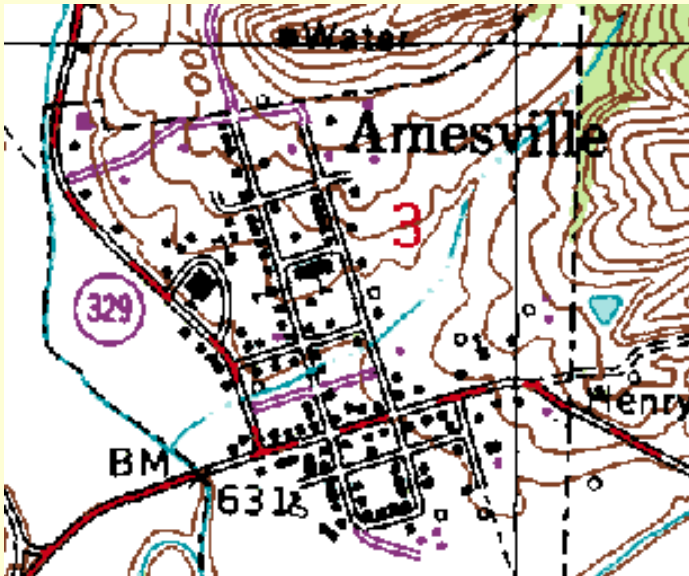


# Amesville Decentralized Wastewater Project

March 24, 2009

# Village of Amesville



\*84 existing systems

\*Approximately 17,785 gallons of potentially untreated sewage discharges from residential structures in Amesville each day

## Problems

Poor soils

Small lot sizes

Inadequate/improper maintenance of onsite systems

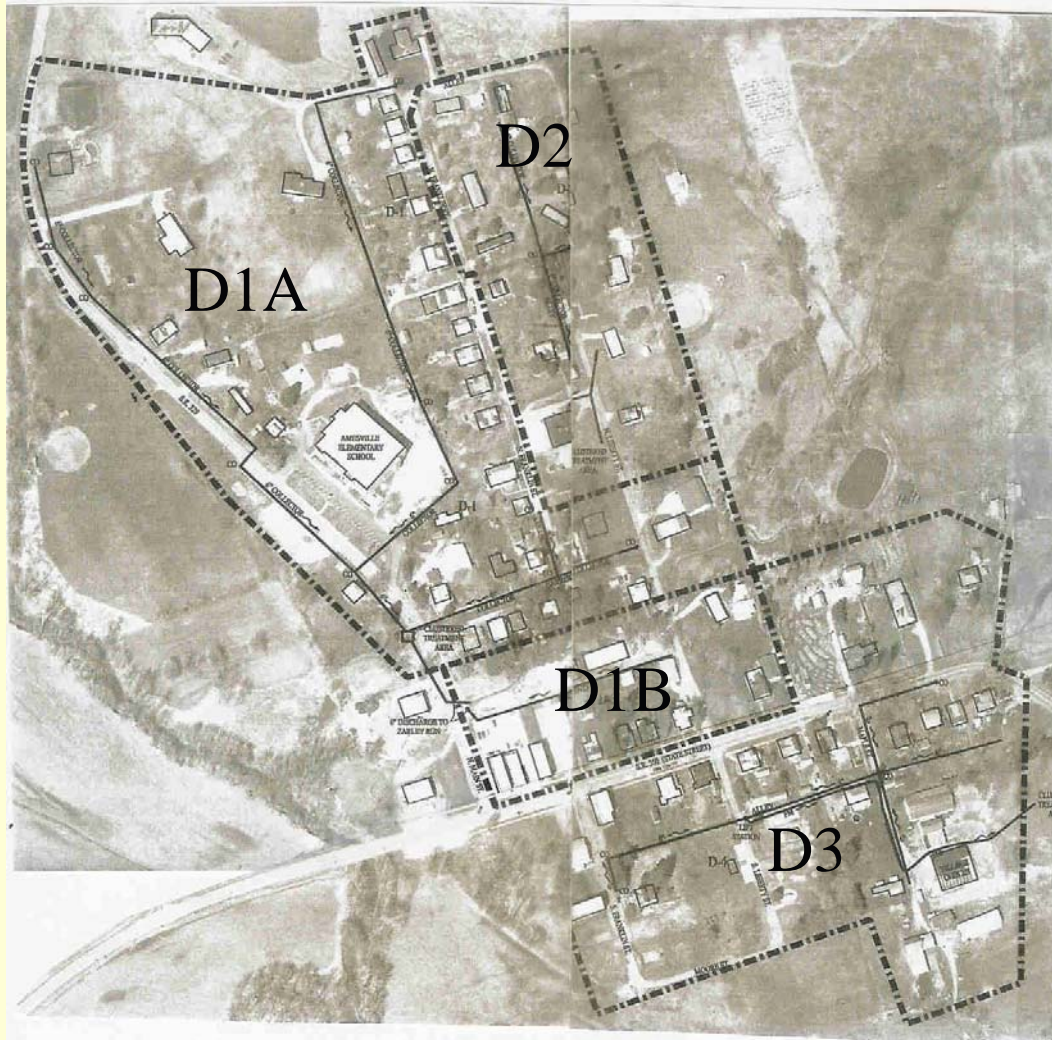
## Results

Odor

Opportunities for direct contact with sewage

Mosquitoes

# Proposed Project




\*Rather than designing one large collection system, Amesville was divided into four drainage areas

