

September 3, 2019

Industrial Commission of North Dakota
Attention: Executive Director
State Capital 14th Floor
600 E Boulevard Ave Dept 405
Bismarck, North Dakota 58505-0840

Project Overview- *“Effects of Cropping Sequence, Ripping and Manure on Pipeline Reclamation in Western North Dakota”*:

During the spring of 2015, installation of a new water pipeline was completed at the North Dakota State University, Williston-Research Extension Center. A long-term experiment with five annual crop rotations and two perennial covers was planted in pipeline, roadway (parallel to pipeline), and undisturbed (control) areas. We aim to determine best cropping sequences under dryland no-till conditions that reclaim severely disturbed cropland. In addition to cropping sequence, ripping/manure will be tested as the subplot in a split plot design in efforts to decrease compaction and add organic matter. This study is designed to address barriers to successful pipeline reclamation. More specifically, this study aims to provide long-term management strategies for landowners to restore productivity to cropland. If economical reclamation options are available to stakeholders, more effective reclamation plans can be composed and more efficient pipeline installations will be possible.

Status Update:

- May:
 - Soil compaction data was collected using a dynamic cone penetrometer.
 - Pre-plant herbicide was applied.
 - All plots, with the exception of the perennial grass treatments, were planted to durum.
 - Soil moisture data and imagery was collected.
 - Nick Birkhimer attended the National Summit for Reclamation and Construction in Colorado to learn about best practices and current research in land restoration.
- June/July
 - July 10th- A special tour, focusing on pipeline reclamation, was held in conjunction with the NDSU WREC Field Day.
 - Physiological data were collected on the durum.
 - Soil moisture data and imagery was collected.
- August
 - Soil infiltration measurements were completed.
 - Physiological data and biomass samples were collected on the durum.
 - Soil moisture data and imagery was collected.
 - Durum was harvested, one plot was not harvested due to the subsidence on the pipeline.
- The NDSU Officer managing this grant, Laura Lutkemeier, will provide expenditures.

Dr. Jerry Bergman

Center Director

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