Dittmer Farms, Inc.


Before project

Size:
1000 Swine Feeder to Finish

Challenge:

This project is located near Bruning, Nebraska, in Fillmore County. The site is a decommissioned open building swine operation. Perry Dittmer, owner and operator, built the swine facility in 1983 and quit production in 2003. Mr. Dittmer wanted to close the lagoon since the facility wouldn't be feeding pigs anymore. An intermittent creek is close by and he wanted to reduce his environmental risk by closing the lagoon.

Demonstrated Practices:

- Lagoon Abandonment
- Sludge/Manure Land Application

ETF Contribution	Producer Contribution	Total Project Cost
$16,150	$5,940	$22,090
Demonstrated Practices: Lagoon Abandonment, Sludge/Manure Land Application		

Design Objectives:

The liquid and solid portion of the lagoon was pumped and applied to the adjacent crop land at agronomy rates. Excess solid sludge was excavated and land applied on a nearby 120 acre field owned by Mr. Dittmer. The lagoon was filled in with clean dirt from existing berms and graded to eliminate any pooling of water. Drainage from the building was diverted around the lagoon site to prevent erosion. The filled in area was planted back to native grass and after establishment, the area can be used as part of the existing range for summer pasture.

Design:

The sludge in the lagoon and crop field soils was sampled and the sludge application rate was calculated to apply a five-year supply of P_2O_5 for irrigated corn. The liquid and slurry portions of the lagoon were agitated, pumped, and applied to a nearby corn field. After the liquid portion was applied, the remaining solid sludge in the bottom of the lagoon was then excavated out of the lagoon with a dozer and excavator. Care was taken to not disturb the compacted clay liner in the lagoon while the solids were removed. The solids were stock piled at a safe location on a field edge to be applied to the crop field at a more appropriate time. The lagoon held about 74,000 cubic feet of liquid sludge and 2,500 cubic yards of solid sludge.

After the sludge was removed and stock piled, the lagoon was ready to be filled in. The embankments of the lagoon were pushed in and the land area graded back to original slope. There was some over fill to allow for settlement and for the area to drain. Since the buildings and concrete were left intact, a diversion was constructed to route any runoff water away from the old lagoon site. The land area was then planted to native grass to help control erosion.

Liquid application

During construction

Environmental Benefits:

With the nutrients removed and the lagoon sloped to prevent infiltration of rainwater, any remaining nutrients are isolated and the risk of groundwater contamination has been minimized. The nutrients in the liquid and solid portions of the sludge were land applied at agronomic rates. Now the nutrients in the sludge are an excellent fertilizer for the crops.

Completed project

University of Nebraska Lincoln

UNL Extension

Livestock Producer *Environmental Assistance Project*
Minimizing risk for small, environmentally conscientious livestock producers.

The Nebraska Environmental Trust

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