



University of Idaho
College of Agriculture

Cooperative Extension Service
Agricultural Experiment Station

Current Information Series No. 426

January 1978

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New Developments in Sewage Treatment Requirements For Small Communities

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A recent amendment to the Federal Water Pollution Control Act of 1972 (PL 92-500) may provide needed relief for communities in the area of sewage treatment. This amendment will allow many communities to meet federal water quality standards without building expensive new sewage treatment plants.

The Original Law

The original act required communities or counties operating sewage systems to be treating domestic sewage at the secondary level or better by July 1, 1977. This deadline has caused concern in many Idaho communities.

Secondary treatment includes a number of steps. First, contaminants are removed by sedimentation. The sludge which results is then reduced in volume by anaerobic digestion. Bacteria are used to consume the sludge and thus reduce the volume of sludge to be processed. Finally, the sludge is dried by centrifugation or filtration and is disposed of by incineration or land application. The procedures may vary from region to region; however, this is the basic process known as secondary treatment.

The secondary treatment standards defined in the original act (2) were fairly stringent and in most cases ruled out the possibility of using a lagoon system for sewage treatment. The four standards dealing with effluent quality were in the areas of Biochemical Oxygen Demand (BOD), suspended solids, fecal coliform bacteria and pH.

The suspended solids limitation was the primary hindrance to continued use of the lagoon or sewage pond system. Many lagoon systems were meeting the requirements for BOD, fecal coliform bacteria and pH, but could not meet the suspended solids limitation. This was primarily because of the abundance of algae growth in most lagoon systems.

The Current Situation in Idaho

Nearly 60 percent of Idaho communities are currently using lagoons or sewage ponds as their treatment facilities, according to the *City-County Data Book* (1). If the lagoon system can meet the limitations of secondary treatment (BOD, suspended solids, etc.), extensive capital expenditures for new treatment plants will not be necessary in these communities. This could amount to tremendous savings of public monies in Idaho. For example, both the State of Idaho and the Environmental Protection Agency have estimated that over \$130 million must be spent in Idaho to reach the secondary level of waste treatment (5). This would amount to about \$159 per capita in the state. This figure may give you an idea of the problems which face many communities in dealing with the secondary treatment standards.

The Recent Amendment

The recent amendment to the Federal Water Pollution Control Act may allow continued use of lagoon systems by many communities. The amendment has in effect removed suspended solids restrictions for waste stabilization ponds that have a maximum capacity of 2 million gallons per day or less.

Re-evaluation is now underway on a state-by-state or region-by-region basis to determine a new standard for suspended solids. The new levels of suspended solids will be determined either by the regional EPA administrator or by the state director subject to EPA approval. Operation and maintenance data from a state or region will be analyzed to determine a new level for suspended solids "which is equal to the effluent concentration achieved 90 percent of the time within a state or appropriate geographical area" (3). The only limitations are:

1. The stabilization ponds must have design capacities of 2 million gallons per day or less (populations of about 20,000 or less, depending upon water use).
2. The ponds must meet the limits of biochemical oxygen demand (BOD).



Community and
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3. Operation and maintenance data must indicate that the limits for suspended solids (original law) cannot be achieved.

The possibility that communities will not have to invest large amounts of money to build new sewage treatment facilities is a welcome sign for many Idaho communities. The thoughts of sewage bond levies and increased taxes may be set aside, at least until the new suspended solids limitations are set for Idaho. The process of evaluating sewage projects in Idaho is currently being undertaken by EPA, and the new suspended solids limits should be released in 1978.

Sources of Information

1. City-County Data Book. 1977. Boise Center for Urban Research, Association of Idaho Cities, Idaho Association of Counties.
2. Federal Register. 1973. Part 133 — Secondary Treatment Information. 38(159):22298-99.
3. Federal Register. 1977. Suspended solids limitations for waste-water treatment ponds 42(195):54664-66.
4. Program Notes: Water-Sewer-Solid Waste. 1977. USDA/Coop. Ext. Ser./CRD. No. 24(8):1-3.
5. U.S. Environmental Protection Agency. 1977. Cost estimates for construction of publicly-owned wastewater treatment facilities — 1976 needs survey. MCD-48A.
6. U.S. Environmental Protection Agency. 1977. Environmental News. Washington, DC.

5 cents per copy

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