Technical Memo

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To: Patrick Fahn, North Dakota Public Service Commission

From: Luke Toso, Wenck Associates, Inc.

Date: August 28, 2017

Subject: PU-15-097 Bridger Crude Oil Pipeline Loop - Revegetation Inspection Report

Bridger Pipeline, LLC – 16-inch Crude Oil Loop Pipeline also known as the "Heart River Pipeline" – PSC Case No. PU-15-097 – Revegetation Inspection Report

Site Visit: August 14, 2017

In attendance:

- Don Clark – Bridger Pipeline
- Luke Toso – Wenck Associates, Inc.

On behalf of the North Dakota Public Service Commission (NDPSC), Wenck Associates, Inc. (Wenck) conducted a revegetation inspection of the Bridger Crude Oil Loop Pipeline (Project) in Stark and Billings Counties, North Dakota (ND), constructed by Bridger Pipeline, LLC (Bridger). The purpose of the inspection was to ensure the project was constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project, which includes a requirement that all areas disturbed by construction be reclaimed and restored.

Construction of the Project was complete in February 2016, with reclamation activities beginning in the spring of 2016. This report documents current conditions in the Project area after two growing seasons; seeding and reclamation activities were conducted in May 2016.

Methods

Prior to field surveys, Wenck reviewed the project Docket to determine NDPSC Orders regarding reclamation in the project area. The docket review revealed several wetland crossings and grassland areas that would require reclamation following construction disturbance.

The project area was inspected visually by driving to access points and walking within the Project area at those points. Grassland and wetland areas were walked to determine species composition. Agricultural areas were observed from public roads and trails.

Results

Reclamation of the Project appears to be proceeding satisfactorily considering this is the second growing season after seeding. In areas with native vegetation (i.e. grasslands and wetlands), about 60% of the disturbed area was dominated by native species.

Grasslands
Planted native grasses were growing throughout the reclamation area. Noxious weeds were not observed. Native grasses included species such as western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), and blue grama (*Bouteloua gracilis*). It appears that the seed planted has germinated and after a few more growing seasons will dominate in reclaimed areas. While bare ground is present, the dominance of native species indicates that topsoil has been replaced and suitable plant growth material is present. Given time and moisture, native species will continue to colonize throughout the area.

Photo 1. Location: 46.904706, -103.274497. Facing: West. View of a reclaimed grassland area on USFS lands that had the least vegetation cover of grassland areas in the project area. Note the grasses germinating where seed has been drilled, although vegetation covered approximately 50 percent of the reclaimed area. While some bare ground exists, the presence of germinating grasses in planted areas indicates that given time and moisture grasses will continue to establish in this area. This area lacks vegetation cover mainly because during construction this area was double ditched.

Photo 2. Location: 46.941353, -103.210511. Facing: Northeast. View of a reclaimed grassland area on private lands. Native species accounted for approximately 70 percent cover in this area, which was the average cover on grassland areas in the project area.

Photo 3. Location: 46.948911, -103.188758. Facing: Northeast. View of a reclaimed grassland area on private lands. Native species accounted for approximately 80 percent cover in this area, which was on the high end for grassland areas in the project area. Note the prevalence of fringed sage (*Artemisia frigida*) in this area, which is a common species that occurs after grazing. Considering current drought conditions and grazing pressure, vegetation appears to be establishing well throughout the reclaimed area. This area had soil settling issues during the initial inspection which have now been remediated by adding additional topsoil in areas that had settled.

Wetlands
Wetland areas disturbed by construction now match the surrounding undisturbed areas; typical vegetation in wetlands included foxtail barley (Hordeum jubatum) and western wheatgrass (*Pascopyrum smithii*).

