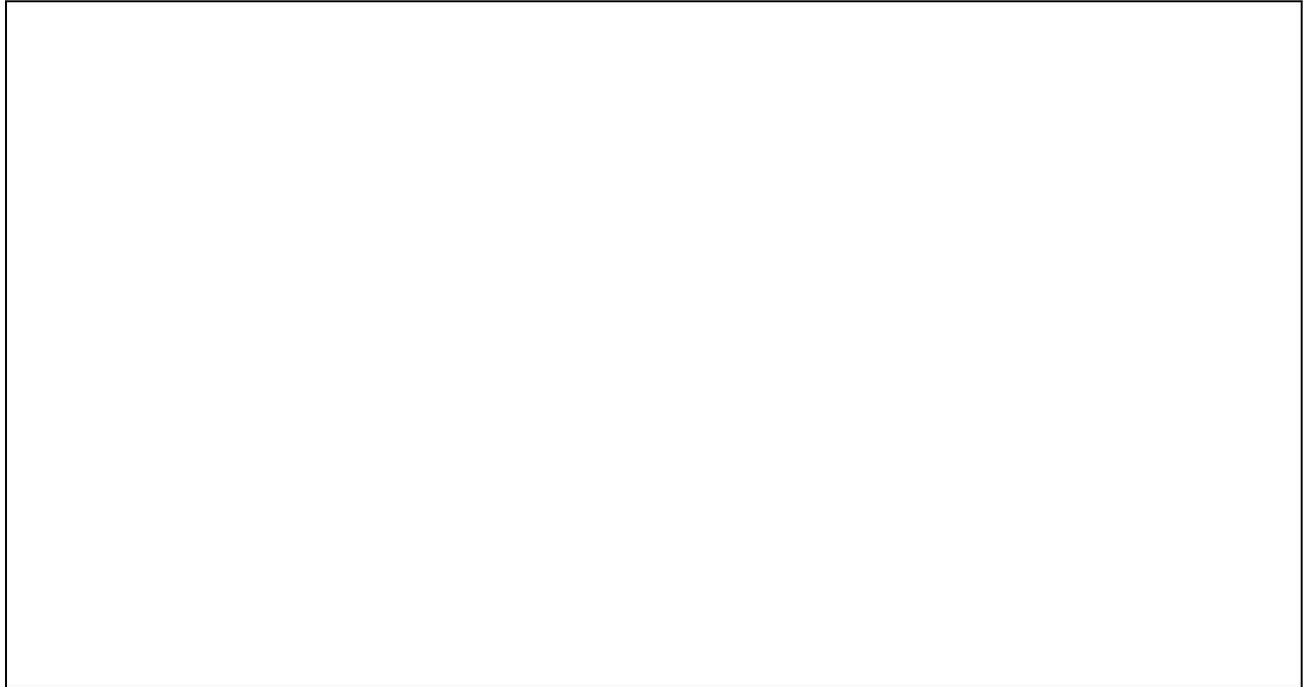
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program. Additional permits may be required to perform this work.

GENERAL RECOMMENDATIONS

- Inspect the integrity of fences, access roads, water access, crossings and other livestock control measures. Replace or repair as necessary.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Routine maintenance of vegetation includes removal of hazardous trees and branches that threaten safety, buildings, fences, as well as vegetation along road shoulders, trails and similar features. Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.

- Remove excess debris that may accumulate on or in the immediate area any structure.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Control livestock access to the structure. Livestock may be injured. Repair damaged vegetation and earthfills or accelerated soil erosion caused by livestock.
- Maintain grade control structures necessary for stream bottom and bank stability.
- Maintain stream bank protection facilities, i.e. rock jetties, bank riprap, rock barbs, log revetments, etc.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

**SPECIFIC RECOMMENDATIONS FOR YOUR STREAMBANK AND
SHORELINE PROTECTION PROJECT**



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR STREAMBANK AND SHORELINE PROTECTION PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

582 – OPEN CHANNEL

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained open channel system is an asset to the farm. This system was designed and installed to provide discharge capacity for flood flows, drainage or other water management purposes. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Inspect the integrity of fences, access roads, water access, crossings and other livestock control measures. Replace or repair as necessary.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Routine maintenance of vegetation includes removal of hazardous trees and branches that threaten safety, buildings, fences, as well as vegetation along road shoulders, trails and similar features. Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

- Immediately repair any vandalism, vehicular, or livestock damage.
- Remove excess debris that may accumulate on or in the immediate area any structure.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Control livestock access to the structure. Livestock may be injured. Repair damaged vegetation and earthfills or accelerated soil erosion caused by livestock.
- Maintain grade control structures necessary for stream bottom and bank stability.
- Maintain stream bank protection facilities, i.e. rock jetties, bank riprap, rock barbs, log revetments, etc.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance of open channel systems and associated measures.

SPECIFIC RECOMMENDATIONS FOR YOUR OPEN CHANNEL

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR OPEN CHANNEL.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

584 – CHANNEL STABILIZATION
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly maintained channel stabilization project is an asset to your property. This practice was designed and installed to stabilize the bed or bottom of a stream. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Inspect the integrity of fences, access roads, water access, crossings and other livestock control measures. Replace or repair as necessary.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Routine maintenance of vegetation includes removal of hazardous trees and branches that threaten safety, buildings, fences, as well as vegetation along road shoulders, trails and similar features. Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.

- Remove excess debris that may accumulate on or in the immediate area any structure.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Control livestock access to the structure. Livestock may be injured. Repair damaged vegetation and earthfills or accelerated soil erosion caused by livestock.
- Maintain grade control structures necessary for stream bottom and bank stability.
- Maintain stream bank protection facilities, i.e. rock jetties, bank riprap, rock barbs, log revetments, etc.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

SPECIFIC RECOMMENDATIONS FOR YOUR CHANNEL STABILIZATION PROJECT

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR CHANNEL STABILIZATION PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

587 – STRUCTURE FOR WATER CONTROL

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained water control structure is an asset to your farm. This structure was designed and installed to safely convey water at condition that will prevent erosion. The estimated life span of this system is at least 10 years. The life of this system can be assured and usually increased by developing and carrying out a good operation and maintenance program.

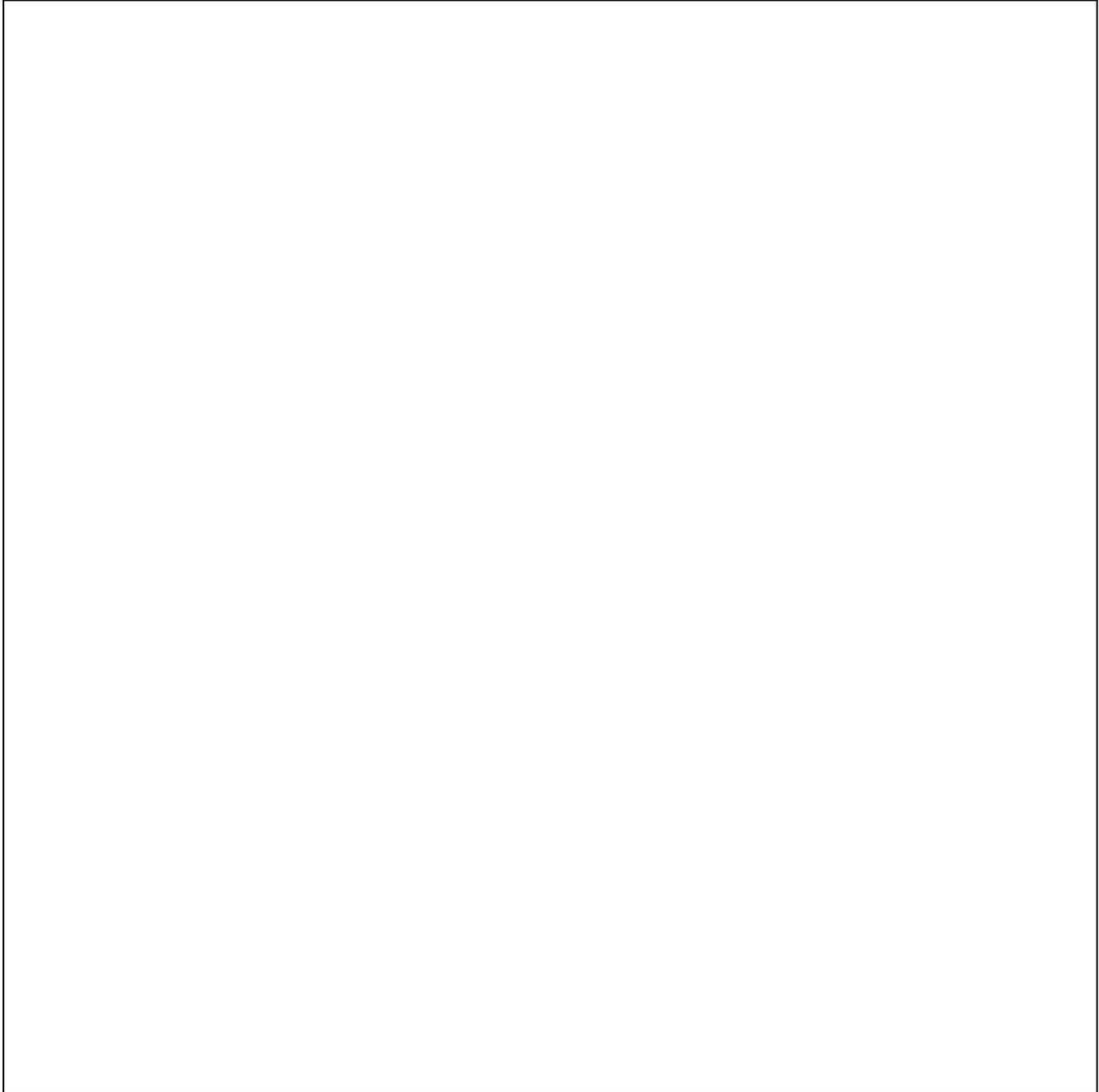
This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height.
- Remove any debris that may accumulate on or in the immediate area of the structure.
- Make sure that all structural drains are functional.
- Determine and eliminate causes of settlement or cracks in the earthen sections and repair damage.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Check all valves, gates and other appurtenances for proper functioning. If worn or damaged, repair or replace following the manufacturer's recommendations.
- Replace weathered or displaced rock riprap to constructed grade.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections and apply protective coatings as needed.

- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, or outlets or other apparatuses.

SPECIFIC RECOMMENDATIONS FOR YOUR STRUCTURE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR STRUCTURE FOR WATER CONTROL.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

596 – AGRICHEMICAL HANDLING FACILITY

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained agrichemical handling facility is an asset to your farm. This facility was designed and installed to capture, collect, recover, and to provide storage of agrichemical spills and rinsate in order to minimize the potential for pollution. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Do not allow human entry to any enclosed structure without appropriate safety equipment. Maintain appropriate warning signs.
- Inspect safety items twice a year and repair or replace as necessary.
- Ensure that all warning signs and safety instructions are posted in a visible location and in readable condition. Repair or replace as necessary. (Signage may include the following but are not limited to this list.)
 - Proper precautions to reduce worker exposure in operation of the AHF
 - Emergency response instructions in case of an accidental chemical spill, exposure, fire or other incident that could adversely affect environmental health.
 - Signs that warn that hazardous chemicals are present.
 - Condensed version of proper operating procedures for the AHF that is weather proof and easily noticed.
- Empty storage tank(s) to accommodate accidental spills and rinsate prior to mixing and rinsing events.

- Empty and clean the catchment sump and concrete slab after spills or rinsing events.
- Dispose or use rinsate, exterior washway accumulated sediment and spillage water in accordance with the chemical's label requirements and federal, state, and local laws and regulations.
- Maintain all pumps, agitators, piping, valves and all other electrical and mechanical equipment in good operating condition by following the manufacturer's recommendations. Repair as necessary.
- Test backflow prevention devices. Repair or replace as necessary.
- Repair spells, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Maintain grounding rods and wiring for all electrical equipment in good condition.
- Inspect haul roads and approaches to and from the Agricultural Handling Facility frequently to determine the need for stabilizing materials.
- All fences, railings, and/or warning signs shall be maintained to prevent unauthorized human or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

SPECIFIC RECOMMENDATIONS FOR YOUR AGRICULTURAL HANDLING FACILITY

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR AGRICULTURAL HANDLING FACILITY.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

600 – TERRACE

-OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained terrace is an asset to the farm. The terrace system was designed and installed to adequately protect the field(s) from excessive erosion. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

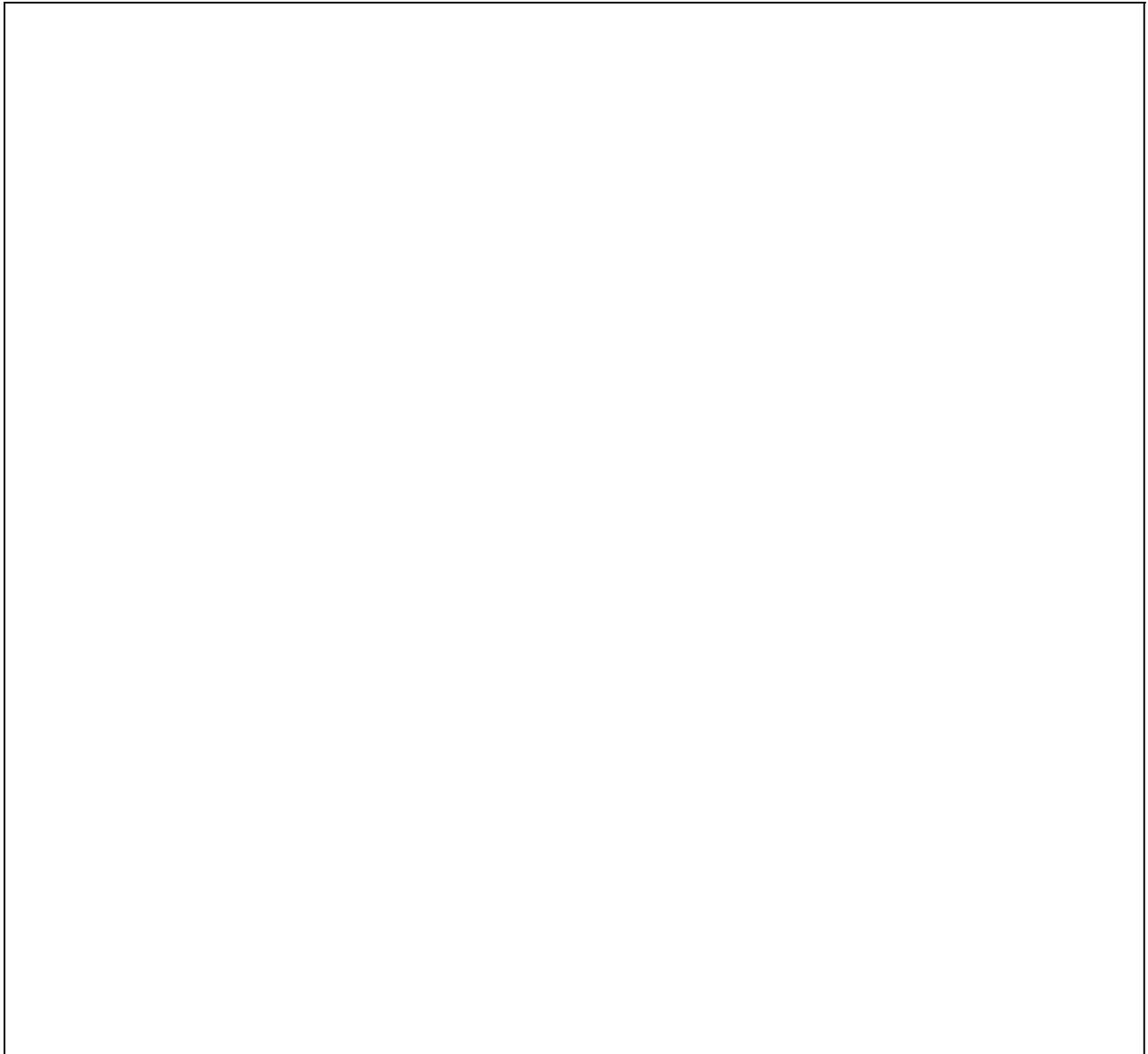
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain terrace capacity, storage, ridge height and outlets. Remove sediment build-up in terraces to maintain terrace capacity.
- Each inlet for underground outlets must be kept clean and sediment build-up redistributed so the outlet is the lowest elevation. Inlets damaged or cutoff by farm machinery must be replaced or repaired immediately.
- Terrace ridges, especially those with steep back slopes, can be very hazardous. For this reason, some farmers prefer steep front slopes, thus keeping machinery away from the steep back slopes. All cut and fill slopes that are to be farmed must be no steeper than those on which farm machinery can operate safely. Any potential hazard must be brought to the attention of the responsible person in charge of equipment operation.
- Remove all foreign debris that hinders system operation.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Maintain all vegetation by reseeding if necessary and remove all brush and trees by approved herbicides or mechanical means.
- Perform periodic inspections, especially after significant storm events and promptly repair any damage to the system.

- Avoid farm tillage operations such as cultivators that reduce the ridge height, resulting in reduced capacity of the terrace.
- Periodic plowing operations may be needed to maintain the constructed ridge height and capacity of terrace.
- Restrict livestock use of field with a terrace system when the ground is wet.