\*Each drainage area was numbered and called a district  
Districts 1A, 1B, 2 and 3



# Proposed Project

- Small diameter gravity lines transport sewage from existing structures to septic tanks (individual and clustered)
  - Septic tank effluent transported by septic tank effluent gravity (STEG) collection lines and conventional force main lines to clustered AdvanTex® treatment unit site
  - Treatment units discharge the final effluent to Federal Creek or Zarley Run
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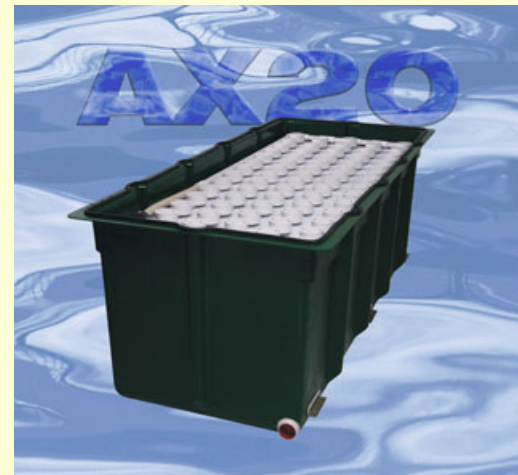


# Proposed Project

- Two of four collection systems designed to use existing storm sewers to transport final effluent from the treatment units to streams
  - This eliminates cost of constructing an effluent discharge line to the creeks from each clustered treatment system
  - To accomplish this each clustered treatment site is located in close proximity to existing storm sewers
  - Sampling will be completed at the point where the effluent from the treatment unit enters the storm sewer
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# AdvanTex® Treatment Units

- *The AdvanTex® Treatment System is a recirculating packed bed filter that uses a highly absorbent engineered textile for the treatment media.*





# Operator

- Sewer operator is current resident and former carpenter/horticulturist, she had no previous water/wastewater experience
  - Backup operator is council member
  - Both will obtain their Class A Certification in next couple months
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# Project Costs

Item	Cost
Construction, Bond, Mobilization (Bid)	\$ 1,089,859
Contingency	\$ 13,491
Design & Survey	\$ 140,000
Construction Inspection/ Management	\$ 105,799
Additional Engineering	\$ 46,600
Fencing	\$ 25,000
Design Loan Fee	\$ 400
Startup Operator	\$ 11,700
CDBG Administration	\$ 10,000
Ohio EPA Permit-To-Install	\$ 5,513
Environmental Review Advertisements	\$ 400
AEP Electric Installation	\$ 1,640
Auditing Expenses (Federal Funds)	\$ 9,000
Low-Income Hookups	\$ 100,000
<b>TOTAL PROJECT COST</b>	<b>\$ 1,549,303</b>


# Annual Operating Costs

Item	Cost
Village Operator (\$15/hr x 5 hrs/wk)	\$ 4,000
Sampling & Monitoring	\$ 800
Energy Costs	\$ 1,200
Pump Replacement	\$ 785
Bulb Replacement	\$ 250
Septic Sludge Removal	\$ 4,800
Clerical, Office Equipment, Billing	\$ 2,000
Audit Fees	\$ 1,500
<b>TOTAL OPERATING COSTS</b>	<b>\$ 15,355</b>



# Monthly Sewer Rate


Annual Operating Costs	\$15,335
OPWC Loan Payment	\$ 4,500
<u>EPA Loan Payment</u>	<u>\$21,950</u>
Total Operating & Debt	\$41,785
Divided By	96 (EDUs)
Annual Cost/Customer	\$435.26
<u>Divided By</u>	<u>12 (months)</u>
Av. Mo. Cost/Customer	\$36.27
<b>Actual Sewer Rate</b>	<b>\$40.00</b>





# Comparison of Decentralized Versus Centralized

Alternative	Decentralized	Centralized
Total Cost	\$ 1,549,402	\$ 2,205,823
Total Operating Cost	\$ 15,335	\$ 33,100
Average Monthly Sewer Rate	\$ 40.00	\$ 84.98





# Keys To Success

- Established project team
  - Showed impact of existing systems
  - Conducted routine public meetings
  - Worked closely with the Ohio EPA regarding permitting
  - Excellent community leadership
  - Selected the right engineer
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# Significance of Project

- First existing, incorporated community in Ohio to use a decentralized wastewater system that is publicly owned and operated
  - First time the Ohio EPA has issued an NPDES permit for multiple small treatment units with multiple discharge outfalls/locations
  - The project will serve as a case study for other small communities where conventional centralized wastewater alternatives are not financially feasible
  - Small communities across Ohio will be able to use the Amesville model
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# How Is It Working?

- Operating very well
  - Village is considering less dosing to treatment units to save energy since all samples have been well below EPA limits
  - Operator pleased with simplicity, ease of operation, cost effectiveness
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# End Result

- Project demonstrates that wastewater problems can be dealt with through unique but basic means where village officials as well as village residents are directly involved in decision-making, planning, and management of a publicly-owned and operated decentralized wastewater system
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