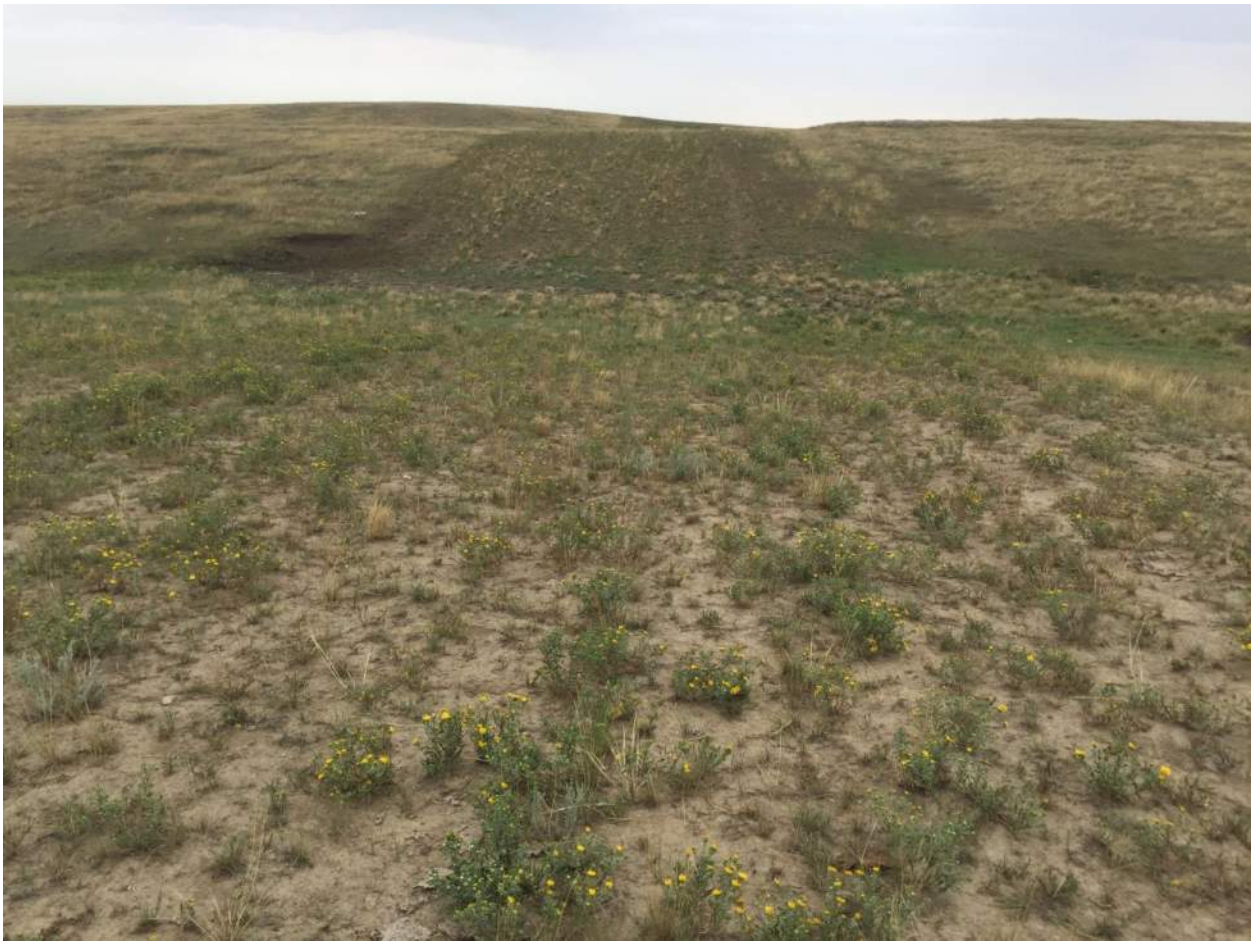


Photo 4. Location: 46.945256, - 103.203347. Facing: West. View of a reclaimed wetland drainage within a native pasture. Note the dominance of native grasses throughout this area. Native vegetation covered approximately 80 percent of the disturbed area. This area had soil subsidence issues during the initial inspection which have now been remediated.

Photo 5. Location: 46.950853, -103.186644. Facing: Northeast. View of a reclaimed wetland drainage within a native pasture. Note the dominance of native grasses throughout this area. Native vegetation covered approximately 80 percent of the disturbed area.

Photo 6. Location: 47.023955, -103.099708. Facing: North. View of a wetland crossing near the end of the pipeline route (green vegetation in the middle of the photo). Native vegetation covered approximately 80% of the disturbed area in this basin. The cropland in this area also appeared uniform compared to undisturbed areas.

