

Bill Sanderson Residue and NGL Pipelines Project

Construction Inspection Report

Docket Number: PU-20-247

Prepared for North Dakota Public Service Commission



October 2020

Construction Inspection Report

October 2020

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1 Executive Summary

The North Dakota Public Service Commission (PSC) retained Barr Engineering Co. (Barr) to complete site inspections for the construction of the Bill Sanderson Residue and Natural Gas Liquids (NGL) pipelines in Williams County, North Dakota (ND), currently under construction by OE2 North LLC (OE2). The purpose of the inspections is to ensure the project is constructed in compliance with siting laws and rules and the applicable PSC Orders for the project.

A pre-construction conference call was held for the Project on 25 August 2020. Barr attended the call and reviewed project documents to become familiar with the Project and PSC Orders for the Project. Construction involving soil disturbance began 1 September 2020. Barr was to present to observe topsoil segregation by Jomax Construction Company, Inc. (Jomax) at the onset of the Project. A Topsoil Removal Inspection Report was previously submitted to the PSC.

Construction inspections were conducted on 7 October 2020. Pipe depth was documented at multiple locations and the pipeline was found to be installed with the depth of cover required per the Commission's Order. During construction site inspection some isolated incidents of soil segregation issues were observed. These were brought to the attention of the OE2 representative. To resolve these issues, Barr recommended installing additional silt fence in some locations and using extra care during subsequent backfilling operations to minimize further mixing and assure topsoil and subsoil remain segregated to the extent feasible. Overall, project construction appears to be in compliance with the applicable siting laws, rules, and PSC orders.

2 Background and Scope

2.1 Introduction

The Bill Sanderson 8-inch NGL and 20-inch Residue Gas pipelines are two pipelines originating at the Bill Sanderson Gas Processing Plant located in Section 27, Township 154 North, Range 104 West. The pipelines are collocated for the first mile east of the plant, where the 8-inch NGL pipeline terminates at an interconnection with an existing Oneok pipeline. The 20-inch residue pipeline continues south for an additional 3.39 miles to a tie-in point with an existing Northern Border pipeline. The pipelines follow existing infrastructure for their entirety.

The pipe for the Project is designed to carry up to 250 million cubic feet per day (MMCFD) of residue gas and 80,000 barrels per day (BPD) of NGL. The maximum allowable operating pressure for each pipeline is 1,650 pounds per square inch gauge (psig), at a design temperature of 120 degrees Fahrenheit. The Project is under the jurisdiction of the North Dakota PSC, which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-20-247 on 26 August 2020, granting Certificates of Corridor Compatibility Nos. 218 and 219, and Route Permit Nos. 228 and 229 for the Project.

2.2 Regulatory Purpose and Need

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) charges the Public Service Commission with determining that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Inspections during construction ensure that such projects are built in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Orders.

2.3 Scope of Work

The North Dakota Public Service Commission retained Barr Engineering Co. to perform construction inspections of the Project. Barr's scope of work was to complete and document an on-site construction inspection during the construction phase of the project to verify the project was constructed in compliance with the siting laws, rules, and applicable Commission Orders and to verify the pipeline was installed with the depth of cover required in compliance with the Commission's Order. This report contains site visit observations and a summary of findings and issues that should be addressed for the Project to be considered complete and in full compliance.

3 Findings of Site Inspection

3.1 Methods

Andrew Unbehaun, Project Manager/Field Inspector for Barr visited the Project site on 7 October 2020 to conduct construction inspections. Representative for Palmer Consulting and Inspection (Palmer) Andrew Polk accompanied Barr staff on the visit. Palmer oversees daily work by construction contractors to ensure the work is being completed according to applicable codes and approved work plans and procedures.

The site was visually inspected by driving to the access points then walking or driving within the project right-of-way (ROW). Jomax Construction Company, Inc. (Jomax) is the contractor constructing the pipeline for OE2. Contractor equipment operators and spotters were observed during the topsoil removal, trench digging, and trench filling phases of the project to check that soils had been properly removed, segregated, and replaced during construction. Pipe depths were measured from the top of open trenches. General construction procedures were also observed. Digital photographs were taken at observation points showing typical soil removal and pipe depths. Geographic coordinates were recorded at observation points using a handheld Global Navigation Satellite System (GLONASS) device (iPad Air 3rd Generation; <5m accuracy; WGS84 datum).

3.2 On-Site Inspection Observations

Mr. Unbehaun met with Palmer inspector Andrew Polk at the Jomax yard. Mr. Polk and Mr. Unbehaun then proceeded to the Project construction area. In all locations measured, pipe in trench was at or below required depth of cover. Trench wall profiles showed that topsoil had been stripped appropriately. Observations were made that environmentally sensitive areas were marked to mitigate construction impacts. There were some isolated instances where adequate spacing or physical barriers were not present between topsoil stockpiles and subsoil stockpiles or topsoil stockpiles were susceptible to erosion. An example is shown in Map 2 of Appendix A. These were brought to the attention of Andrew Polk and the issues were resolved on-site. Potential mixing was mitigated by further separating the stockpiles and adding silt fence. Silt fence and straw wattles were added around stockpiles to prevent erosion. **(Appendix A)**

The contractors appear to have done a satisfactory job stripping topsoil and constructing the project to meet all siting laws, rules, and Commission Orders. Palmer inspectors appeared to have a strong relationship with the contractor and were involved in ensuring soil was segregated and stored properly. Work areas visited during the inspection were kept free of debris and waste, and movement of vehicles was kept within ROW boundaries.

4 Issues to Resolve and Recommendations

Construction inspection of the Bill Sanderson Residue and NGL Pipeline project verified that the project is constructed in compliance with the siting laws, rules, and applicable Commission Orders. No major issues were observed during construction inspection. However, Barr makes the following recommendations to alleviate minor issues observed at the project:

Issues	Recommendations
Isolated locations of inadequate physical separation of subsoil and topsoil	Create further separation of stockpiles. Where this is not feasible, install silt fence to separate piles until soils are replaced.
Potential topsoil stockpile erosion	Add straw wattles and silt fence around stockpiles to prevent erosion. Replace soils as quickly as possible to mitigate erosion possibility.
Potential for soil mixing during trench backfilling	Continue to use spotters and handle soil with care. Use physical barriers such as additional space and silt fence to aid in keeping soils segregated to the extent feasible

5 Signatures

The services performed by Barr staff for this project have been conducted in a manner consistent with the technical skill and degree of care exercised by professionals currently practicing in this discipline under similar time and budget constraints. Findings and recommendations represent our professional judgement and are based on available information and accepted practices. No warranty is implied or expressed beyond this.