SPECIFIC RECOMMENDATIONS FOR YOUR TERRACE



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR TERRACE.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

606 - SUBSURFACE DRAIN
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

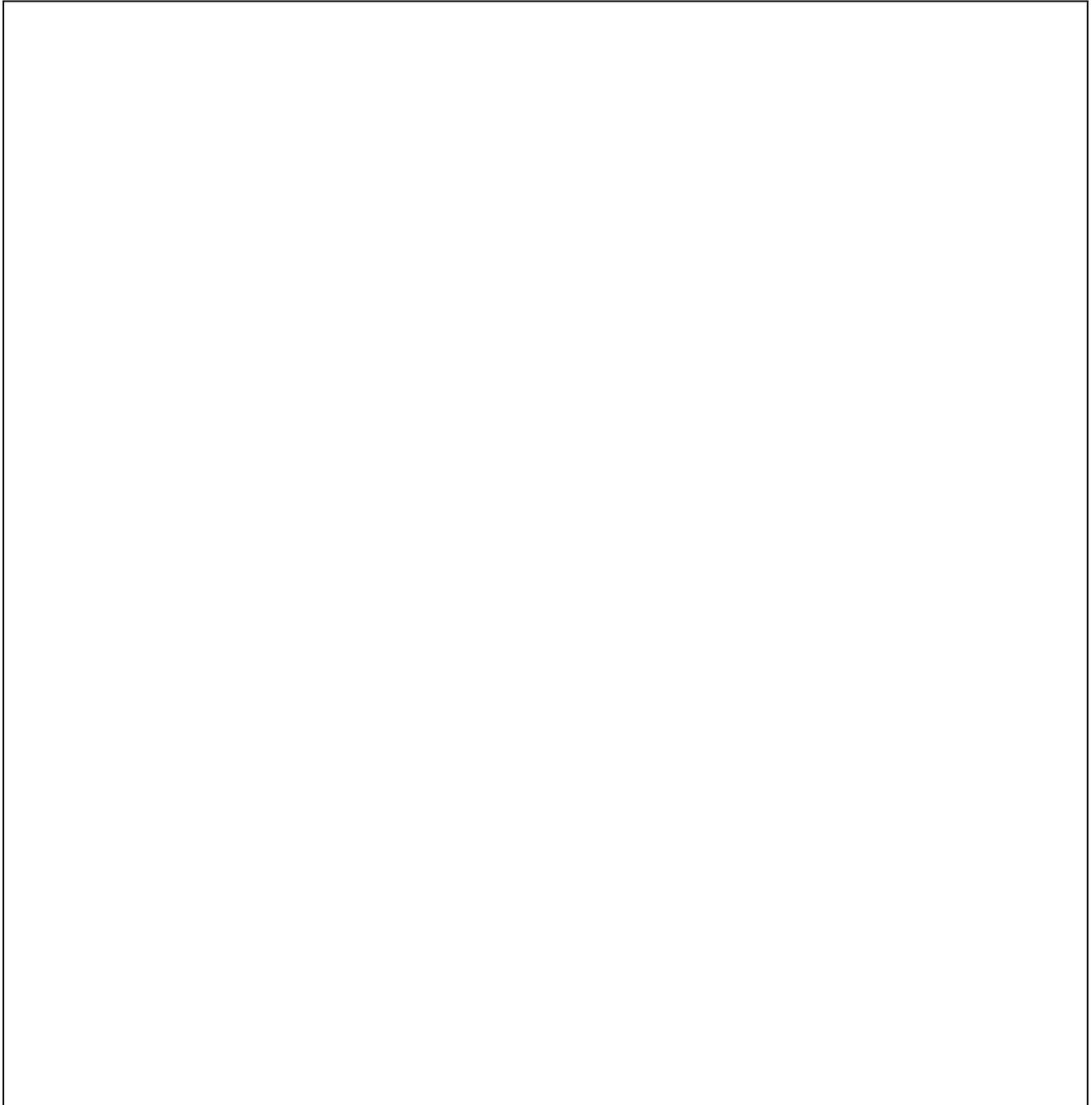
A properly operated and maintained subsurface drainage system is an asset to the farm. This drainage system was designed and installed to remove excess subsurface water with a system of buried conduits. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the design depth of cover.
- All settlement or cracks in the soil should be investigated to determine the cause and immediately repaired.
- Avoid travel by heavy equipment over drain lines when the soil is saturated except at designed crossings. Avoid travel over pipelines by tillage equipment when the soil is saturated. Limit traffic to sections that were designed for traffic loads.
- Avoid any subsoiling operation that may disturb the drain or its filter and/or envelope materials.
- Remove all foreign debris that hinders system operation.
- Immediately remove any obstructions or blockage of, trash racks, drain inlets or drain outlets.
- Maintain all outlets, rodent guards, inlets and access man-holes in good operating condition.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage to any outlets and appurtenances

SPECIFIC RECOMMENDATIONS FOR YOUR SUBSURFACE DRAIN



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR SUBSURFACE DRAIN.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

607 - SURFACE DRAINAGE - FIELD DITCH
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

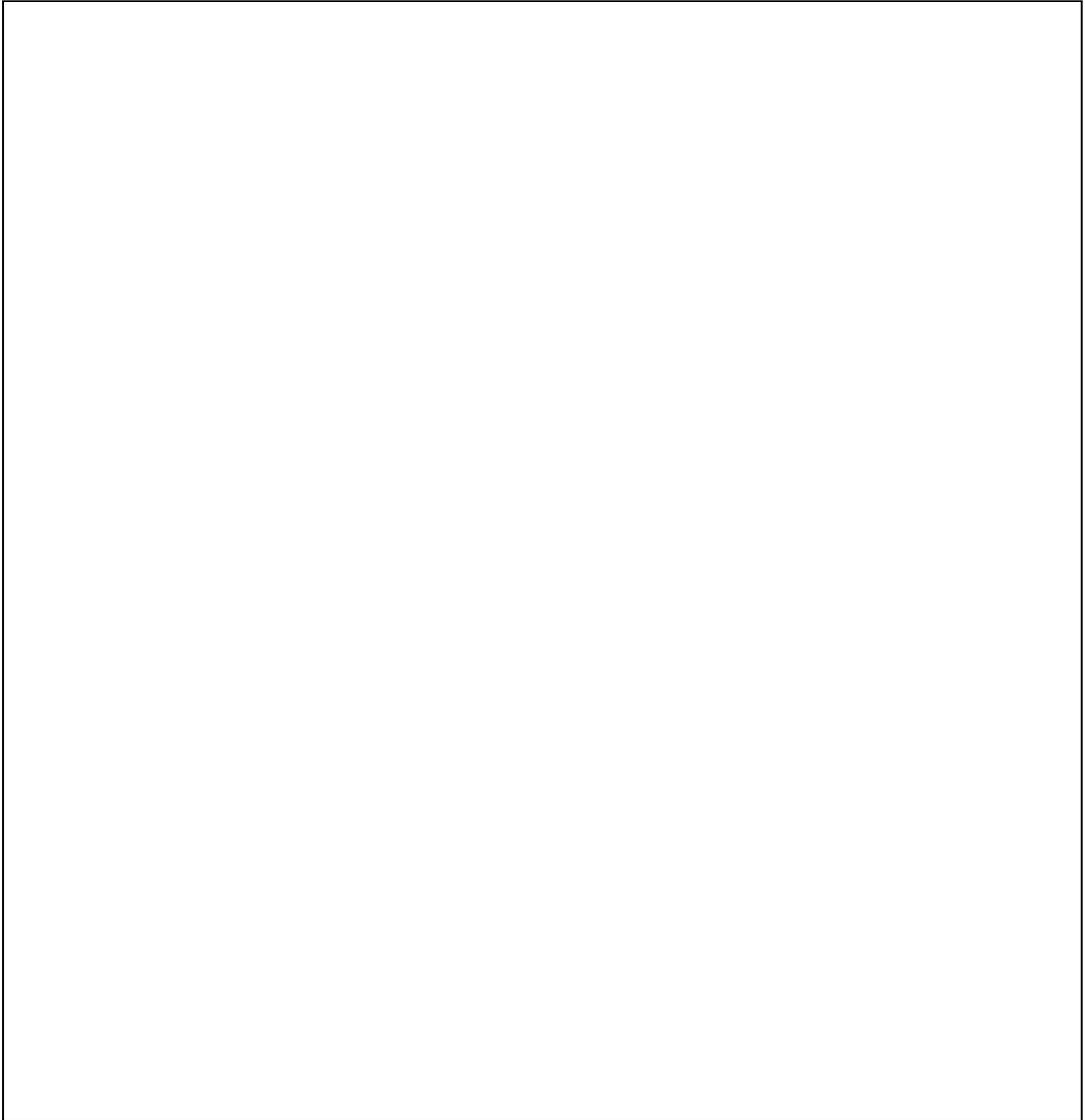
A properly operated and maintained surface drainage system is an asset to the farm. This drainage system was designed and installed to remove excess surface water with a system of field ditches. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain cross section and gradient by controlling channel erosion and sloughing.
- Immediately remove silt deposits, obstructions, or blockage of the drainage system that includes channel spillways, trash racks, inlets, or outlets.
- Control the growth of vegetative materials by the use of herbicides and/or mowing. Avoid direct drainage water contact with herbicides.
- Remove all foreign debris that hinders system operation.
- Install and maintain fences to control livestock access when adjacent fields are used for pasture.
- Replace weathered or displaced rock riprap to constructed grade.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR SURFACE DRAINAGE SYSTEM



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR SURFACE DRAINAGE SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

608 - SURFACE DRAINAGE – MAIN OR LATERAL
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

