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**IMPACT ON DRAINAGE WATER QUALITY FROM AMENDING
AGRICULTURAL SOILS IN NOVA SCOTIA WITH AN ALKALINE
STABILIZED BIOSOLID**

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ABSTRACT A study was conducted in Nova Scotia, Canada examining the impact of land applying an alkaline stabilized biosolid (ASB) on surface and subsurface drainage water quality. The site has six plots (83 m by 96 m), each with a subsurface drainage system. Drains (100 mm in diameter) are located at a depth of 80 cm on a uniform slope of 0.4%. In addition to subsurface drains, each plot has a surface drainage ditch with a hickenbottom surface inlet at its bottom end to collect surface runoff water. Buffer drains hydrologically separate all plots. All twelve drains (6 surface and 6 subsurface) flow into a propane heated sampling hut equipped with tipping buckets and a datalogger. The study site was established to examine the impact on water quality from organic amendments using two management practices (conventional vs no-tillage) common to the region. No significant differences were observed in either *E.coli* (CFU/100mL) or total coliform (CFU/100mL) levels in surface or subsurface drainage water after application of the N-Viro biosolids. Preliminary results suggest that the N-Viro biosolids actively contribute to the overall mineralized nitrogen pool in soil. Drainage loss of mineralized nitrate was not considered to be a major concern based on current results. Further research is needed before final recommendations can be made regarding the impact on water quality from using alkaline treated biosolids on agricultural soils in Atlantic Canada.

Keywords: Drainage water quality, Alkaline stabilized biosolids, Nitrogen, Pathogens.