Cropland

In agricultural areas, crop growth within the Project ROW appeared consistent with the surrounding area, indicating that topsoil was replaced in compliance with NDPSC Orders. No crop stress was observed within the project ROW compared to adjacent areas.

Photo 7. Location: 46.964736, -103.168219. Facing: Northeast. View of the Project ROW through a corn field. No difference was observed between the Project ROW and other cropped areas. Pipeline markers were present.

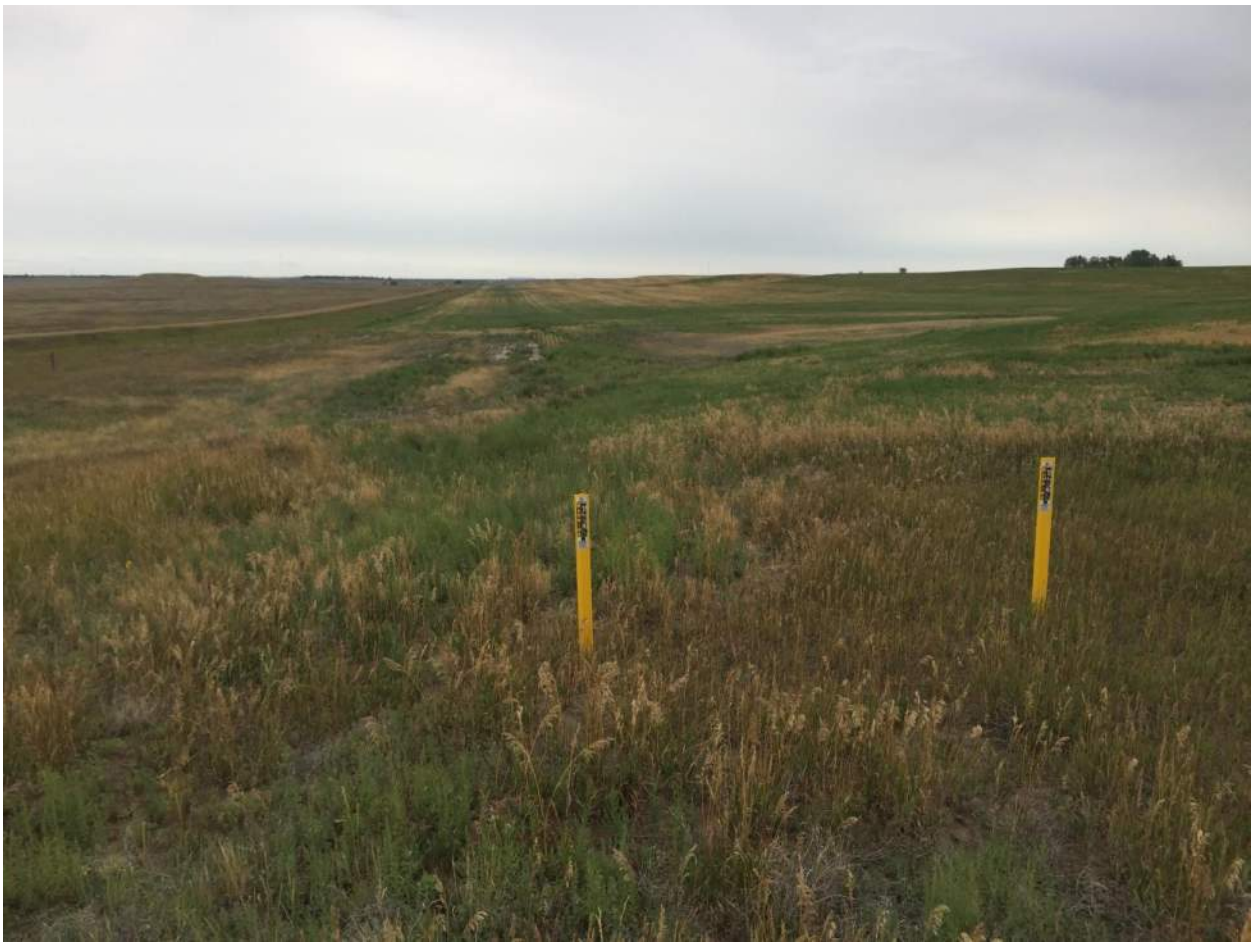


Photo 8. Location: 46.904683, -103.252433. Facing: East. View of the Project ROW through a wheat field. No difference was observed between the Project ROW and other cropped areas. Pipeline markers were present.

