Soil Reclamation after a Bakken Crude Pipeline Release: A Summary of Research Results[1]

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Abstract: The largest terrestrial accidental oil spill in the United States occurred in 2013 in northwestern North Dakota under an agricultural field. This pipeline leak released about 20,000 barrels of shale-extracted Bakken crude to depths of 18 m across about 8 ha[3]. The contaminated soil was remediated using low temperature (200 to 500 °C) thermal desorption (TD) which is an effective method for removing hydrocarbons from soil materials. The goal of this presentation is to provide an overview of the results of laboratory, greenhouse, and field experiments that investigated the feasibility of using TD soil as a replacement for topsoil. Topics to be covered include the effects of TD on soil hydraulic and physical parameters, cation selectivity, alterations in the N cycle and plant available N, surface energy balance, P sorption and desorption, and agronomic implications and crop productivities.[3]

Additional Key Words: crop production, fertility, agronomy, energy balance, degradation

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3. Work here was conducted near 48°31'27.24"N, 102°51'24.01"W.