Andrew Unbehaun, Project Manager

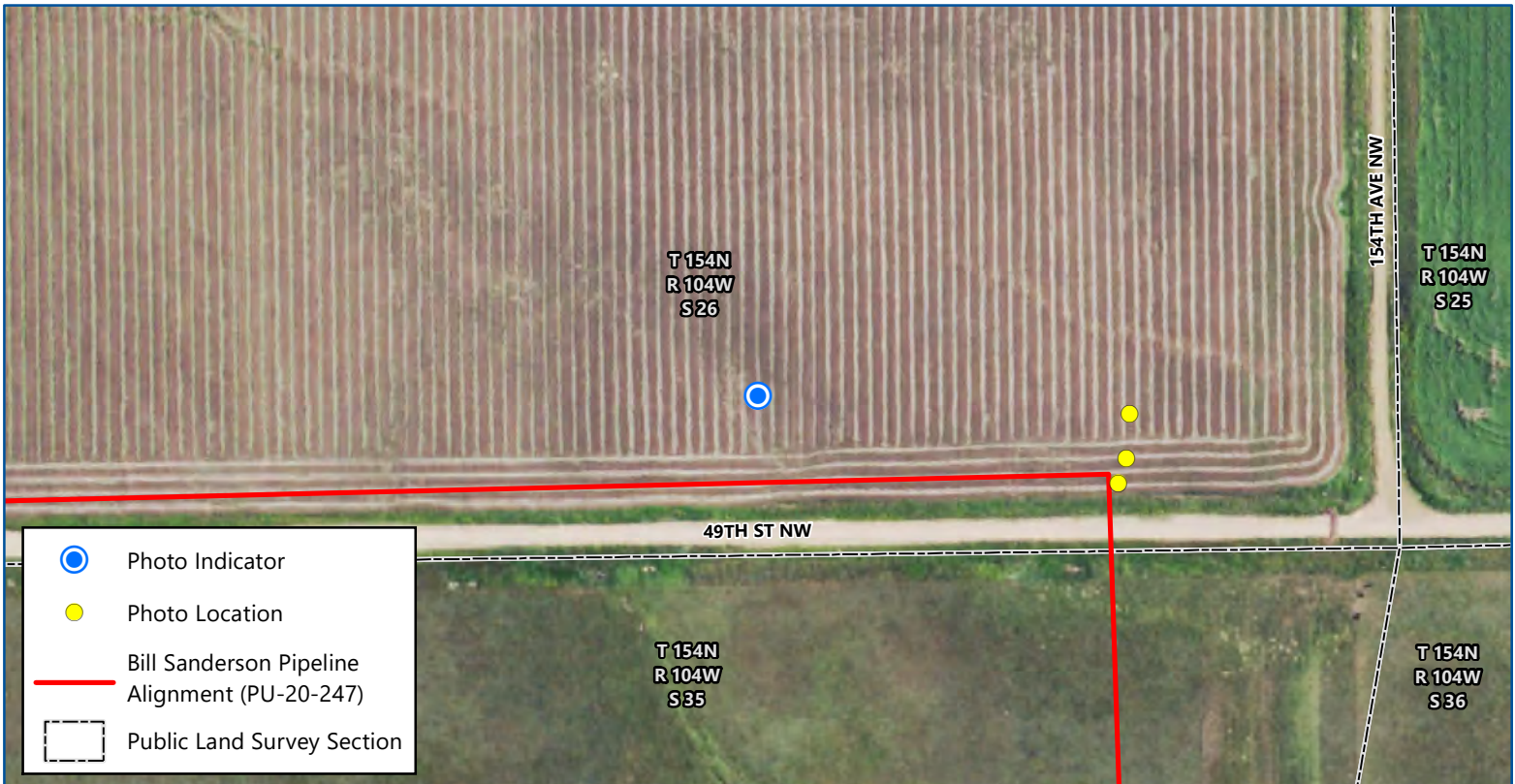
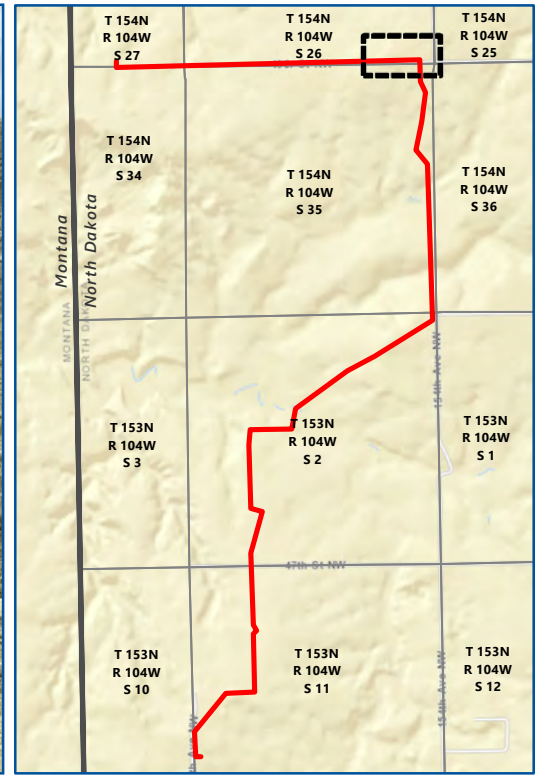
October 22, 2020

Date

Appendices

Appendix A


Photo Log and Observation Maps




Map 1 of 11

BILL SANDERSON NGL PIPELINES CONSTRUCTION INSPECTION PU-20-247

North Dakota Public Service Commission
Williams County, North Dakota



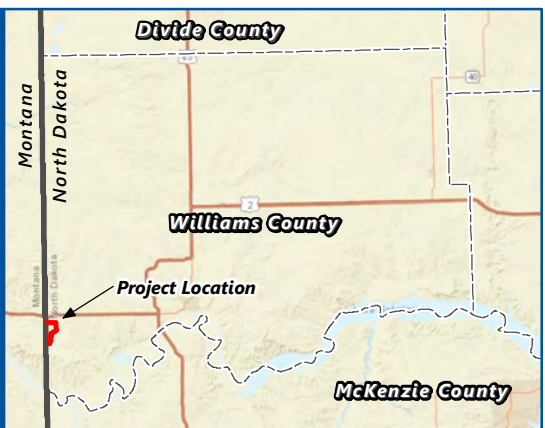


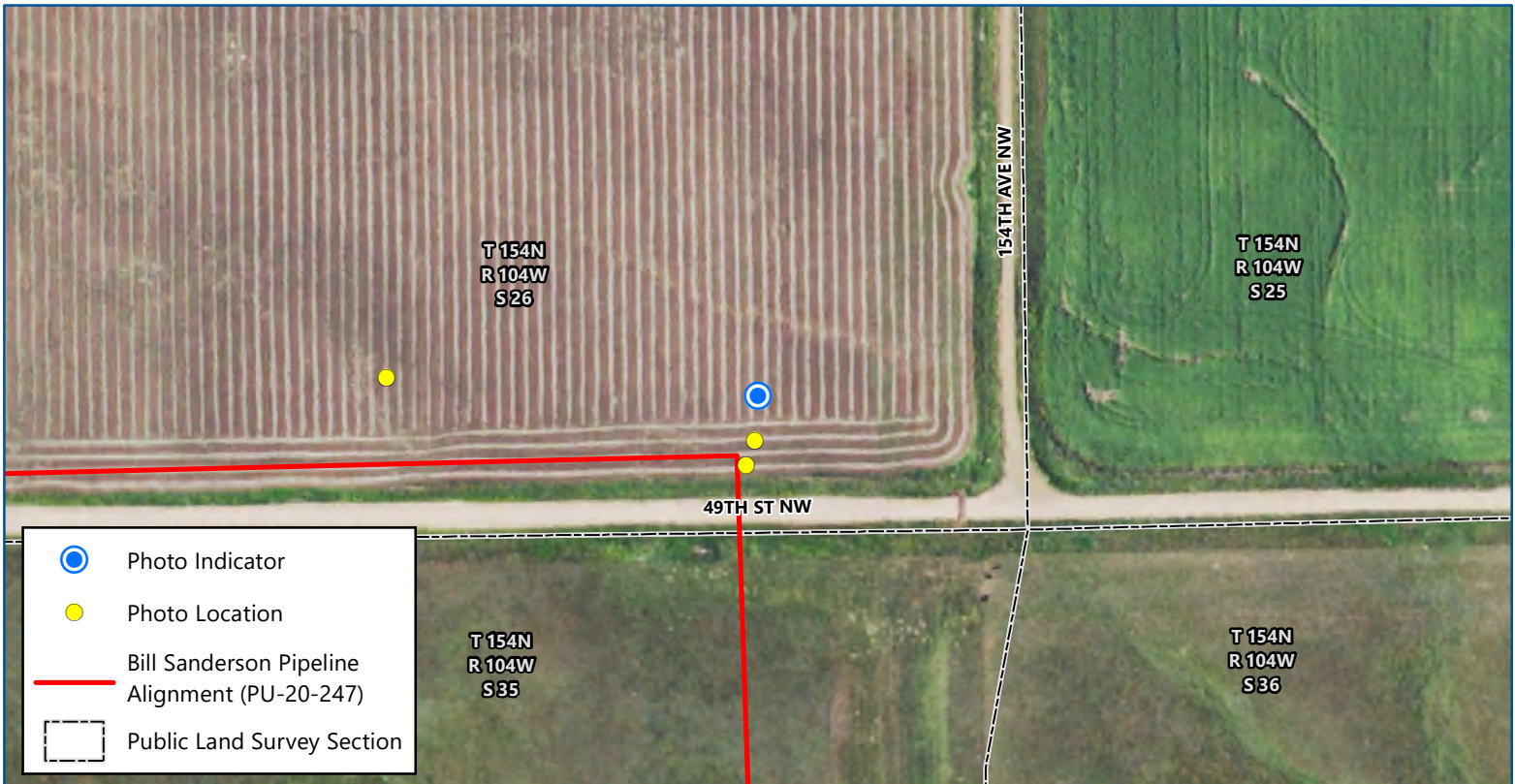
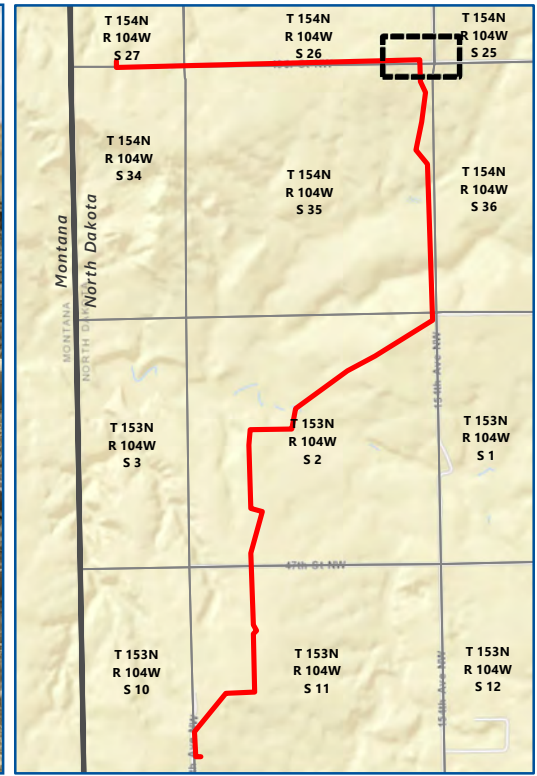
Feet





Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: West
 Comment: Silt fence in place between topsoil and subsoil piles.

