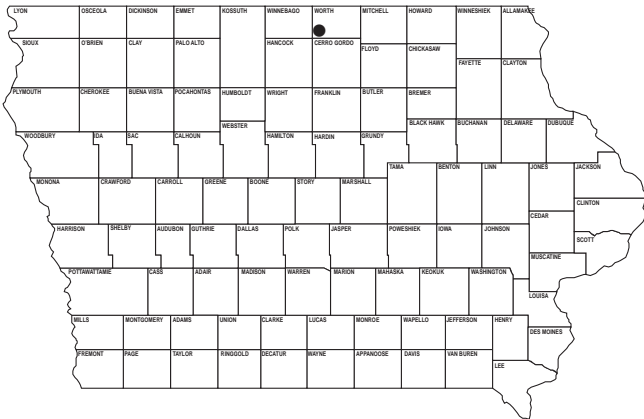


Feedlot Runoff Control

Demonstration Site: Swine Lot



Location

Worth County

Operator

Ed Kirshbaum

Route 1

Fertile, IA 50434

Phone: (515) 797-2626 or (515) 797-2120

Please call for a viewing appointment.

The Kirshbaums, Ed and son Eric, are pork producers west of Fertile, in north central Iowa. They farrow at Ed's farmstead, and have a small shed and lot at Ed's father's place that is used for finishing or gestation. The Soil Conservation Service designed a settling basin to retain solids and protect nearby cropland.

Directions

Go 4 miles west of Fertile on Highway 9; then 3/4 mile south on Apple (gravel). The Kirshbaum place is on the east side of the road

Lot Description

Each of five outdoor side-by-side lots is 12 feet by 31 feet with a slight slope to the south. A shed is to the north. The lots have a total capacity of approximately 200 finishing hogs. A flat, concrete driveway runs across the bottom of the lots, separating them from the waste collection basin on the south side of the driveway.



The Kirshbaums' system features five sloping lots, a concrete driveway, and a settling basin.

Operator's Comments

"The system has been in place for two years. It works well. It has eliminated the problem of mud, manure, and dead crops below the lot. Now all that comes off is water, so even the grass immediately below the planks is easy to maintain. It's a long way to any stream, but runoff doesn't go very far. It soaks in within a couple hundred feet."

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Runoff Control System

The waste system uses a 13-foot-wide collection alley and settling area. The collection alley slopes 0.9 inch per foot (7.5 percent) from both ends toward the middle. The flat, center settling area is 17 feet long and 21 inches deep. Liquids exit to the south through a removable, porous dam made of 2-by-10's placed horizontally with approximately 1/2 inch spaces between them. A grass waterway carries runoff away from the settling basin, then flattens out in a cropped field.

The drainage area for the lots is 1,860 square feet, while the total drainage area (including roof runoff) is 3,480 square feet. The settling basin area is 221 square feet (1/16 of the total drainage area).

The Kirshbaums scrape the lots frequently. The collection alley and settling area are scraped after each rain, and solids are hauled out for land application. The sloped ramp allows access for scraping. It was left rough for improved traction. The 2-foot-high concrete wall at the end of the channel is a convenient place to store manure temporarily, prior to disposal.

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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When it leaves the settling area, runoff flows down a grass waterway and onto the crop land below, where the slope flattens out.



A unique feature of the system is the porous dam located at the center of the basin's side, rather than on one end.



The apron next to, and just above the collection alley is used for vehicle access to fill feeders. Solids can be temporarily pushed against the concrete wall at the far end.