

New plant makes Lane County sewage treatment easier

By Alicia Gano
Of the Emerald

Domestic and industrial sewage processing in Lane County is a brighter prospect now as the Metropolitan Wastewater Treatment facility comes ever closer to completion.

In 1976, with both Eugene and Springfield's sewage plants at capacity, both cities needed new facilities. In order to get federal grants needed for the projects, the Department of Environmental Quality recommended one facility be built to service both areas.

As a result, the Metropolitan

Wastewater Management Commission was formed.

Its mission was "to design, construct, operate and maintain the regional sewage facilities" to be built. In 1978, \$29.5 million in bonds were sold to cover the region's share of the cost and millions in federal grants were pledged, according to commission documents.

By 1984 the plant was operational and dedicated. Currently, \$105 million has been spent, and the facility operates at around \$6 million per year, according to Regional Wastewater Manager Bill Pye.

"It's a tremendous asset for

both our communities, one which will save the area money and remain useful far into the future," said Lane County Budget Committee member, Robert Scherer of Springfield.

As household sewage comes to the plant it goes through five stages and produces several by-products, Pye said. The whole system is based on the low-tech concept of gravity, he said. The plant is situated so that each phase is a little farther down hill than the previous one, he added.

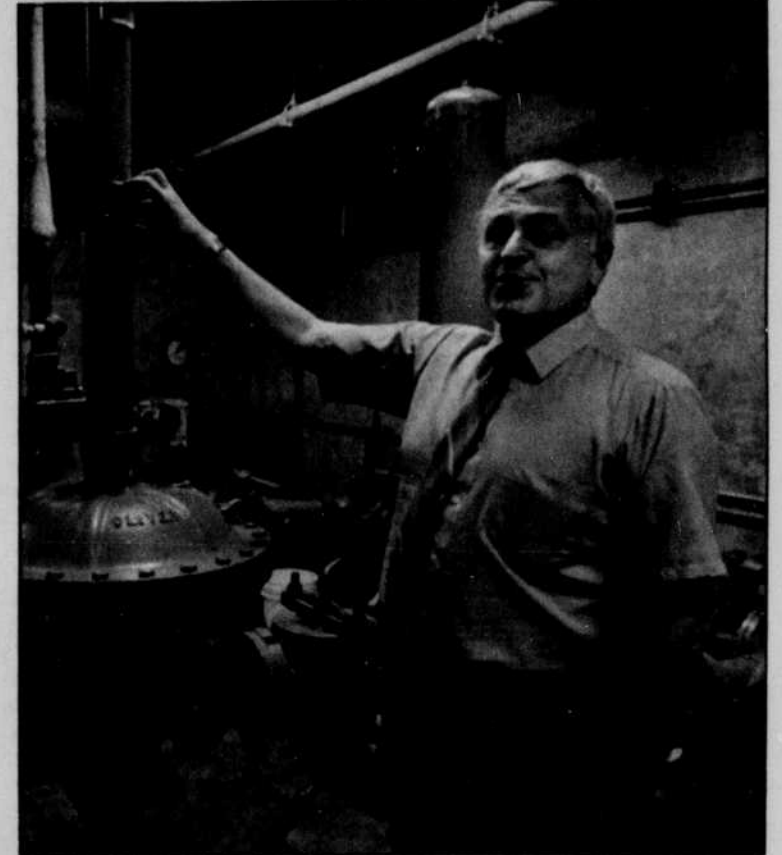
Initially, all sewage goes to a pre-treatment area where everything is ground up and grit is removed. Grit is sand or gravel that has gotten into the sewage, primarily from industrial activity, Pye said. The grit is later taken to a landfill.

The second stage is to the primary clarifiers where sewage that floats or sinks is separated from the rest of the liquid. The solids that are separated off at this point go directly to "digesters" which is where raw sewage is turned into sludge. Sludge is stabilized, all organic material is removed and therefore has no odor. "There is nothing organic left to rot," Pye said.

Sludge is stored in a pond where it solidifies further and settles. Later it will be removed and as much water as possible will be removed from it to aid in transportation. Sixty-five percent of sewage treatment occurs at the primary clarifying stage, according to Pye.

Next, the remaining liquid sewage goes to aeration tanks where it is exposed to bacteria that attaches itself to any organic material and creates more solids. Oxygen is pumped into the tanks which keeps the bacteria healthy and the odor down.