Conclusion

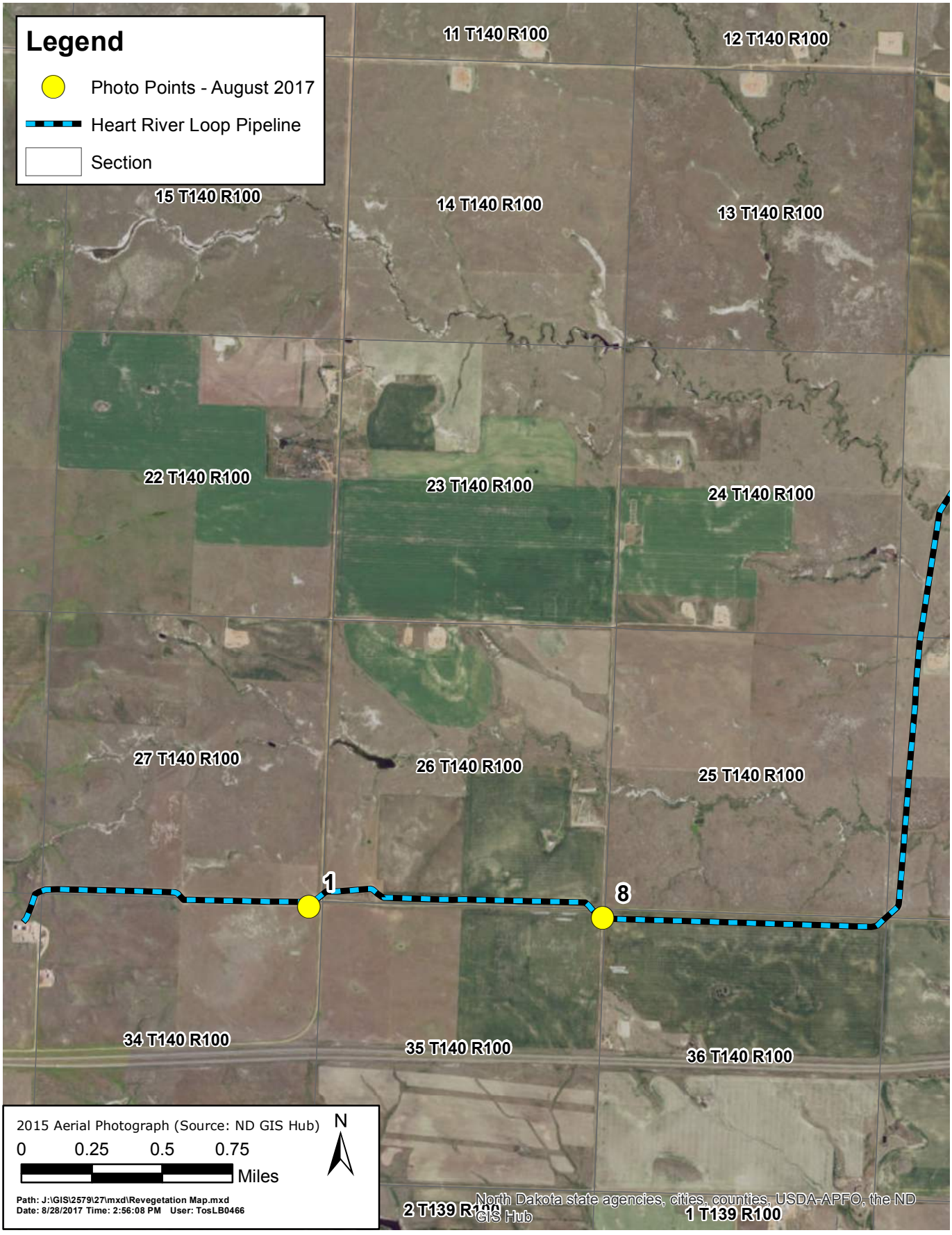
During the site visit, Bridger stated that drought conditions have affected reclamation results. Bridger plans to conduct reseeding on a portion of USFS lands to encourage plant growth were seed has not taken due to drought conditions (**Photo 1**). Bridger demonstrates a willingness to continue monitoring reclamation within the Project ROW. No further inspections on behalf of the PSC are recommended based on field verification of satisfactory plant establishment and Bridger's commitment to continue to monitor the site.