Latitude: 48.126181
 Longitude: -104.016718
 Coordinates are in the WGS84 datum.






-  Photo Indicator
-  Photo Location
-  Bill Sanderson Pipeline Alignment (PU-20-247)
-  Public Land Survey Section


Map 2 of 11

BILL SANDERSON NGL PIPELINES CONSTRUCTION INSPECTION

PU-20-247

North Dakota Public Service Commission
Williams County, North Dakota



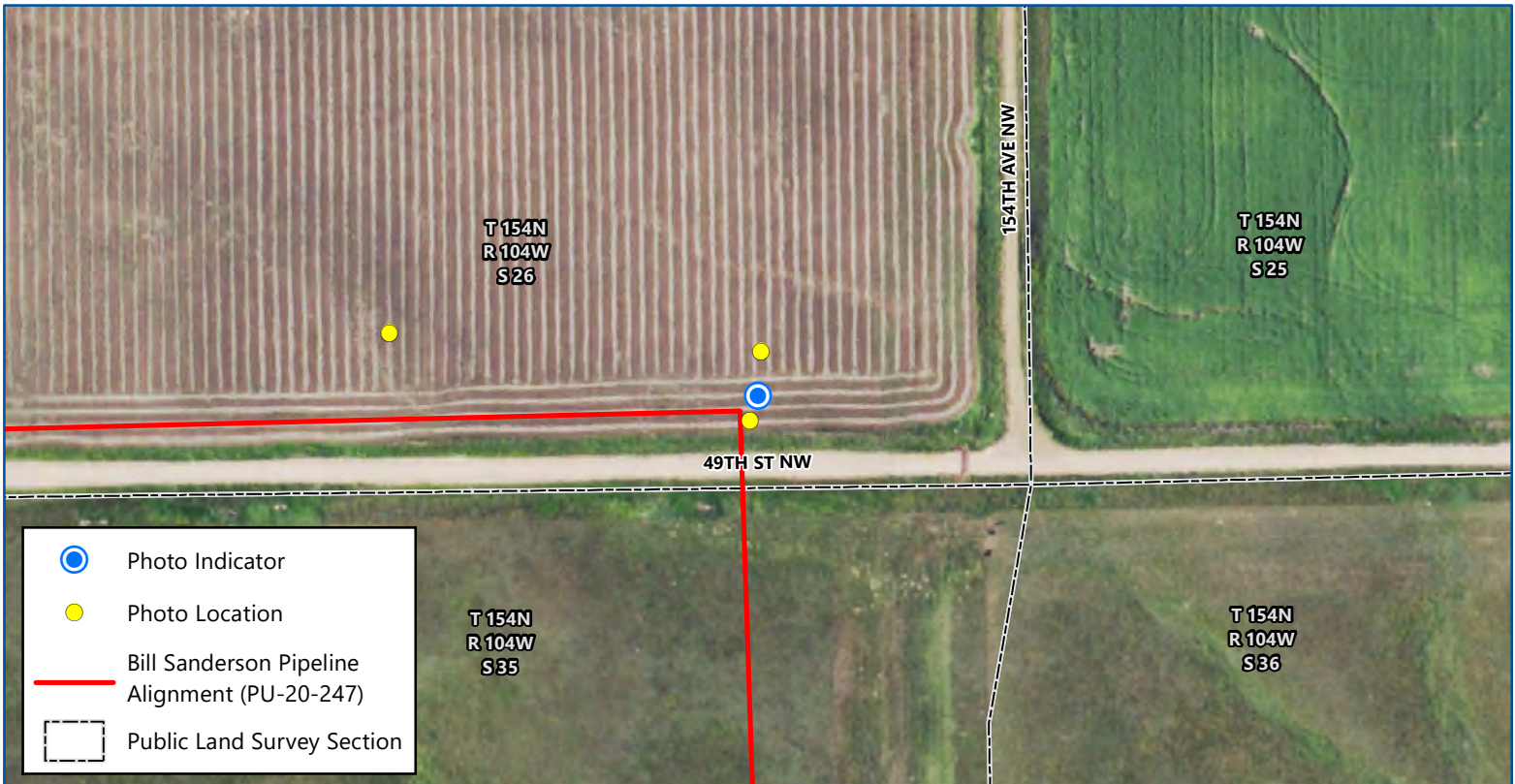
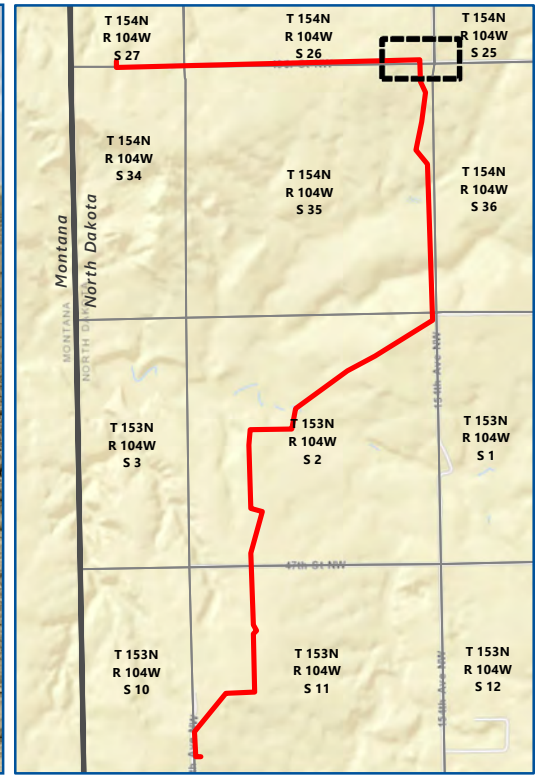


Imagery: USDA FSA (2019)



Date: 10/7/2020
 Photo Direction: West
 Comment: Subsoil spoils pile close to topsoil pile with no visible barrier. No visible mixing.

Latitude: 48.126114
 Longitude: -104.015083
 Coordinates are in the WGS84 datum.

