

Slippery Rock Watershed Coalition
SR 85/SR86 FERRIS WEST VERTICAL FLOW SYSTEM &
RETENTION AREA FACT SHEET

PA Game Lands No. 95, Venango Township, Butler County, PA

FUNDING SOURCE:

Reclamation Agreement funds from the Sunbeam Tipple Restoration Project

PROJECT PARTICIPANTS:

Kerry Coal Company	PA Fish and Boat Commission
NRCS	PA Game Commission
WPCAMR	PA DEP Northwest Regional Office
Slippery Rock Watershed Coalition	PA DEP - Bureau of Mining and Reclamation
Slippery Rock University	PA Bureau of District Mining Operations(Knox)
Butler County Conservation District	

COMPLETION DATE:

Major construction completed August 1997

Water Quality Monitoring ongoing: A Bureau of District Mining Operations(Knox)

MATERIALS USED FOR TREATMENT:

444 yd³ of compost mixed with 145 tons of #9 limestone
1750 tons of AASHTO No. 1 limestone

WATER COLLECTION AND DISTRIBUTION:

Collection: Check dam and rock lined channel

Inlet: From the collection system, flow is distributed vertically down through a 3.5 foot layer of compost/limestone mixture to a underdrain system consisting of 4 rows of 4" perforated Schedule 40 PVC connected to a 6" Schedule 40 PVC manifold which is embedded in a 2 foot layer of river gravel of the first cell. Flow from the underdrain system rises vertically through a 6" Schedule 40 PVC sloped pipe and is discharged to the second cell. The flow moves vertically down through the AASHTO No. 1 limestone of the second cell to an underdrain system similar to that of the first cell.

Outlet: Flow from the second cell is discharged to the retention area through an Inline Water Level Control Structure. This device can be vertically adjusted to control the pool elevation in the second cell by the use of stop logs. The current elevation of the stops logs creates a 5 foot depth of water above the top of the AASHTO No. 1 limestone.

SYSTEM DIMENSIONS (FEET):

	<u>Length</u>	<u>Width</u>	<u>Depth</u>
<u>Cell 1</u>	140	90	15
<u>Cell 2</u>	260	110	15
<u>Retention Area (embankment)</u>	1300	10	5

SOIL AMENDMENTS AND SEED MIXTURE:

Birdsfoot trefoil @ 10 lbs/ac; White Dutch clover @ 4 lbs/ac; KY Bluegrass @ 10 lbs/ac; Winter Wheat cover, Aglime @ 4 tons/ac; 10-20-20 fertilizer; straw @ 100 bales/ac

WATER QUALITY (representative) from Ferris Complex

	Flow(gpm)	pH	alk(mg/l)	acd(mg/l)	Fe(mg/l)	Al(mg/l)
<u>Pre-construction: Raw</u>	82.8 (avg)	3.3	0	87.4	4.9	3.7
<u>Pre-construction: Cell 2</u>	82.8 (avg)	6.9	109	0	0.6	0.8