The services performed by Wenck scientists for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Luke Toso, Natural Resources Scientist, prepared this report. Please direct questions to ltoso@wenck.com or by phone to 651-925-7267.

Luke Toso, Natural Resources Scientist — August 28, 2017 — Date

Justin Askim, Project Manager — August 28, 2017 — Date



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Field Observation Map (Page 1 of 3)

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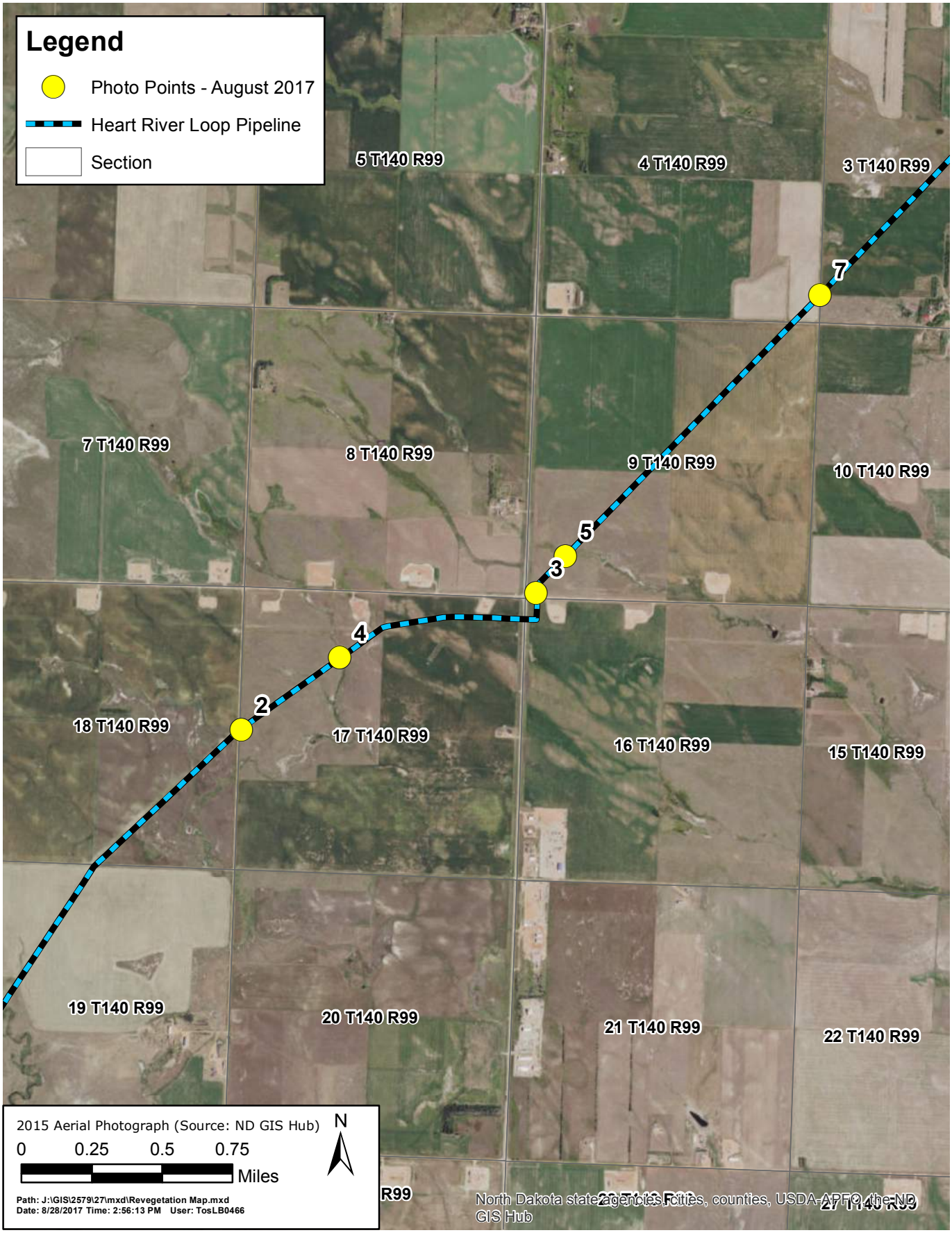
AUG 2016