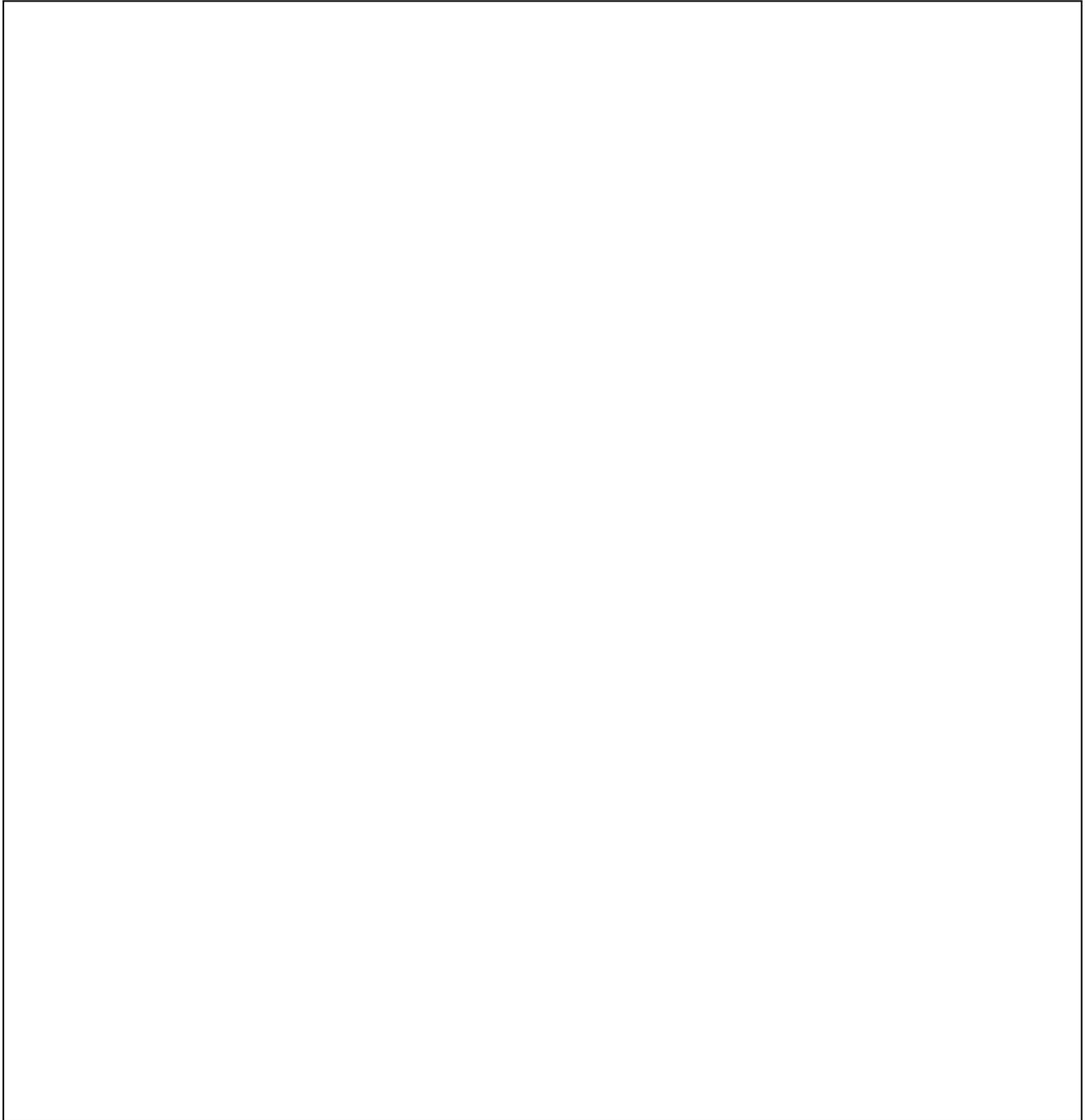
A properly operated and maintained drainage system is an asset to the farm. This drainage system of mains and/or laterals was designed and installed to remove excess surface and subsurface water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain cross section and gradient by controlling channel erosion and sloughing.
- Immediately remove silt deposits, obstructions, or blockage of the drainage system that includes channel spillways, trash racks, inlets, or outlets.
- Control the growth of vegetative materials by the use of herbicides and/or mowing. Avoid direct drainage water contact with herbicides.
- Remove all foreign debris that hinders system operation.
- Install and maintain fences to control livestock access when adjacent fields are used for pasture.
- Replace weathered or displaced rock riprap to constructed grade.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR SURFACE DRAINAGE SYSTEM



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR SURFACE DRAINAGE SYSTEM.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

614 – WATERING FACILITY
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained watering facility is an asset to the farm. This facility includes a delivery pipeline and a trough and was designed and installed to provide water for livestock and/or wildlife. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Check all above ground connections, valves, gates, rodent guards, inlets and outlets to make sure they are functioning properly. Check troughs and pipelines for leaks or cracks and repair or replace immediately, if necessary.
- Make certain the area adjacent to the trough is well protected with gravel, paving, or good cover. Be sure that the outlet pipe has a free outlet and is not causing any serious erosion problems.
- Check periodically to see if debris has fallen into the trough which may restrict inflow or planned functions of the outflow system.
- Clean the entire system periodically and remove moss, algae growth, and/or sludge. Chemicals such as copper sulfate and chlorine can be used to prevent moss and algae growth. Local rules and regulations are to be followed when recommending chemicals making sure, any used are safe for animals.
- Check the automatic water level device to insure proper operation.
- Maintain, where necessary, coverings and insulation to prevent damage by freezing.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control growth.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.

- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR WATERING FACILITY

Add additional guidance for winter weather as appropriate.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WATERING FACILITY.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

620 – UNDERGROUND OUTLET
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

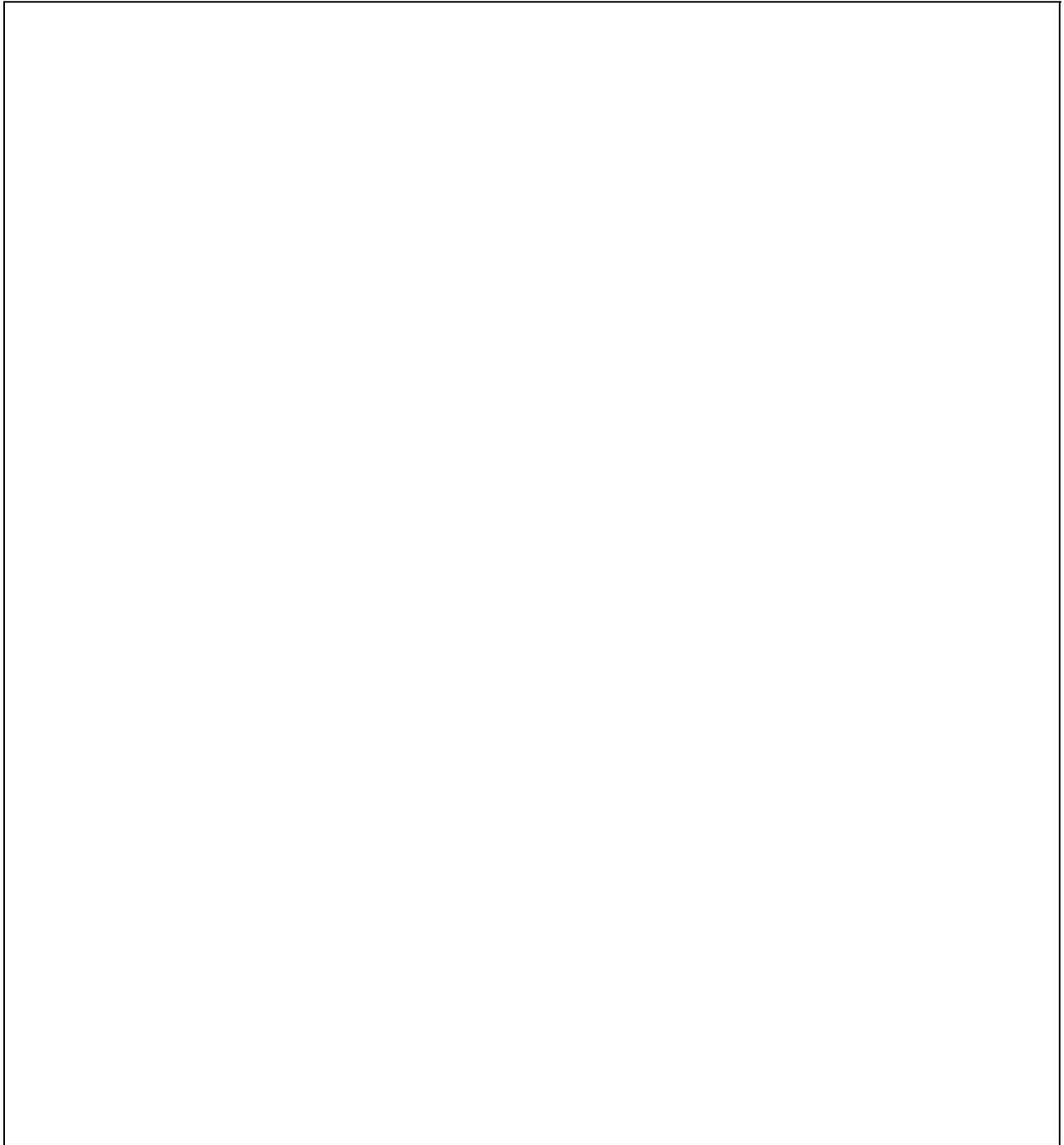
A properly operated and maintained underground outlet is an asset to the farm. This outlet was designed and installed to pressurize and convey water in a pipeline where it can be released without causing erosion. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Inspect all above ground connections, valves, gates, trash racks, rodent guards, inlets and outlets to make sure they are functioning properly. Remove any trash or debris and promptly repair if necessary.
- Maintain design depth of cover on all pipelines and structures.
- Avoid operation of tillage and subsoiling equipment that could damage any component of the system.
- Remove all foreign debris that hinders system operation.
- Limit traffic over pipeline to designated sections that were designed for traffic loads.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control growth.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.
- Repair leaks and broken or crushed pipes to insure proper functioning of the conduit.

