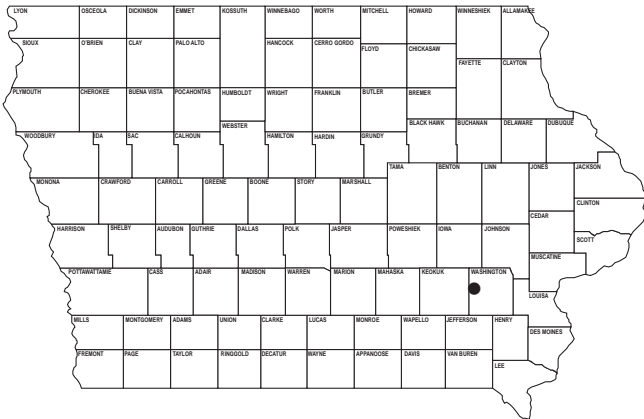


Feedlot Runoff Control

Demonstration Site: Swine Lot



Location

Washington County

Operator

Charles Sieren
1030 190th Street
Keota, IA 52248
Phone: (515) 636-2151

Please call for a viewing appointment.

Charles Sieren operates a grain and hog farm just north and east of Keota. Seven outside concrete lots hold finishing hogs that sleep in sheds on the north or west sides of the lots. Solids from the lots were causing nearby grass and crops to die, and generally were causing problems. Solids settling was needed. The system, designed and built by Sieren and a contractor, utilizes settling *tanks*, rather than basins.

Directions

Go east through Keota to the golf course, then 1 mile north on V-15, and 1/4 mile east on G-26.

Lot Description

Seven lots are in three different locations around the farmstead. Each lot has less than 2 percent slope. The total capacity of all seven lots is 850 finishing hogs. Total lot area is about 12,800 square feet, so each pig has about 15 square feet of outside lot space.



Charles Sieren's runoff control system features seven concrete lots served by three settling tanks. Two of the tanks are visible in the extreme lower right and top center of the photo.

Operator's Comments

"If I were to do it over, I would lower two of the pits for more capacity. Otherwise, the system works fine."

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Runoff Control System

Gutters and downspouts collect roof water and divert it to tile outlets, away from the lots. Concrete fences surround each pair of lots to contain lot runoff and divert outside water. The fences channel runoff into 8-inch diameter PVC pipes. Most of the solids remain on the lots. The lots are scraped weekly, except during the winter when they're scraped twice a week.

PVC pipes run either underground or at the ground surface to carry manure runoff from the lots to settling tanks. The settling tanks are three 8-foot-deep concrete pits. Four-inch diameter outlet pipes allow runoff liquid to leave the pits after the solids are settled.

The pits vary in size. The surface area of each pit is approximately 1/22nd of the lot surface area. With 8 feet of depth, the pits will hold slightly more than 4 inches of precipitation from the lots before liquids overflow. The pits are emptied four times a year—16 inches of precipitation are retained in the pits for land spreading each year. The pits are emptied with a liquid vacuum tanker wagon.

Written by Jeffery Lorimor, ISU Extension waste management specialist.

File: Engineering 1-1



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... and justice for all

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Many solids settle on the lots, rather than entering the settling tanks, as seen at the entrance to the east tank. The 8-inch inlet pipe on the right is nearly submerged.



Both the inlet pipe from the lots and the outlet pipe are visible on this pit adjacent to the west lots. Note the square access opening in the tank lid.



This tanker wagon is used to empty the pits. It's parked here between the west lots and the pit that serves the north lots.