

Land Application of Sludge & Wastewater



NPS
DELAWARE

EPA Subcategory Number 61 & 62

INTRODUCTION

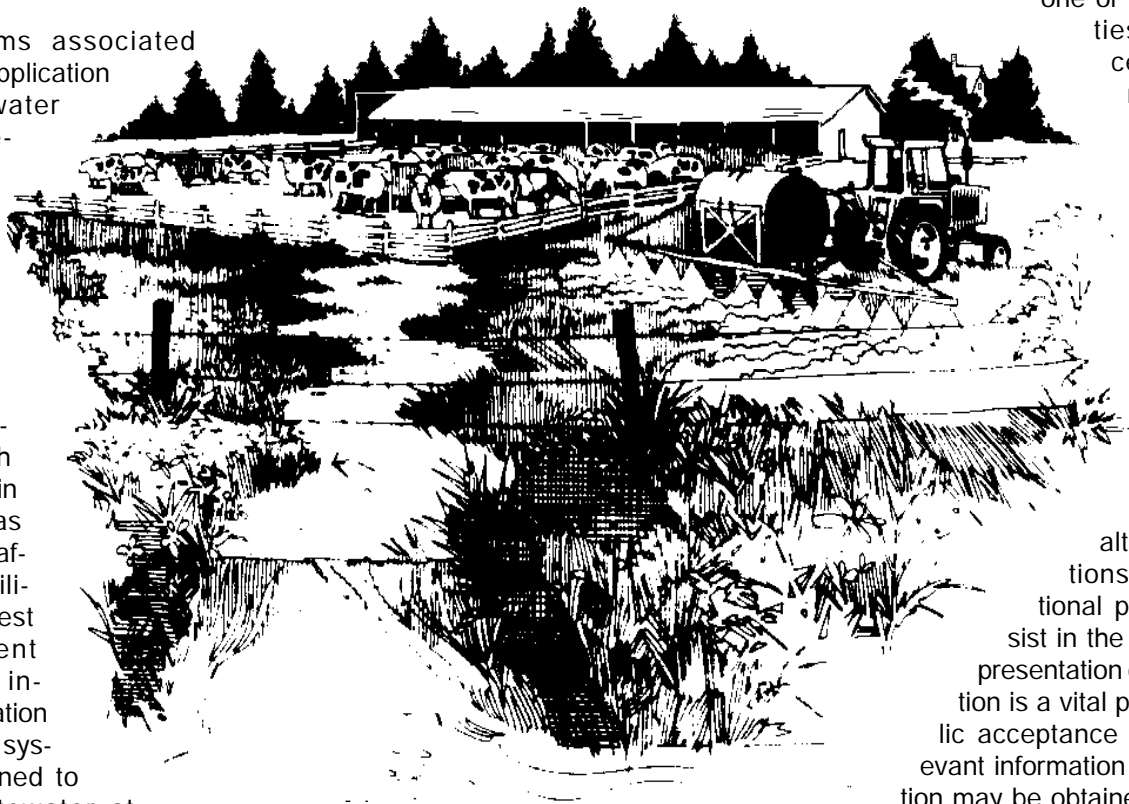
Land application of wastes includes spray irrigation, infiltration-percolation basins, and biosolids utilization. Spray irrigation of animal wastes and brine-containing wastewater from food processing operations and textile-dyeing operations have resulted in several incidents of groundwater contamination (Ritter and Chirnside, 1982). Such practices have caused elevated levels of both nitrates and sodium.

Problems associated with land application of wastewater can be reduced by thorough investigation of soils and geologic and hydrologic conditions, both on-site and in nearby areas likely to be affected. Utilization of best management practices including irrigation scheduling, systems designed to apply wastewater at proper rates, and matching application rates to plan nutrient needs will reduce and possibly alleviate groundwater quality degradation, increase crop yields, and otherwise promote beneficial reuse of treated wastewater byproducts.

The importance of a comprehensive and well-coordinated public acceptance program for the implementation of land treatment systems may be described by the old adage "an ounce of prevention is worth a pound of cure".

Good documentation exists for many fine land-treatment systems which have operated successfully for many years. Yet, public resistance may develop when new systems are proposed for individual communities unless preparatory steps are taken.

The public education and acceptance program should be one of the first activities in the process to implement a land-treatment system. Citizens should be encouraged to weigh the relative capabilities, advantages and disadvantages, and costs of alternative solutions. An educational program to assist in the collection and presentation of this information is a vital part of the public acceptance activity. Relevant information and participation may be obtained locally from citizens with high interest or appropriate expertise; technical institutes and university personnel; local representatives from agencies such as the Cooperative Extension System, the Natural Resources Conservation Service, and Conservation Districts, as well as supportive state staff for these agencies; local government planning agencies; and appropriate environmental organizations. Involvement of such resources and agency representatives can serve to coordinate and expand the program reach to involve all interested groups and concerned citizens.



Milestones for Implementation:

WORK ACTIVITIES	LEAD IMPLEMENTATION AND COOPERATING AGENCIES	TARGET DATE FOR COMPLETION	FUNDING SOURCES
Revise current regulations to include requirement of federal sludge regulations, 40 CFR Part 503.	DNREC, Division of Water Resources w/EPA and DNREC, Division of Air and Waste Management	1999	Unknown
Revise current regulations to allow for a tiered permitting approach based on size and complexity of the project.	DNREC, Division of Water Resources	1999	Unknown
Continue to work closely with the Delaware Technical and Community College (DTCC) Environmental Training Center to implement training programs geared towards persons who operate land treatment systems <ul style="list-style-type: none"> ◆ One day seminar (operator training) ◆ One semester, 2 credit course for solids handling 	DNREC, Division of Water Resources w/ DTCC Environmental Training Center	On-going	Registration Fees
Develop a database to track disposal of waste from sludge holding tanks.	DNREC, Division of Water Resources	On-going	Unknown
Research possibility of revising On-Site Regulations to allow for grey water separation and utilization.	DNREC, Division of Water Resources	On-going	Unknown
Review permit application forms and revise where necessary to make applications more understandable to applicants.	DNREC, Division of Water Resources	1998 (For Sludge)	Unknown
Revise Part V of the current Land Treatment of Wastes establishing a clearer protocol for approval to land apply source separated wastes onto agricultural lands	DNREC, Division of Water Resources and Air and Waste Management	1999	Unknown