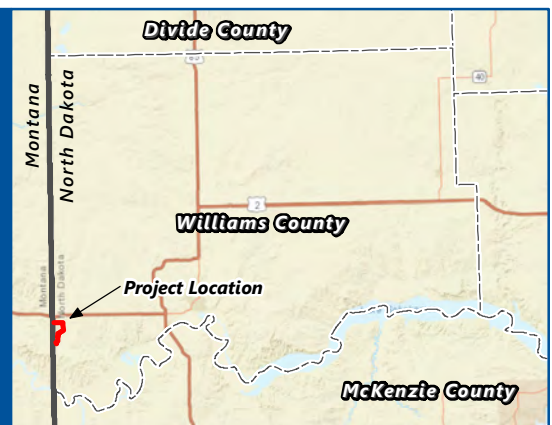


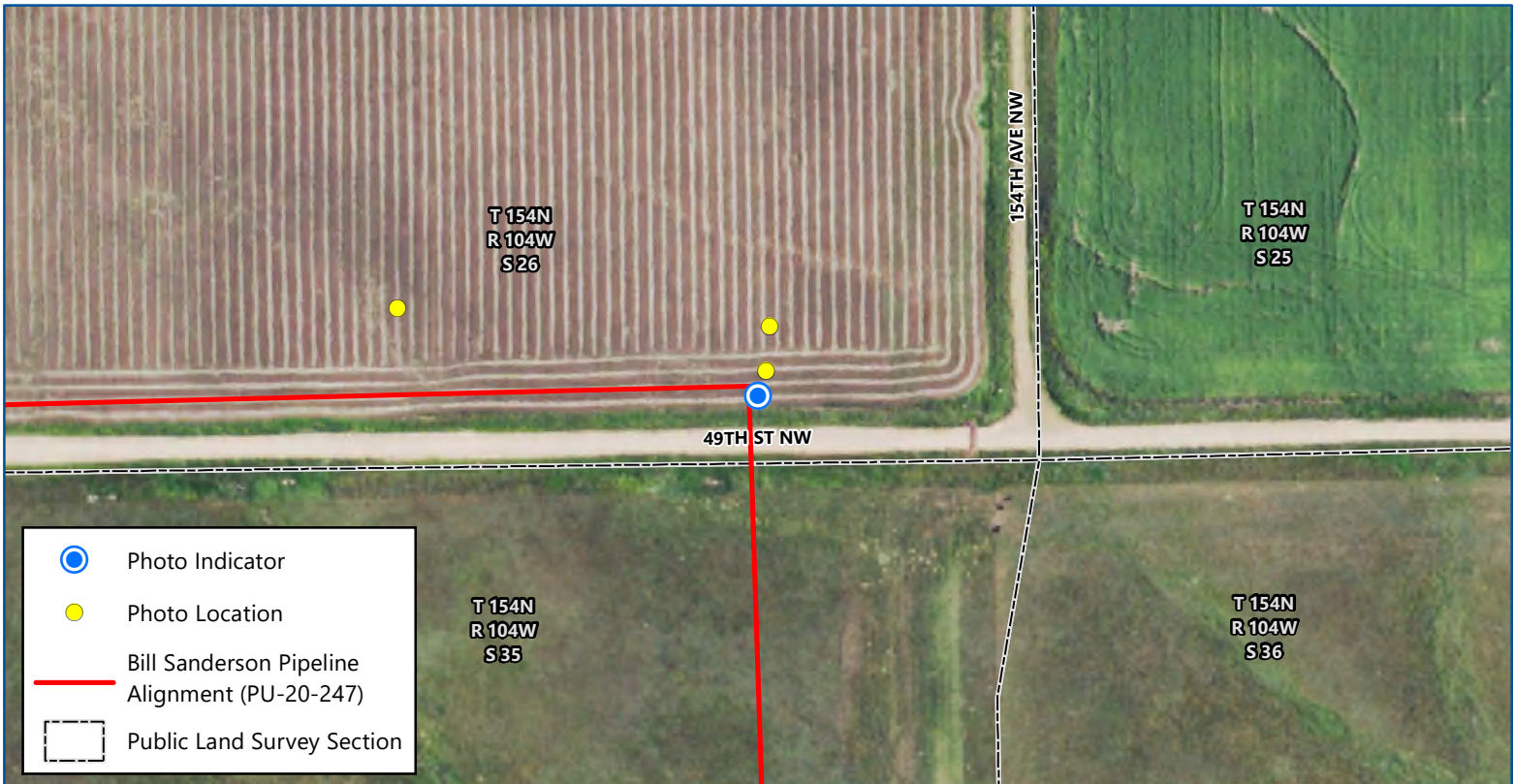
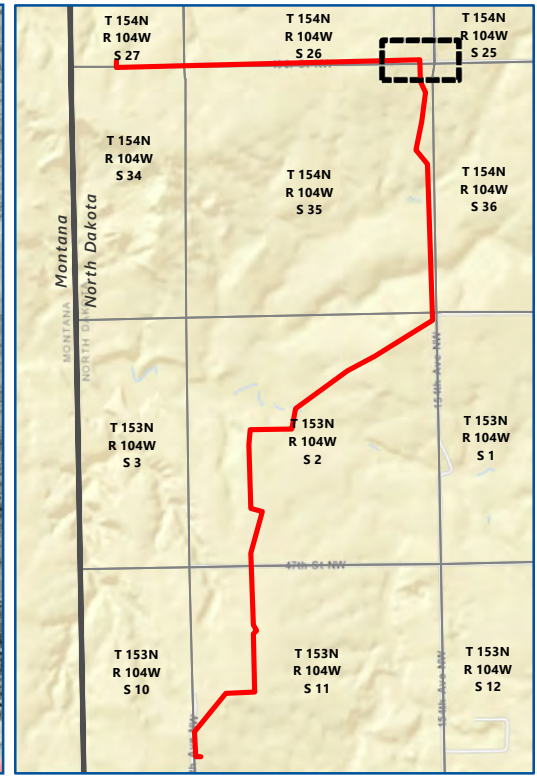


Map 3 of 11
**BILL SANDERSON NGL PIPELINES
 CONSTRUCTION INSPECTION**
PU-20-247
 North Dakota Public Service Commission
 Williams County, North Dakota



 Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: West
 Comment: Depth of cover measured 7 feet.
 Latitude: 48.125982
 Longitude: -104.0151
 Coordinates are in the WGS84 datum.





Map 4 of 11

BILL SANDERSON NGL PIPELINES CONSTRUCTION INSPECTION

PU-20-247

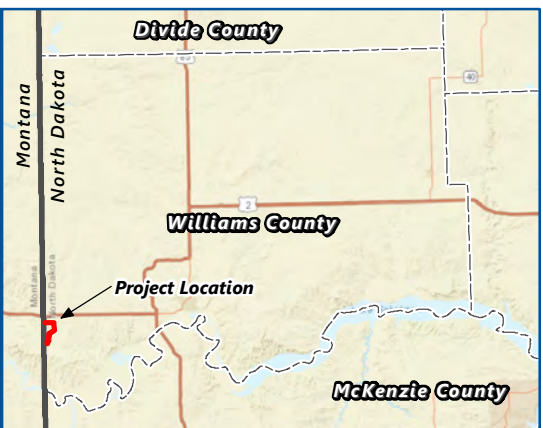
North Dakota Public Service Commission
Williams County, North Dakota

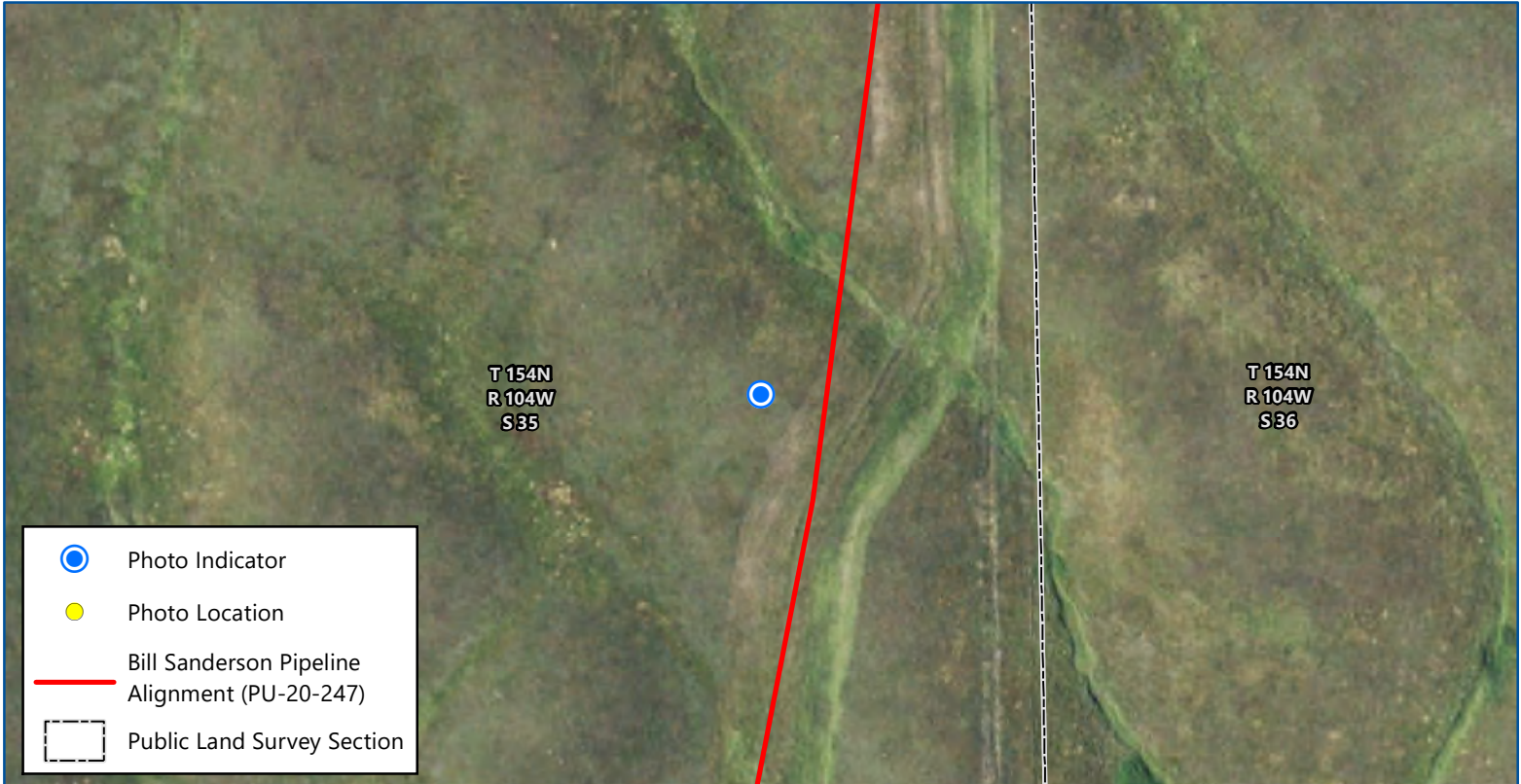
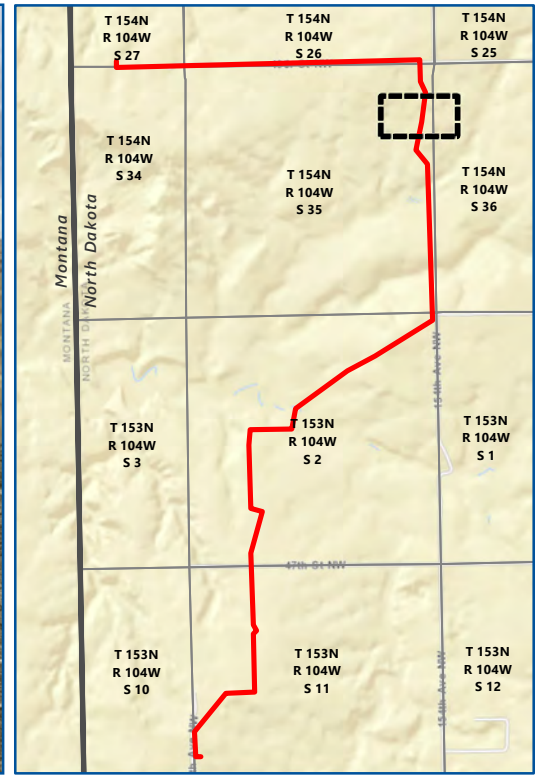
Date: 10/7/2020
Photo Direction: West
Comment: Depth of cover measured 6 feet.

