

1-1-1995

FIELD EVALUATION OF THE LAND APPLICATION OF PAPER MILL SECONDARY CLARIFIER SLUDGE

Thomas P. Ballestero

University of New Hampshire, tom.ballestero@unh.edu

James P. Malley

University of New Hampshire

George O. Estes

University of New Hampshire

Follow this and additional works at: https://scholars.unh.edu/nh_wrrc_scholarship

Recommended Citation

Ballestero, Thomas P.; Malley, James P.; and Estes, George O., "FIELD EVALUATION OF THE LAND APPLICATION OF PAPER MILL SECONDARY CLARIFIER SLUDGE" (1995). *NH Water Resources Research Center Scholarship*. 106.
https://scholars.unh.edu/nh_wrrc_scholarship/106

This Report is brought to you for free and open access by the NH Water Resources Research Center at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in NH Water Resources Research Center Scholarship by an authorized administrator of University of New Hampshire Scholars' Repository. For more information, please contact nicole.hentz@unh.edu.

FIELD EVALUATION OF THE LAND APPLICATION OF PAPER MILL SECONDARY CLARIFIER SLUDGE

Principal Investigators: Dr. Thomas P. Ballestero, Dr. James P. Malley, Jr., Dr. George O. Estes, University of New Hampshire

Descriptors: Groundwater quality, heavy metals, industrial wastewater, infiltration, sludge

Research Objectives:

Monitor chemical fate and transport (soil, soil water, ground water and vegetation); characterize infiltration characteristics through time; evaluate vadose zone and ground water microbiology.

Principal Findings and Significance:

This was a continuing project. The permits were granted, wells were drilled, soil moisture equipment was installed. Over the previous 18 months, over 12 million gallons were spread over the area. The annual application rate was limited by the cadmium in the sludge. The source of the cadmium was boiler blow down water.

At the time of the writing, no adverse effects on the ground water were detected by measurements. Also, although the sludge had very high TKN, no nitrate increases were seen in soil water or ground water.