SPECIFIC RECOMMENDATIONS FOR YOUR UNDERGROUND OUTLET



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR UNDERGROUND OUTLET.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

630 – VERTICAL DRAIN

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

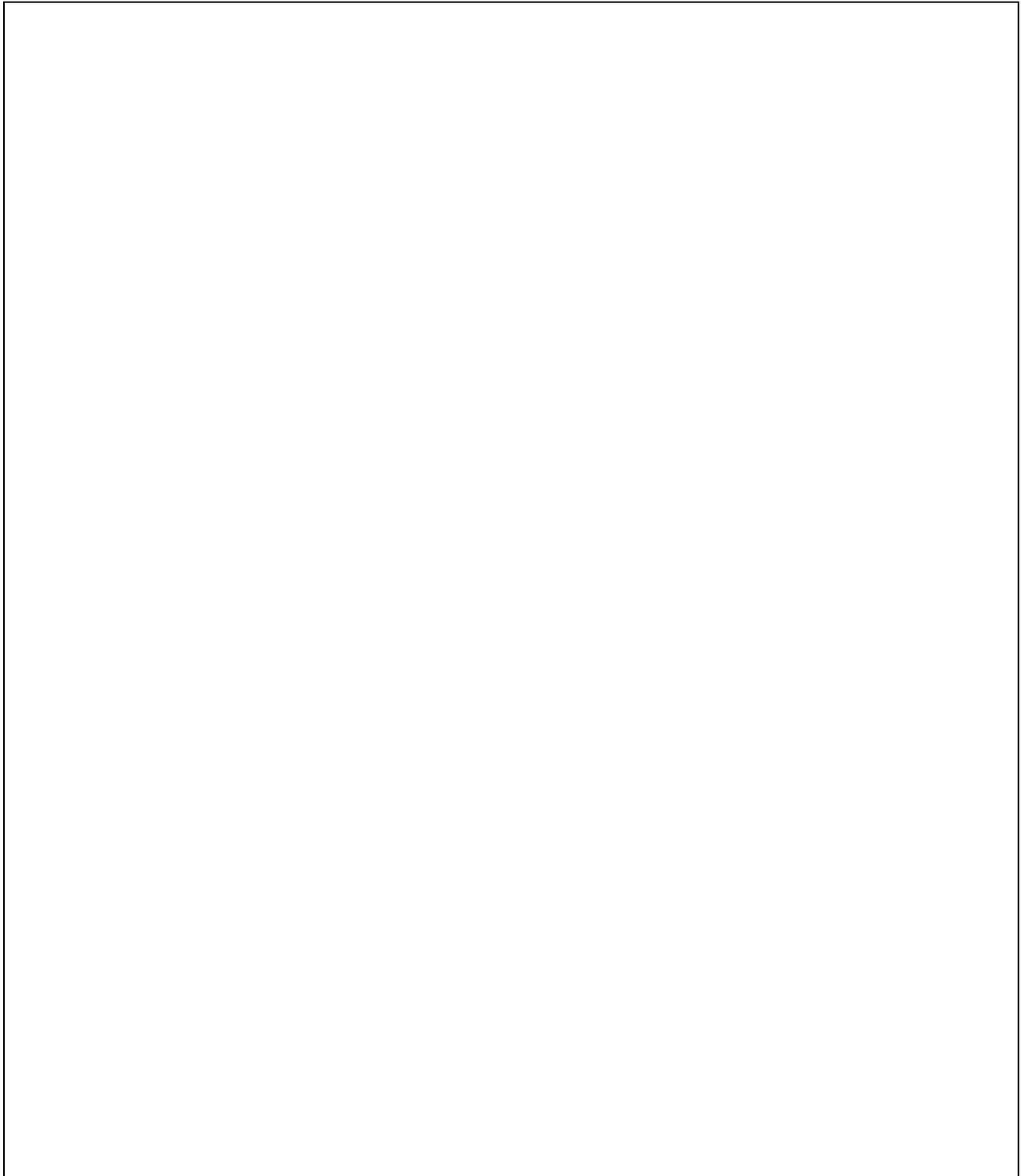
A properly operated and maintained vertical drain is an asset to the farm. This vertical drain was designed and installed to provide an outlet for drainage water from a surface or subsurface drainage system. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the well cover securely in place.
- Protect the area from being damaged by agriculture machinery, vehicles, or livestock.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Do not allow any foreign debris to accumulate in the immediate vicinity. Remove debris or sediment from the desilting basin.
- Maintain the filter system in accordance with manufacturer's specifications.
- Maintain soil and vegetative covering to the design conditions.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Check metal surfaces for rust and other damage especially sections in contact with earthfill and with other materials. Repair or replace damaged section and apply paint as a protective covering.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR VERTICAL DRAIN



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR VERTICAL DRAIN.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

634 – MANURE TRANSFER

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

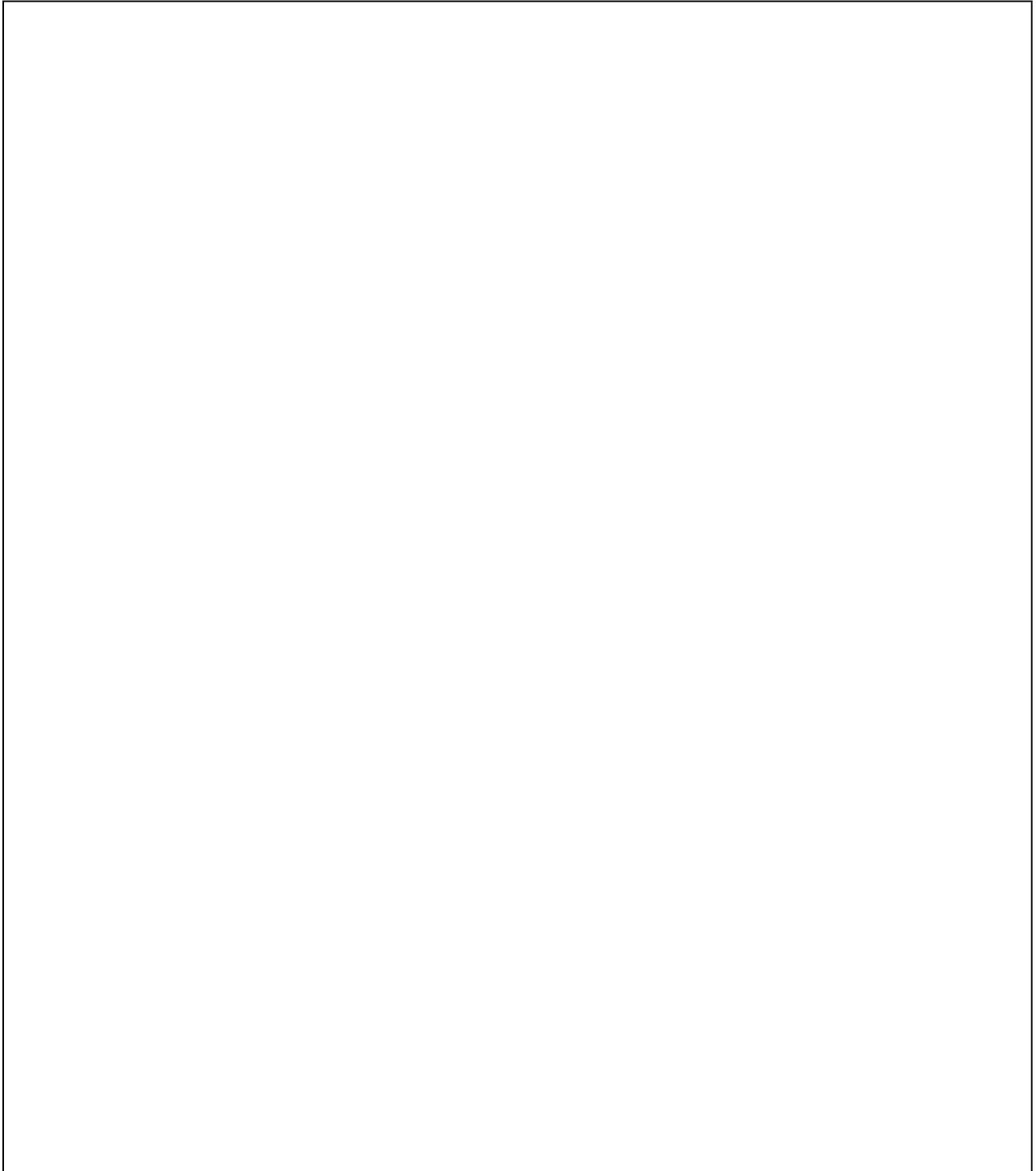
A properly operated and maintained manure transfer system is an asset to the farm. This system was designed and installed to convey animal wastes between collection and storage areas and/or to fields for crop use of nutrients. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Periodically check all above ground pipeline connections and structures for proper operation, including leaks. A 1.0 gal/min leak totals over 1400 gal/day and 10,000 gal/week. Repair leaks immediately.
- Determine cause of cracks and structure displacement, and repair as needed.
- Periodically clean trash racks and sumps to maintain design capacity and efficiency.
- Prevent excessive solid waste and bedding from entering water conveyance facilities. Properly cleaned and maintained screens help minimize required system maintenance.
- Periodically flush pipelines, etc. with clean water to remove/reduce accumulated solids buildup.
- Perform motor and engine maintenance according to a fixed schedule based on hours of operation, days, weekly, etc.; in addition to “as needed” maintenance based on visual observation or audio sensing.
- Maintain manure spreaders and wagons per manufacturer recommendations.
- Maintain pumps, agitators, separators, structures, storage facilities, conveyance pipelines and in good operating condition by performing O & M per specific recommendations of manufacturer for each component.

SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT

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CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR MANURE TRANSFER PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

635 – WASTEWATER TREATMENT STRIP
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained wastewater treatment filter strip is an asset to your farm. This vegetated wastewater treatment strip was designed and installed to remove sediment and pollutants from agricultural wastewater and runoff. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Remove all foreign debris that hinders system operation.
- Harvest treatment strip vegetation as appropriate to encourage dense growth, maintain an upright growth habit, and remove nutrients and other contaminants that are contained in the plant tissue.
- Control undesired weed species, especially state-listed noxious weeds.
- Inspect and repair treatment strips after storm events to fill in gullies, remove flow disrupting sediment accumulation, re-seed disturbed areas, and take other measures to prevent concentrated flow.
- Apply supplemental nutrients as needed to maintain the desired species composition and stand density of herbaceous vegetation.
- Maintain or restore the treatment strip as necessary by periodically grading when deposition jeopardizes its function, and then reestablishing to herbaceous vegetation.
- Routinely de-thatch and/or aerate treatment strips used for treating runoff from livestock holding areas in order to promote infiltration.
- Conduct maintenance activities only when the treatment strip is dry and moisture content in the surface soil layer will not allow compaction.

- Prevent grazing in treatment strips.
- Inspect filter strips regularly, especially following heavy rains. Inspect filter strips annually for damage due to normal use. Repair and reseed eroded areas immediately. Remove sediment deposits to maintain capacity of filter strip.
- Seeding shall be protected from concentrated flow and grazing until vegetation is established.
- Promptly repair all broken subsurface drain lines adjacent to or in the waterway.
- Maintain all sediment control measures in the contributing watershed to prevent sedimentation and the resulting loss of capacity.
- Filter strips in arid or semiarid regions that potentially could be affected by high salinity and/or sodicity (sodium content) should be monitored for excessive salt and sodium buildup. If found to be excessive, an appropriate corrective action shall be taken

SPECIFIC RECOMMENDATIONS FOR YOUR WASTEWATER TREATMENT STRIP

Provide application rates (seasonal rates may differ).

Provide filter resting time.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WASTEWATER TREATMENT STRIP.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

636 – WATER HARVESTING CATCHMENT

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained water harvesting catchment is an asset to the farm. This structure was designed and installed to collect and store precipitation and provide water for livestock and/or wildlife. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

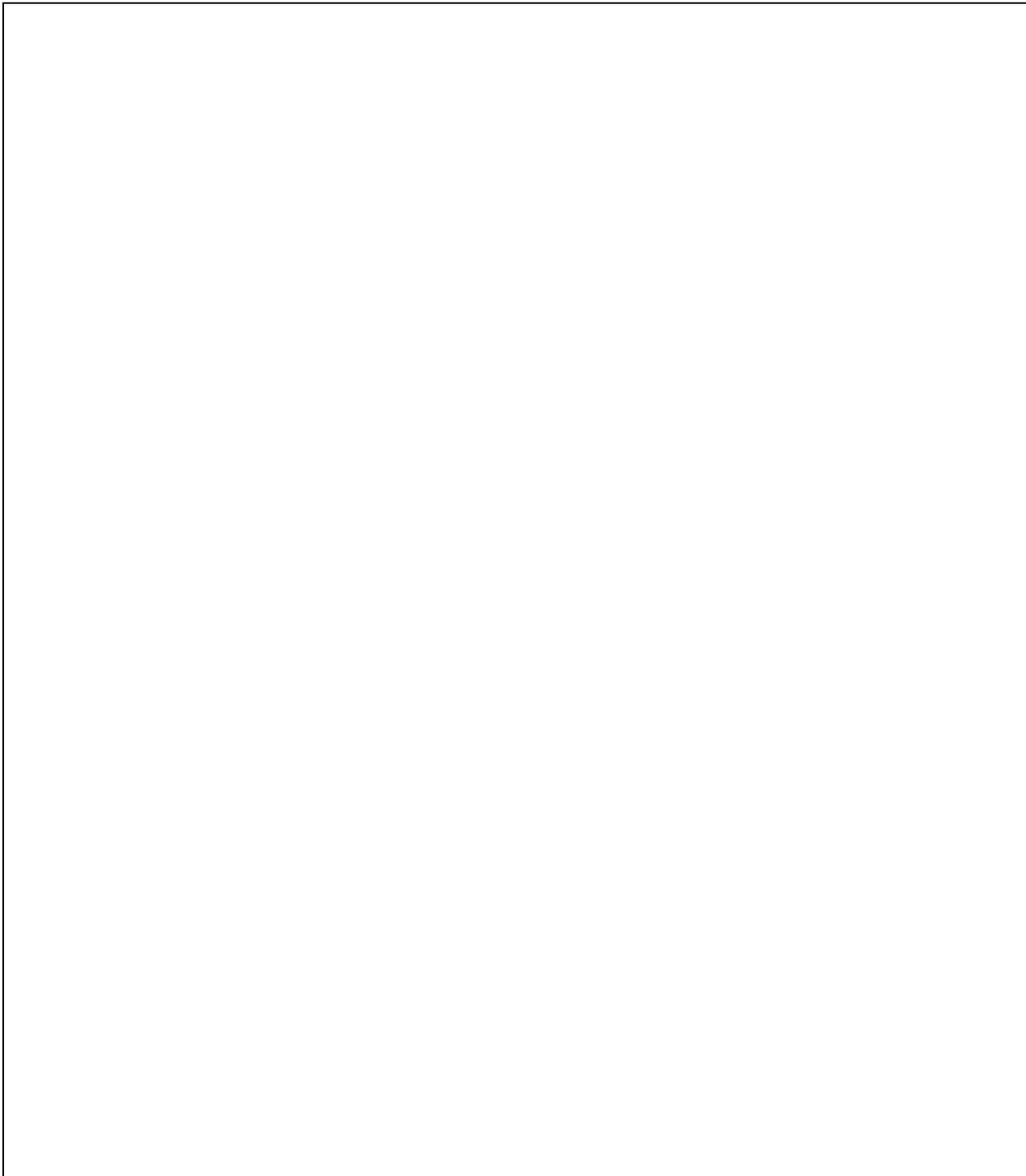
This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Repair or replacement of damaged components. Repair storage tank and pipeline leaks, and damage to apron surfaces caused by livestock and wildlife.
- Insure all lap joints and edges are properly sealed to prevent water loss and wind from gaining access under membranes type catchments. Maintain uniform depth by rearranging or replacing aggregate covering materials when needed.
- Apply asphalt emulsion seal coats on asphalt and asphalt-fabric catchments at regular 3 - 5 year intervals, or shorter intervals if required.
- Seal cracks in concrete, asphalt, wax, and rock or paving catchment aprons.
- Remove debris and litter from the catchment apron, outlet pipe, storage tank and area around the facility.
- Periodically check elevations of earthfills and restore grade, if necessary.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control growth.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.