Latitude: 48.125909
Longitude: -104.015138
Coordinates are in the WGS84 datum.

0 200
Feet

Imagery: USDA FSA (2019)





Map 5 of 11

**BILL SANDERSON NGL PIPELINES
CONSTRUCTION INSPECTION
PU-20-247**

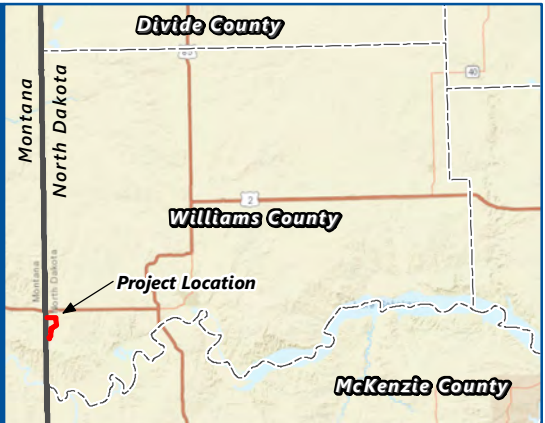
North Dakota Public Service Commission
Williams County, North Dakota

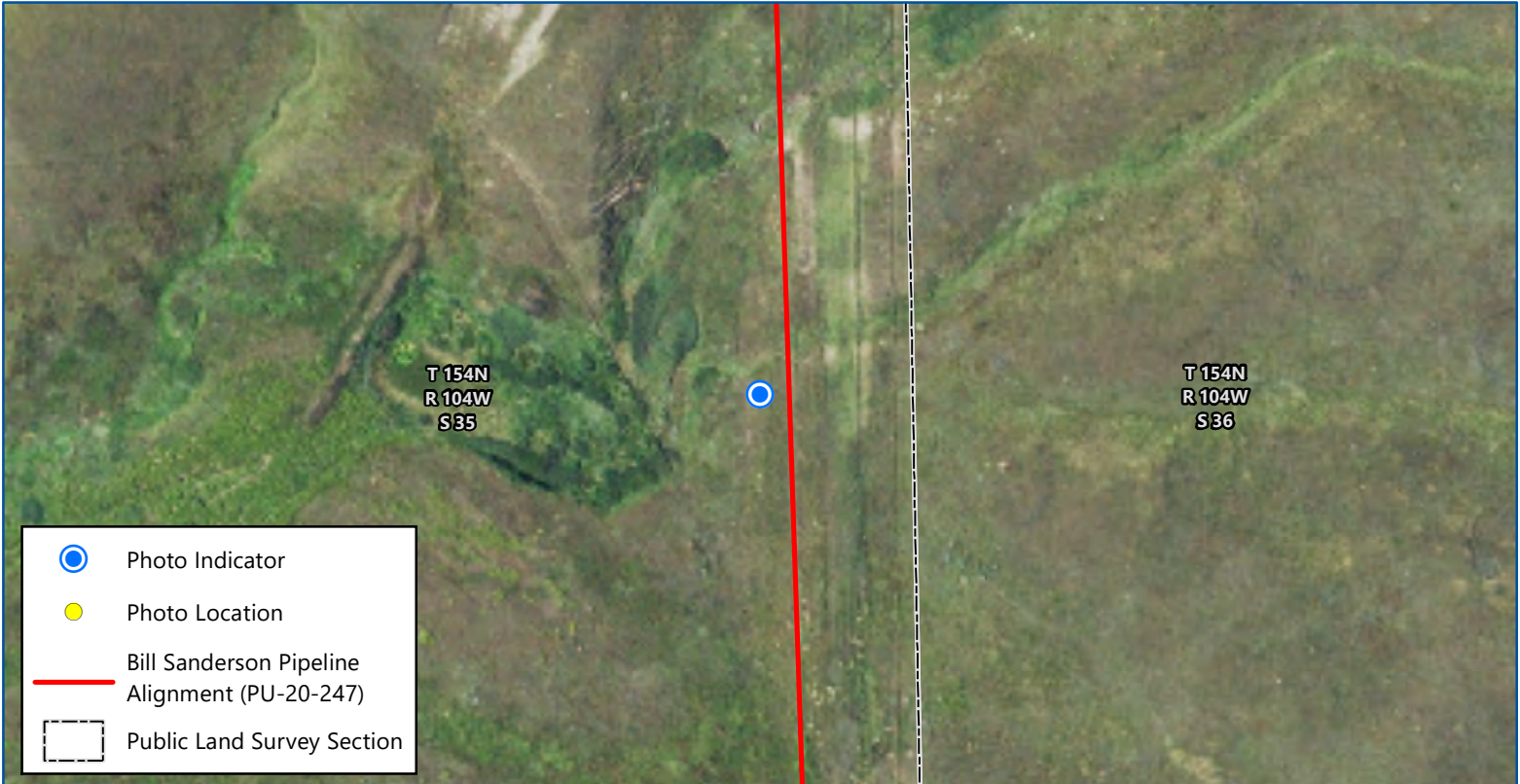
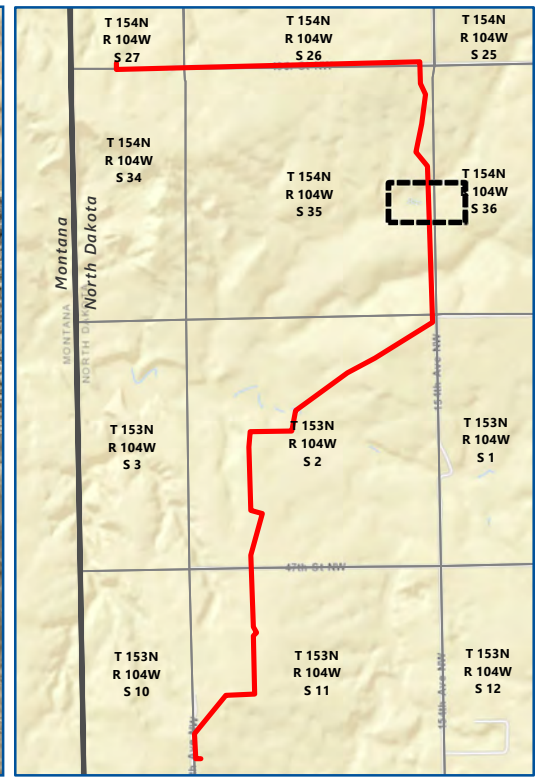
0 200
Feet

Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: South
 Comment: Topsoil segregated, subsoil replaced. No evident mixing.

Latitude: 48.122687
 Longitude: -104.015301
 Coordinates are in the WGS84 datum.