Figure 1



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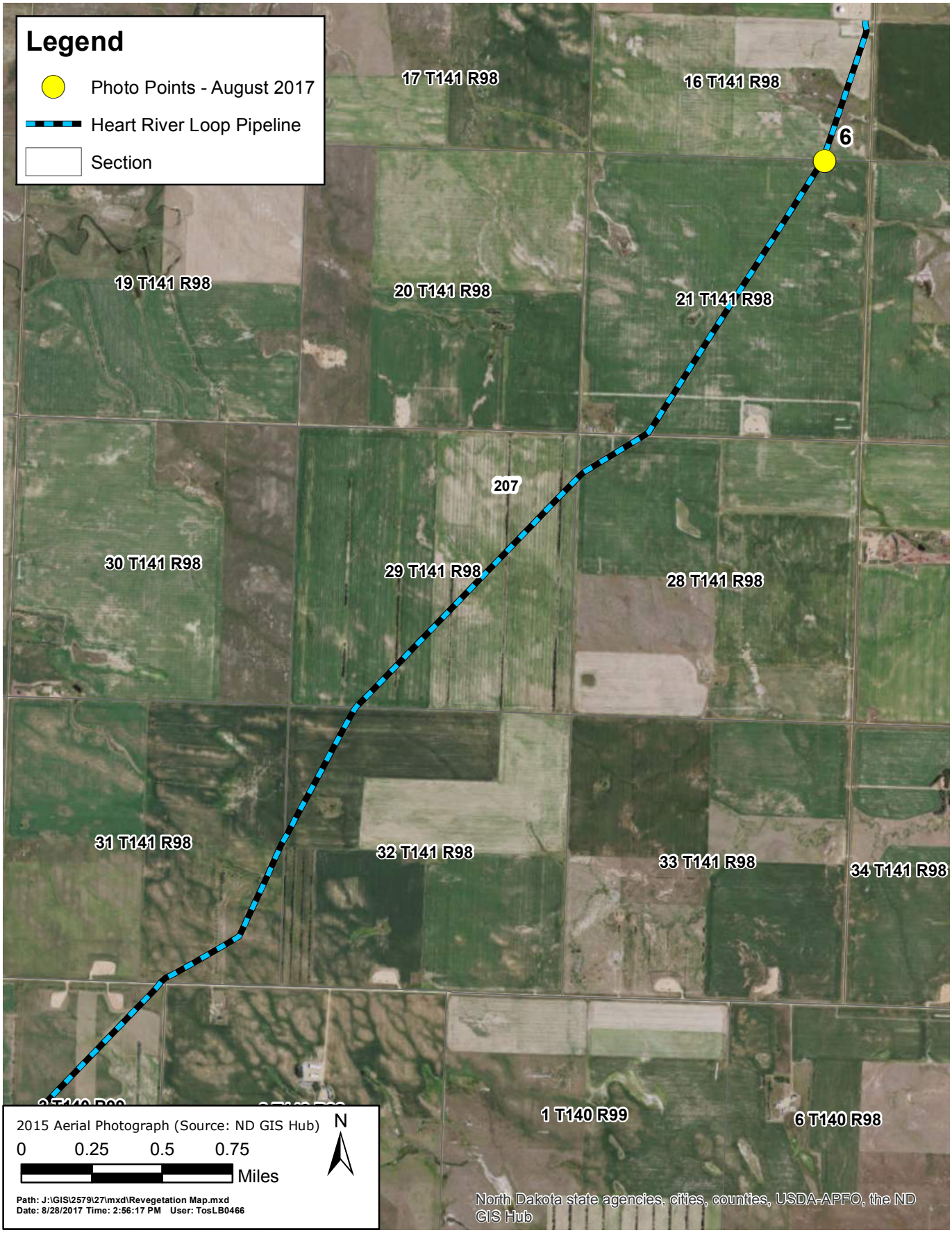

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Figure 1