SPECIFIC RECOMMENDATIONS FOR YOUR PROJECT



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WATER HARVESTING CATCHMENT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

638 – WATER AND SEDIMENT CONTROL BASIN
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained Water and Sediment Control Basin is an asset to your farm. This sediment basin was designed and installed to remove, collect and provide temporary storage of sediment and water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

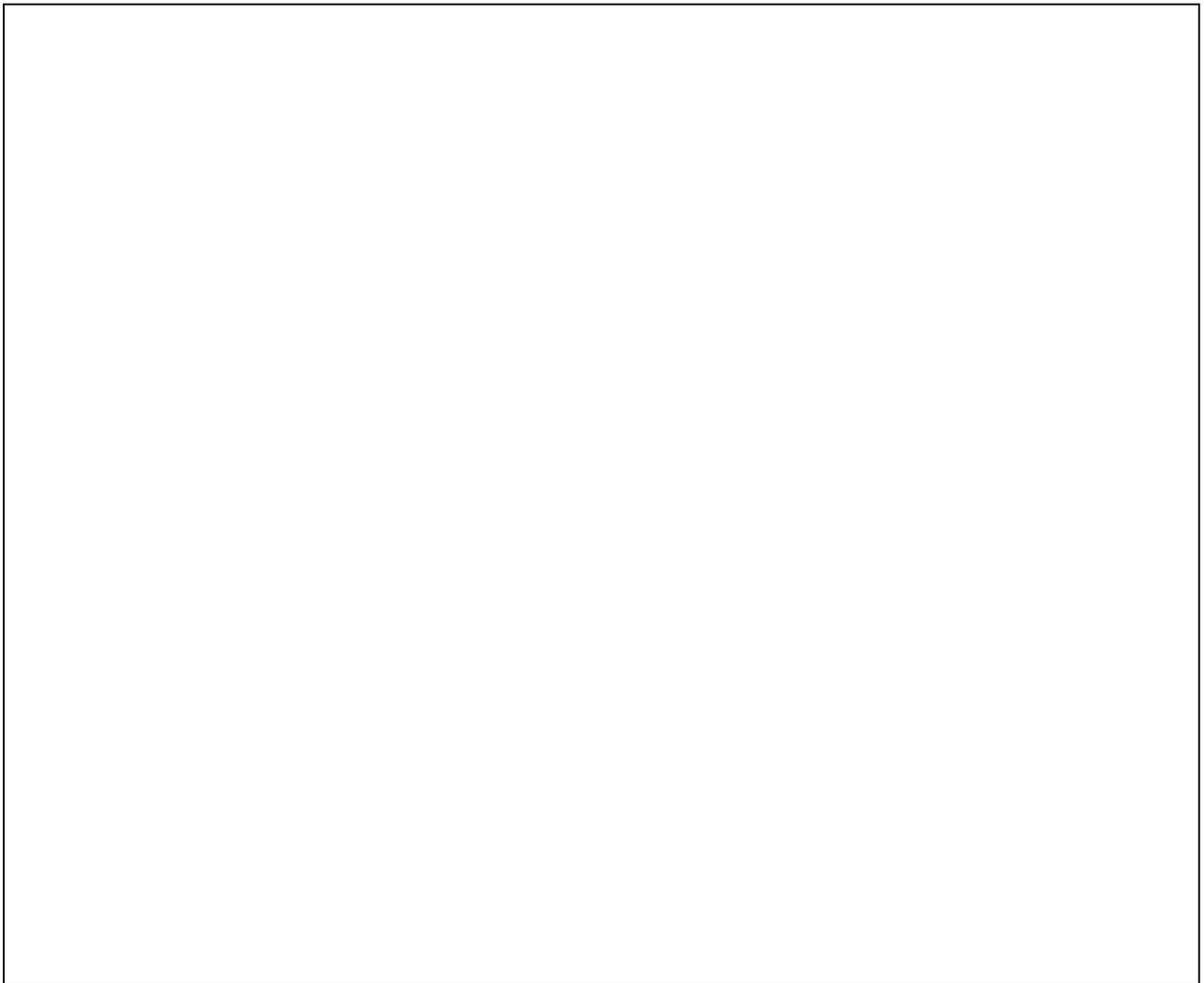
This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Periodic removal of sediment is necessary to maintain the effectiveness of this installation. The cleanout intervals may vary depending upon the volume of sediment that has accumulated. As a general rule the basin will lose its effectiveness when about 50 percent of the design volume is filled with sediment.
- Periodically inspect the spillways and control gates for proper functioning for their ability to maintain the water level to design elevations. Immediately remove any blockage or obstructions in spillways.
- Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Periodic mowing may also be needed to control height.
- If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.
- Immediately repair any vandalism, vehicular, or livestock damage to any earthfills, spillways, outlets or other appurtenance.
- Removal of debris that may accumulate at the pond and immediately upstream or downstream from the basin.
- Make sure all structure drains are functional and soil is not being transported through the drainage system. The screens and/or rodent guards shall also be kept in place.

- Repair spells, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Remove woody vegetation from embankments.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

SPECIFIC RECOMMENDATIONS FOR WATER AND SEDIMENT CONTROL BASIN



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE FOR YOUR WATER AND SEDIMENT CONTROL BASIN.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

640 – WATER SPREADING

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained water spreading system is an asset to the farm. This system was designed and installed to provide beneficial use of surface runoff with a system of stream flow diversion structures and spreading ditches. The estimated life span of this installation is at least 5 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain cross-section and gradient in all spreading ditches.
- Maintain design elevations and cross section of diversion dikes and appurtenances. Repair or replace side slope damage where needed.
- Remove all foreign debris, trash and excess vegetation that hinders system operation.
- Check all structures and rock riprap sections for accelerated weathering and displacement. Replace to original grades as necessary.
- Maintain vigorous growth of vegetation on disturbed areas. Re-seed and fertilize as necessary to maintain stand and growth.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR WATER SPREADING PROJECT

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide specific recommendations for their water spreading project.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WATER SPREADING PROJECT.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

642 – WATER WELL

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

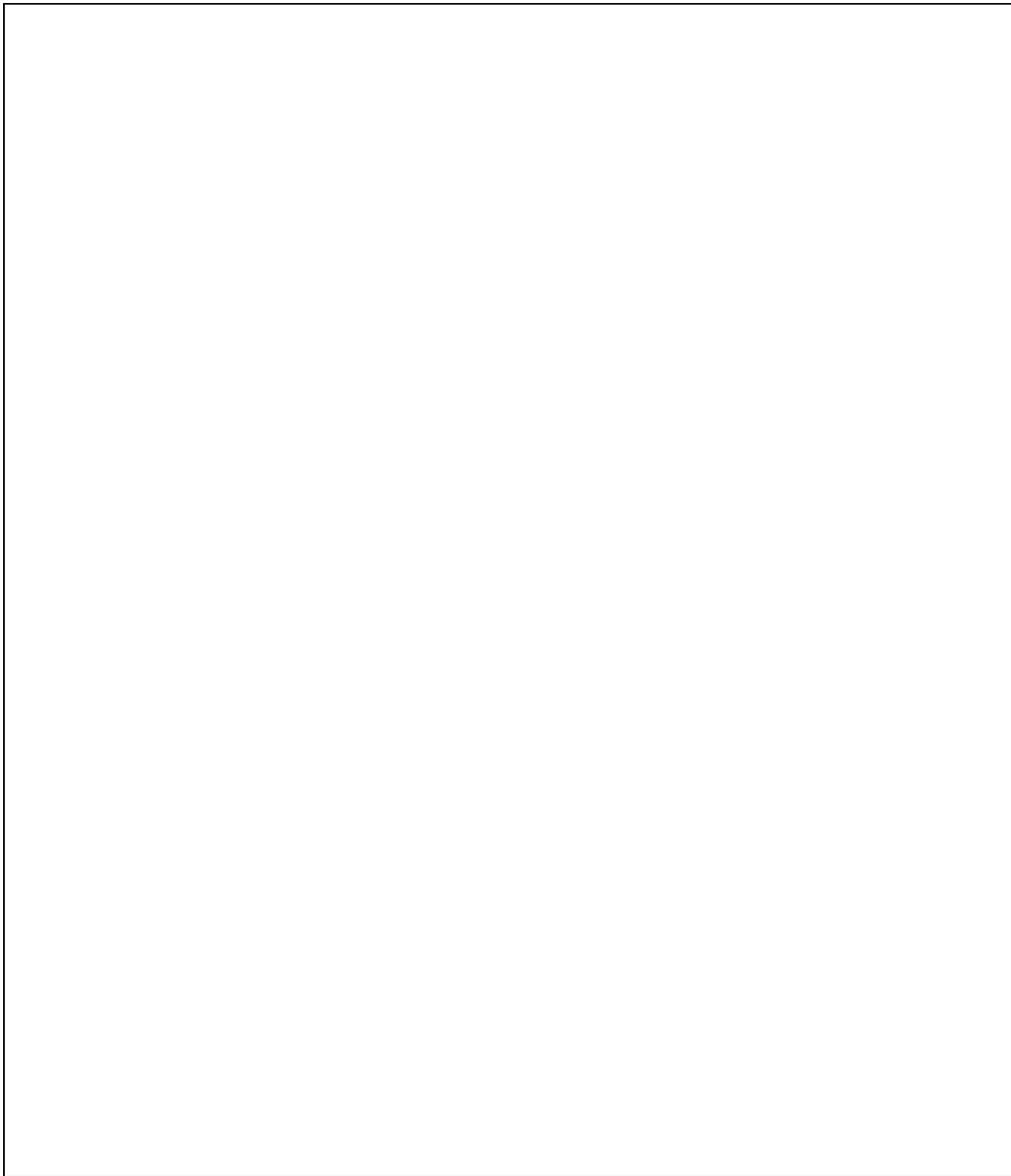
A properly operated and maintained well is an asset to the farm. This well was designed and installed to provide beneficial use of subsurface water. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program:

GENERAL RECOMMENDATIONS

- Maintain the well cover securely in place.
- Protect the area from being damaged by agriculture machinery, vehicles, or livestock.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Do not allow any foreign debris to accumulate in the immediate vicinity.
- Maintain soil and vegetative covering to the design conditions.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Check metal surfaces for rust and other damage especially sections in contact with earthfill and with other materials. Repair or replace damaged section and apply paint as a protective covering.
- Keep all surface water from entering or accumulating at the immediate vicinity of the well site.
- Immediately repair any vandalism, vehicular, or livestock damage.