- Photo Indicator
- Photo Location
- Bill Sanderson Pipeline Alignment (PU-20-247)
- Public Land Survey Section

Map 6 of 11

BILL SANDERSON NGL PIPELINES CONSTRUCTION INSPECTION

PU-20-247

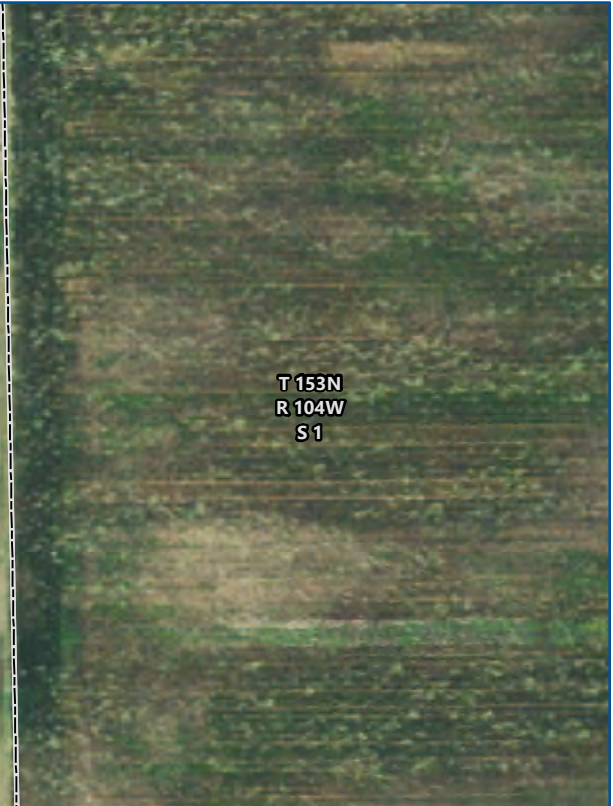
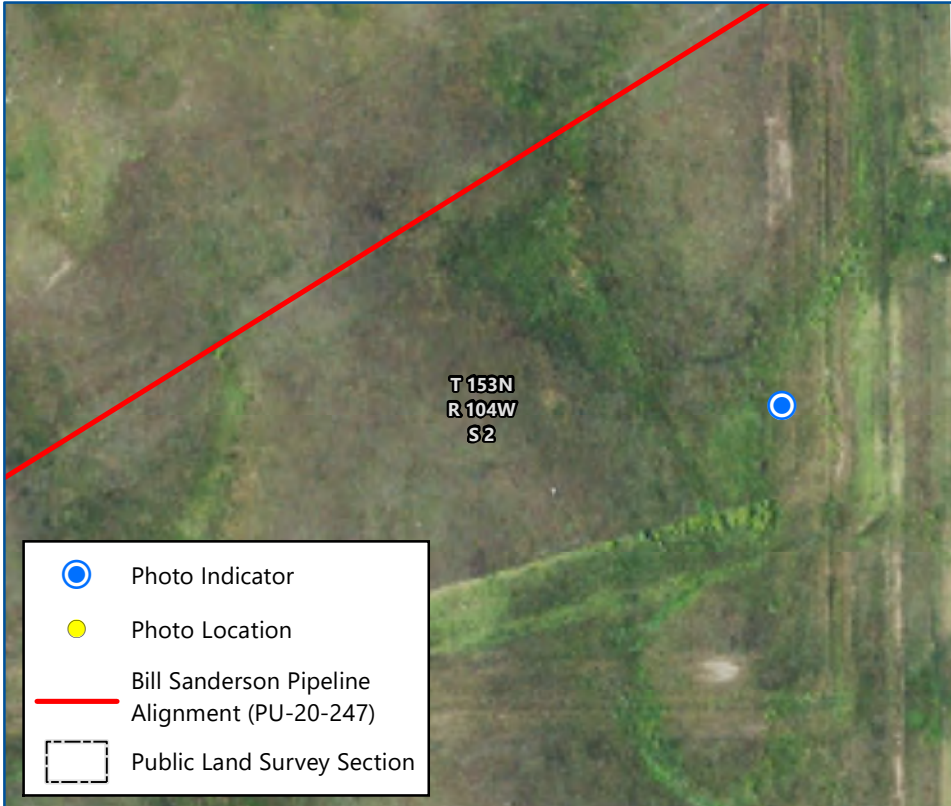
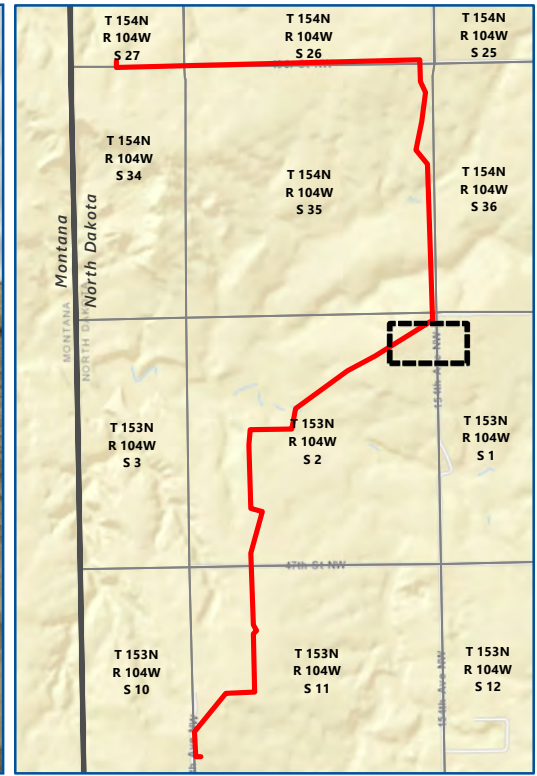
North Dakota Public Service Commission
Williams County, North Dakota





Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: North
 Comment: 7' 6" depth of cover.


Latitude: 48.117824
 Longitude: -104.01472
 Coordinates are in the WGS84 datum.





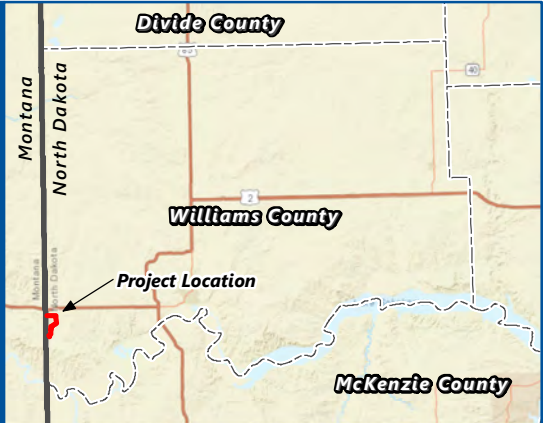
-  Photo Indicator
-  Photo Location
-  Bill Sanderson Pipeline Alignment (PU-20-247)
-  Public Land Survey Section

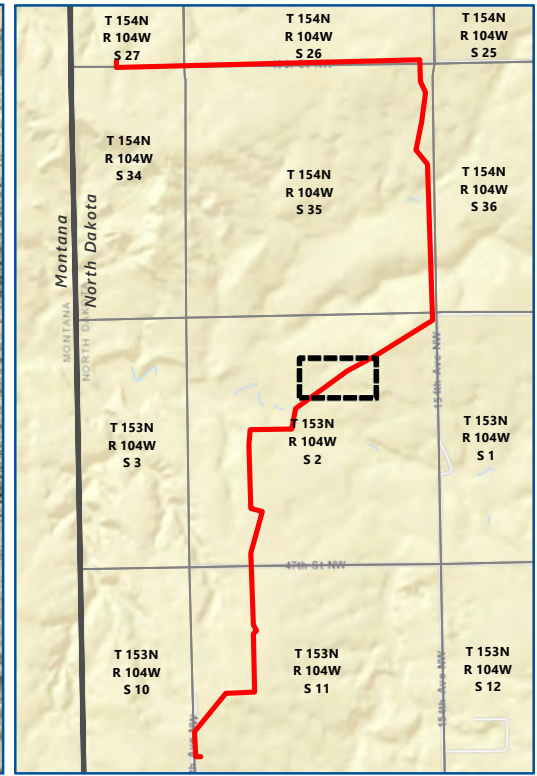
Map 7 of 11
**BILL SANDERSON NGL PIPELINES
 CONSTRUCTION INSPECTION**
PU-20-247
 North Dakota Public Service Commission
 Williams County, North Dakota


 0 200
 Feet
 Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: North
 Comment: Topsoil segregated, subsoil replaced. No evident mixing.

Latitude: 48.10959
 Longitude: -104.014748
 Coordinates are in the WGS84 datum.