At the next stage, secondary clarification, the newly created solids are removed. Some of the solids are reintroduced to the



aeration tanks as bacteria for new sewage coming in, and the rest is sent to the digesters to be turned into sludge.

The final process is disinfection of the remaining water — all organic material is removed in the previous stage — with chlorine to kill the bacteria and then with sulfur dioxide to rid the water of the chlorine. At this point the water is purified, aerated and returned to the river.

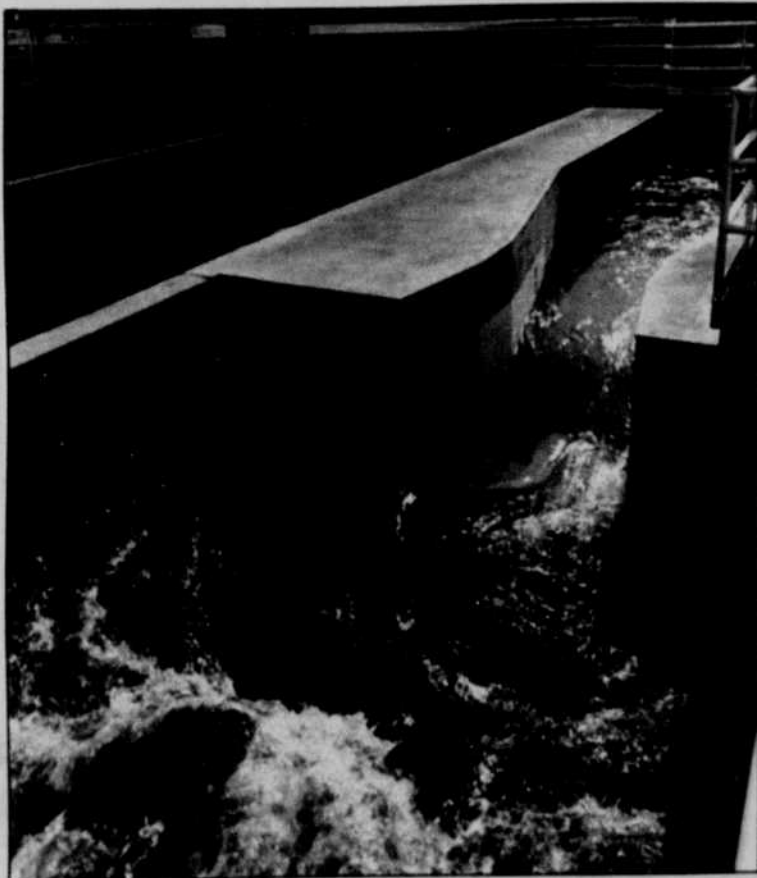
The byproducts of sewage processing are sludge and methane gas. Sludge is used by local farmers as a "soil amendment," Pye said. Unlike fertilizer it improves the "waterholding capabilities" of the soil which proves highly beneficial to farmers.

Methane gas is produced in the digesters as the remaining bacteria within the sludge consumes the organic material. A floating ceiling within the digesters allows the methane gas to seep out and be contained. Six percent of the plants power needs come from this gas. Pye hopes to increase this by another 6 percent soon.

Odors are kept down at the facility by keeping as much oxygen in the sewage as possible. In so doing, the bacteria lives on the oxygen, which does not result in odorous fumes, rather than on nitrogen or sulfur, which do. Throughout the process, oxygen is continually pumped into the sewage except at the digester stage where everything is sealed off and gases are desired.

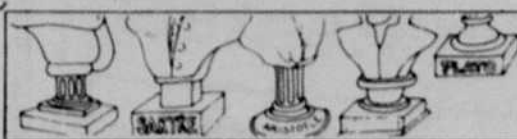
The final construction for the plant will be a permanent sludge handling facility, which Pye said may cut the cost of operating the system by \$100,000. Currently sludge is removed from the storage pond year-round, which results in high labor costs in the winter when it cannot be immediately transported to fields. With the new system of sludge ponds, more can be stored during the winter and removed later in better weather.

Pye is also pleased with a future plan for drying and storing sludge so that farmers can come to the facility and easily pick up truck loads to use on their land.



Photos by Derrel Hewitt

At the end of the sewage treatment process at the Wastewater Treatment Facility, water is ready for release into the Willamette River (above). Regional Wastewater Manager Bill Pye stands in a room where solids are removed from sludge (upper right).



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