SPECIFIC RECOMMENDATIONS FOR YOUR WATER WELL



CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WATER WELL.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

656 – CONSTRUCTED WETLAND

OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained constructed wetland is an asset to your farm. This constructed wetland was designed and installed to reduce the pollution potential of runoff and wastewater from agricultural lands to water resources. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation and maintenance to maintain satisfactory performance. Constructed wetlands are operated and maintained by controlling the water's quantity, quality, depth and flow rate. Results from regular monitoring should guide the wetland operation. Monitoring includes general observations of water control structures and plant health, as well as periodic sampling of parameters such as BOD₅ (Biological Oxygen Demand for 5 days), TSS, nitrogen and phosphorus. Here are some recommendations to help you develop a good operations and maintenance program.

GENERAL RECOMMENDATIONS

- Maintain water levels in the wetland cells as appropriate for the vegetation.
- Control flows into the wetland in accordance with the wetland budget. Adjust as needed for periods of drought, increasing inflow rates to ensure that vegetation at the extremities of the wetland are kept wet during dry times.
- Lower water levels in the pre-treatment unit and downstream storage pond to appropriate levels in preparation for winter storage.
- Collect samples and measure flow rates into and out of the constructed wetland regularly. Determine treatment efficiencies and nutrient mass loadings.
- Sample wastewater in the downstream storage pond prior to land application. Determine fill rates of the pond to determine total nutrient loading.
- Revise water budget as necessary.

- Inspect inlet and outlet structures for plugging and damage on a daily basis. Repair as necessary.
- Inspect embankments at least weekly for damage and repair as needed.
- Remove all foreign debris that hinders system operation.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Mow embankments to allow for inspections and to enhance visual appeal.
- Inspect and repair fences as needed.
- Inspect and repair pumps and piping systems as needed.
- Inspect vegetation frequently throughout the growing season. Replace plants that are not performing as expected.

SPECIFIC RECOMMENDATIONS FOR YOUR CONSTRUCTED WETLAND

Provide baseline water quality data for destination system, where appropriate (seasonal data may differ).

Provide application rates (seasonal rates may differ).

Specify frequency and types of water quality testing.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR CONSTRUCTED WETLAND.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

657 – WETLAND RESTORATION
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained restored wetland is an asset to the farm. This project was designed and installed to reestablish wetlands for the benefit of wildlife, flood protection, sediment abatement, groundwater recharge, aesthetics and the improvement of water quality.

The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Any use of fertilizers, mechanical treatments, prescribed burning, pesticides and other chemicals to assure the wetland enhancement function shall not compromise the intended purpose.
- Biological control of undesirable plant species and pest (e.g., using predator or parasitic species) shall be implemented where available and feasible.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height. Haying and livestock grazing, disking, crusting, and mowing may be utilized to manage vegetation.

- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.
- Periodically check the elevation of the earthfills and restore to grade, if necessary.
- Annually inspect embankments and structures for damage assessment. Remove all foreign debris that hinders system operation.
- Periodically inspect flap gates, control gates, valves and other appurtenances for proper functioning, and their ability to maintain the water level to design elevations. Immediately remove any blockage or debris that could cause malfunction. At approximately 3 month intervals exercise gates and valves to help assure proper function.
- Make sure that all structure drains are functional and soil is not being transported through the drainage system. Keep screens and/or rodent guards maintained and in place.
- Determine and eliminate causes of settlement or cracks in the earthen sections and repair damage.
- Check all rock riprap sections for accelerated weathering and displacement. Replace to original grades if necessary.
- Remove woody vegetation from embankments.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

SPECIFIC RECOMMENDATIONS FOR YOUR WETLANDS

<u>Provide timing and amount of supplemental water.</u>

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WETLANDS.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

658 – WETLAND CREATION
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained wetland is an asset to the farm. This project was designed and installed to create wetlands that have natural hydrology or artificial water supplies necessary to establish wetland functions and values, hydrophytic plant communities and hydric soil conditions. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Any use of fertilizers, mechanical treatments, prescribed burning, pesticides and other chemicals to assure the wetland enhancement function shall not compromise the intended purpose.
- Biological control of undesirable plant species and pest (e.g., using predator or parasitic species) shall be implemented where available and feasible.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height. Haying and livestock grazing, disking, crusting, and mowing may be utilized to manage vegetation.

- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.
- Periodically check the elevation of the earthfills and restore to grade, if necessary.
- Annually inspect embankments and structures for damage assessment. Remove all foreign debris that hinders system operation.
- Periodically inspect flap gates, control gates, valves and other appurtenances for proper functioning, and their ability to maintain the water level to design elevations. Immediately remove any blockage or debris that could cause malfunction. At approximately 3 month intervals exercise gates and valves to help assure proper function.
- Make sure that all structure drains are functional and soil is not being transported through the drainage system. Keep screens and/or rodent guards maintained and in place.
- Determine and eliminate causes of settlement or cracks in the earthen sections and repair damage.
- Check all rock riprap sections for accelerated weathering and displacement. Replace to original grades if necessary.
- Remove woody vegetation from embankments.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

SPECIFIC RECOMMENDATIONS FOR YOUR WETLANDS

Provide timing and amount of supplemental water.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WETLANDS.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

659 – WETLAND ENHANCEMENT
OPERATION AND MAINTENANCE

Sponsor/Land user: _____ Date: _____

Address: _____

Location GPS Coordinates Map Datum: _____ E _____ N _____

Quad Sheet Name _____ SEC _____ T _____ R _____

A properly operated and maintained wetland is an asset to the farm. This project was designed and installed on a degraded or existing wetland where the objective is to specifically enhance a selected wetland function(s) and/or value(s). The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic operation to maintain satisfactory performance. Additional permits may be required to perform this work. Here are some recommendations to help you develop a good operation and maintenance program.

GENERAL RECOMMENDATIONS

- Any use of fertilizers, mechanical treatments, prescribed burning, pesticides and other chemicals to assure the wetland enhancement function shall not compromise the intended purpose.
- Biological control of undesirable plant species and pest (e.g., using predator or parasitic species) shall be implemented where available and feasible.
- Soil bioengineering measures should be assessed during drought and immediately after high flows. Inspection of bank and channel measures should be conducted during low-water conditions to allow viewing of the measure as well as changes to the stream bed that may affect future integrity of the system. Early failure is an inherent risk of soil bioengineered structures systems that are not fully effective until the plants are well rooted and the stems reach a particular size and density. Repair and replant as required.
- Periodically remove bars that can cause reduced capacity and damage to stream channel stability and bank protection taking into consideration fish habitat, fill and removal permit regulation and period of the year work can be performed in the water portion of the stream.
- Maintain vigorous growth of desirable vegetative coverings. This includes reseeding, fertilization, and controlled application of herbicides when necessary. Periodic mowing may also be needed to control height. Haying and livestock grazing, disking, crusting, and mowing may be utilized to manage vegetation.
- Avoid excessive travel on any portion of the system that will harm or destroy the vegetative cover.

- Periodically check the elevation of the earthfills and restore to grade, if necessary.
- Annually inspect embankments and structures for damage assessment. Remove all foreign debris that hinders system operation.
- Periodically inspect flap gates, control gates, valves and other appurtenances for proper functioning, and their ability to maintain the water level to design elevations. Immediately remove any blockage or debris that could cause malfunction. At approximately 3 month intervals exercise gates and valves to help assure proper function.
- Make sure that all structure drains are functional and soil is not being transported through the drainage system. Keep screens and/or rodent guards maintained and in place.
- Determine and eliminate causes of settlement or cracks in the earthen sections and repair damage.
- Check all rock riprap sections for accelerated weathering and displacement. Replace to original grades if necessary.
- Remove woody vegetation from embankments.
- Inspect for damage from rodents or burrowing animals. Repair any damage. Take appropriate corrective actions to alleviate further damage.
- Immediately repair any vandalism, vehicular, or livestock damage.
- All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.
- Check all timber or lumber sections for decay and other damage, especially sections in contact with earth or other materials. Repair damaged sections.
- Repair spalls, cracks and weathered areas in concrete surfaces.
- Repair or replace rusted or damaged metal and apply paint as a protective coating.
- Maintain safety measures for protection of people and animals.
- Maintain travel-ways that provide access for operation and maintenance.

SPECIFIC RECOMMENDATIONS FOR YOUR WETLANDS

Provide timing and amount of supplemental water.

CONTACT YOUR LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE FOR ANY ADDITIONAL TECHNICAL ASSISTANCE YOU MIGHT NEED FOR IMPLEMENTATION OF THIS OPERATION AND MAINTENANCE PLAN FOR YOUR WETLANDS.