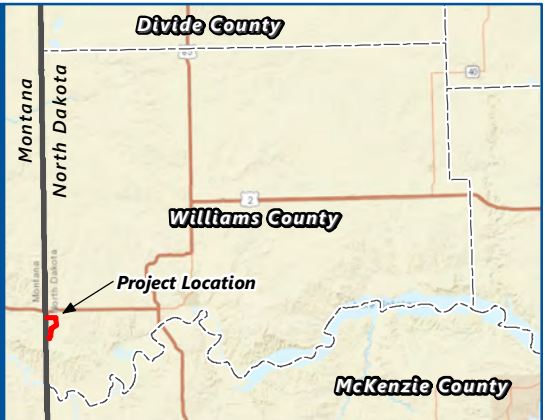


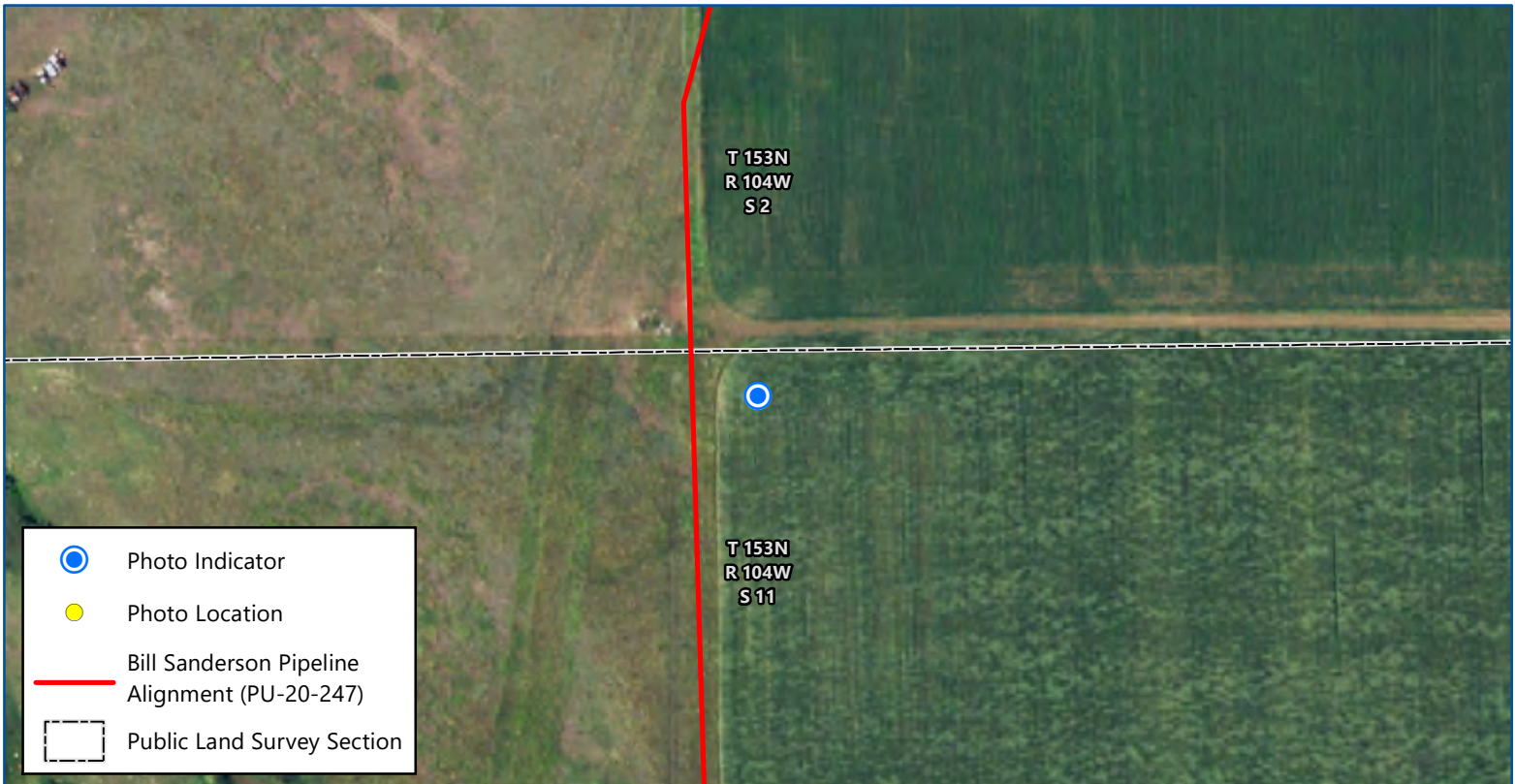
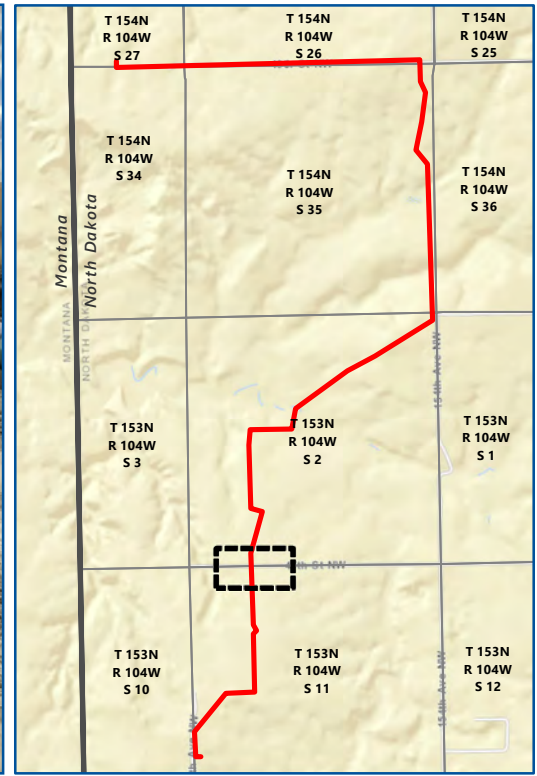
Map 8 of 11
**BILL SANDERSON NGL PIPELINES
 CONSTRUCTION INSPECTION**
PU-20-247
 North Dakota Public Service Commission
 Williams County, North Dakota

0 200
 Feet
 Imagery: USDA FSA (2019)



Date: 10/7/2020
 Photo Direction: Southwest
 Comment: 6' depth of cover.

Latitude: 48.10766
 Longitude: -104.022581
 Coordinates are in the WGS84 datum.



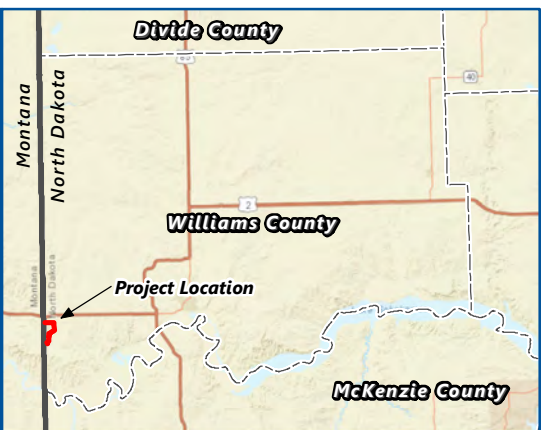


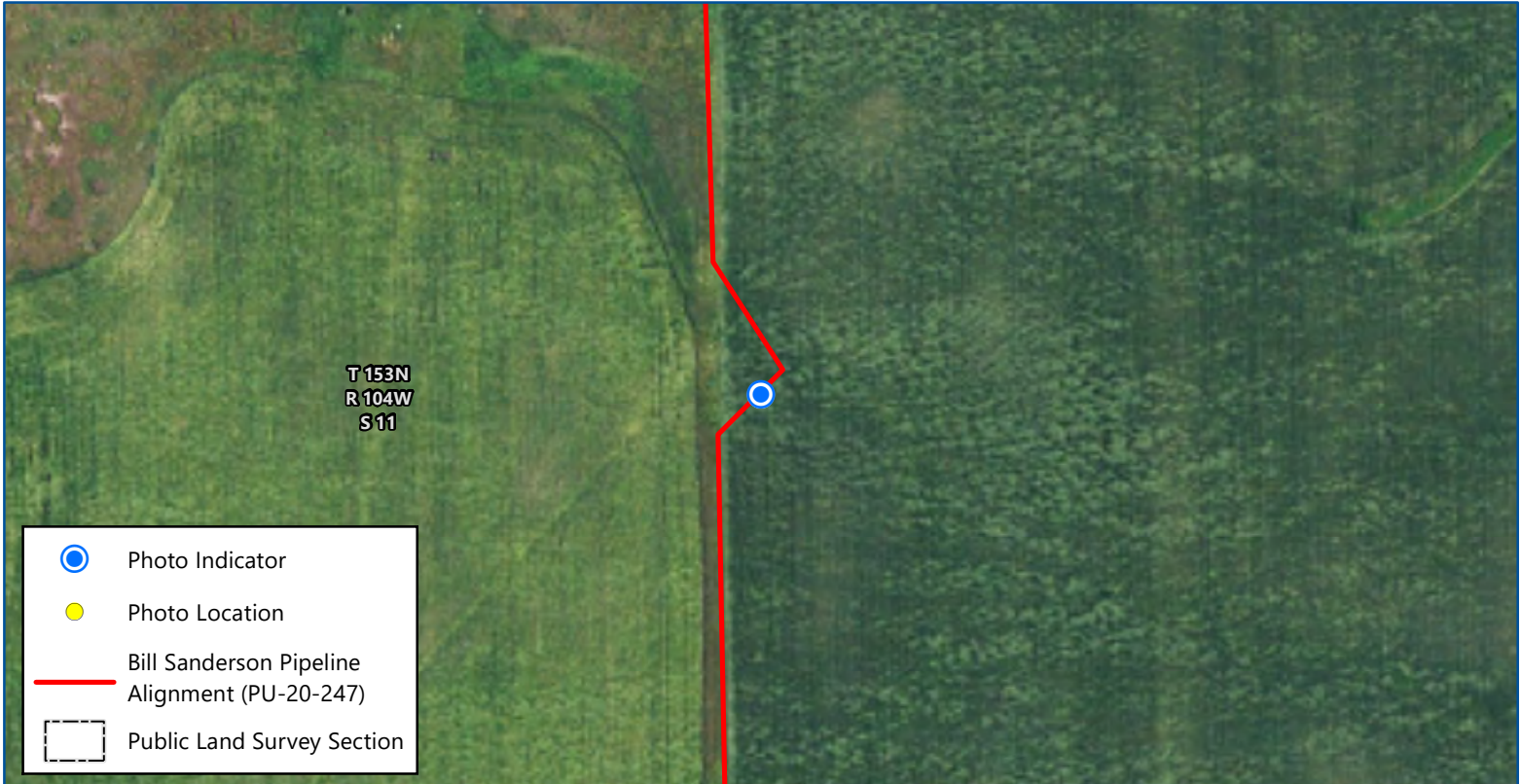
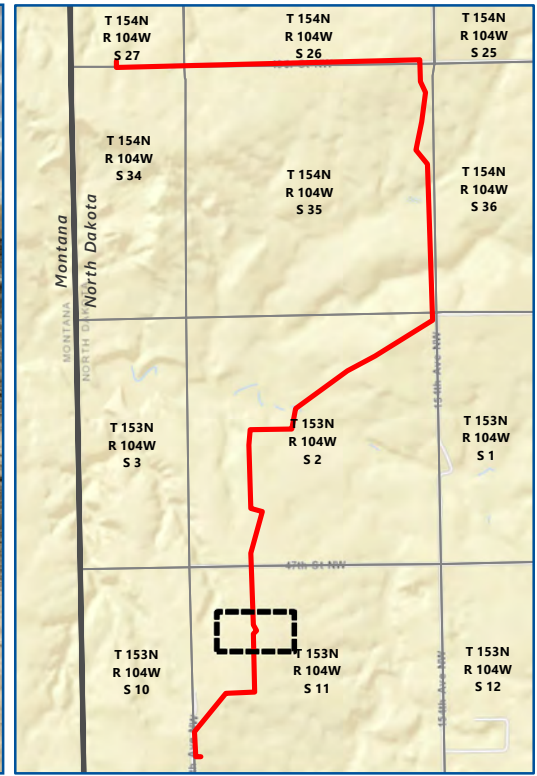
Map 9 of 11
**BILL SANDERSON NGL PIPELINES
 CONSTRUCTION INSPECTION**
PU-20-247
 North Dakota Public Service Commission
 Williams County, North Dakota



 Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: South
 Comment: Typical separation of topsoil and subsoil.

Latitude: 48.096727
 Longitude: -104.029949
 Coordinates are in the WGS84 datum.





Map 10 of 11

**BILL SANDERSON NGL PIPELINES
CONSTRUCTION INSPECTION
PU-20-247**

North Dakota Public Service Commission
Williams County, North Dakota

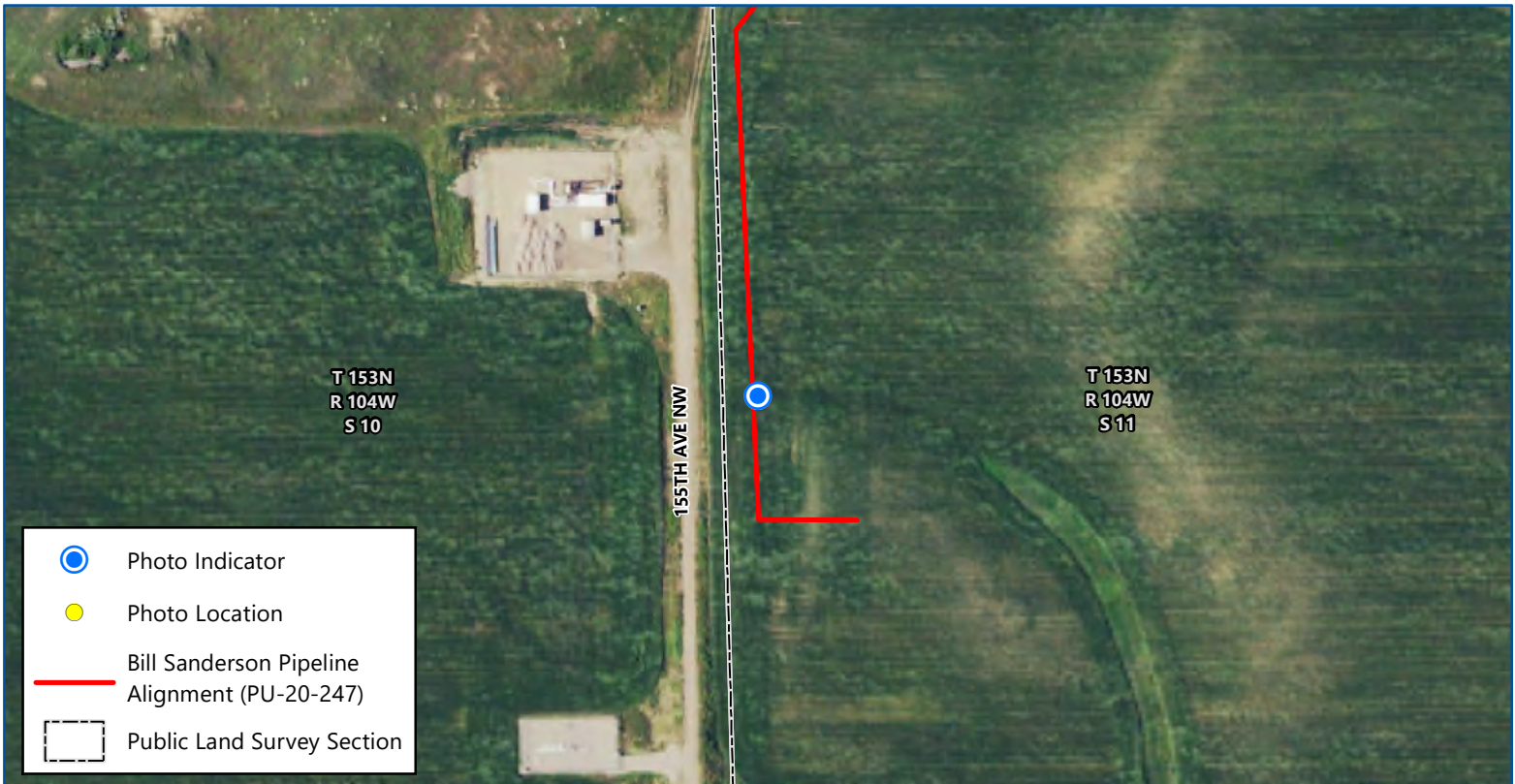
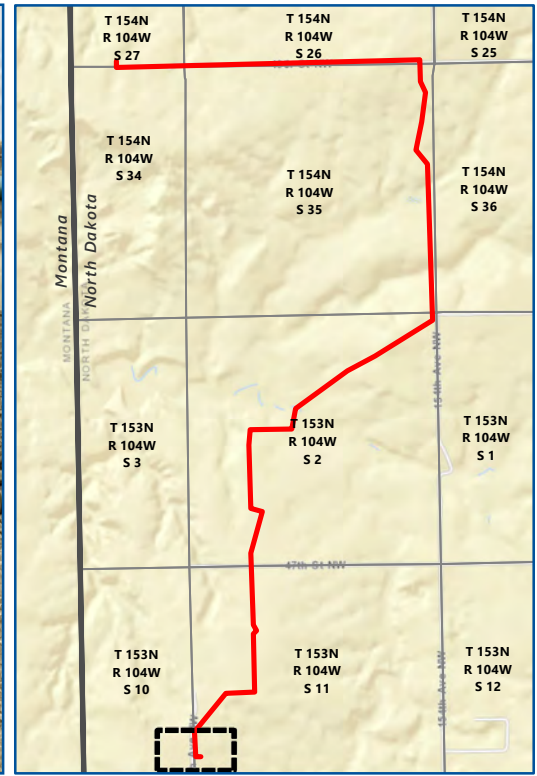
0 200
Feet

Imagery: USDA FSA (2019)

Date: 10/7/2020
Photo Direction: South
Comment: Silt fence installation.

Latitude: 48.093078
Longitude: -104.02995
Coordinates are in the WGS84 datum.







Map 11 of 11

**BILL SANDERSON NGL PIPELINES
CONSTRUCTION INSPECTION**

PU-20-247

North Dakota Public Service Commission
Williams County, North Dakota





Imagery: USDA FSA (2019)

Date: 10/7/2020
 Photo Direction: North
 Comment: 6' depth of cover.

Latitude: 48.086263
 Longitude: -104.03523
 Coordinates are in the WGS84 datum.

