



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2004DE42B

Title: Evaluation of Land Application of Wastewater as a Nutrient Reduction Control Strategy for the Chesapeake Bay

Project Type: Research

Focus Categories: Water Quality, Nutrients, Non Point Pollution

Keywords: land application, wastewater, nutrients, Chesapeake Bay

Start Date: 06/01/2004

End Date: 02/28/2005

Federal Funds: \$1,750

Non-Federal Matching Funds: \$3,500

Congressional District: At-large

Principal Investigator:

William F. Ritter

Abstract

The goal of this project is to research and assess the possibility of land application of wastewater as an alternative to effluent discharge into the Chesapeake Bay. This switch in disposal of nutrient discharge could reduce the nutrient loads being transported into the Bay as well as provide for beneficial land application. It would help the Bay states meet their 2010 nutrient caps. Wastewater treatment discharges account for 21 % of the nitrogen and 22 % of the phosphorus loads to the Bay. It will be determined if the reduction in effluent can be used more efficiently by applying it to agricultural crops and forestland to produce biomass for energy products in the watershed. Also the associated costs of this alternative will be analyzed. The specific objective of the research is to examine whether land application of wastewater is a suitable and desirable method for reducing nutrient loads into the Chesapeake Bay presently caused by effluent discharge. In conjunction with this there are four more associated points that the project intends to address. An inventory of land application sites presently in use will be performed in order to determine their contribution to reducing nutrient loads into the Bay. A register of prospective land application sites will then be determined in order to explore the potential for further nutrient reduction. With all the above information collected it will be determined if the wastewater effluent can be used more efficiently by applying it to

agricultural crops and forestland for biomass production. Assuming that the effluent will be of better use for land application a future capital and operations and maintenance cost will be established for present as well as future facilities in the watershed.