



**PU-25-83**  
**Hiland Crude, LLC**  
**Hiland Gullickson Reroute Pipeline**  
**Topsoil Inspection Report**

File No. 193807545

November 2025

Prepared for:

**North Dakota Public Service Commission**  
600 E. Boulevard Avenue  
Bismarck, ND 58505-0480

Prepared by:

**Stantec Consulting Services Inc.**  
100 Collins Avenue, Suite 101  
Mandan, ND 58554



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## **1.0 EXECUTIVE SUMMARY**

The North Dakota Public Service Commission (PSC) retained Stantec Consulting Services Inc (Stantec) to complete topsoil inspection(s) during construction of the Hiland Crude, LLC (i.e. Hiland) Gullickson Reroute Pipeline, PU-25-083 (i.e., the Project) in McKenzie County, North Dakota. The purpose of the inspections is to ensure the Project is constructed in compliance with the siting laws and rules and the applicable PSC Orders for the Project, which includes a requirement that topsoil must be segregated from subsoil during the installation of the pipeline.

Construction involving soil disturbance for the Project began November 6<sup>th</sup>, 2025. Stantec was present to observe the commencement of topsoil salvage and segregation by Shanco, LLC (i.e., Shanco). Shanco is currently conducting all topsoil stripping of the Project. Hiland Crude also has multiple third-party inspectors present on-site during construction. The third party inspectors, Bobcat, are contracted through Kinder Morgan (to which Hiland Crude is a subsidiary).

Stantec has observed topsoil removal and segregation performed by the Shanco crew on the Project. Hiland has not identified any other contractors for soil stripping.

This Topsoil Inspection Report includes documentation of topsoil stripping, segregation, and stockpiling during the November 6<sup>th</sup>, 2025 and November 10<sup>th</sup>, 2025 on-site inspections of the Project. By and large, soil removal and storage processes are satisfactory. Topsoil removal depths and segregation practices were satisfactory during Stantec's on-site inspections. One occurrence of inadequate BMP usage was observed during the inspection. The Contractor and Kinder Morgan inspectors were made aware of this issue during Stantec's on-site inspection.



## 2.0 BACKGROUND INFORMATION

### 2.1 INTRODUCTION

Hiland has begun construction on the Gullickson Reroute Pipeline, a proposed 3.4 mile long, 8-inch steel crude oil pipeline in McKenzie County North Dakota. The Project stretches from Hiland's Operating LLC Pad to a proposed block expansion valve, located West of Alexander, ND.

### 2.2 PURPOSE & SCOPE

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission to determine 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. Construction inspections aim to ensure that such projects are constructed 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 PSC Findings of Fact, Conclusions of Law, and Order (Order). The PSC issued its Findings of Fact, Conclusions of Law and Order in Case No. PU-25-083 on August 7<sup>th</sup>, 2025, granting Certificate of Corridor Compatibility No. 241.

The PSC retained Stantec to complete construction inspections, and specifically a topsoil inspection, of the Project. The inspection process included a review of the Application, the Project's Order, and other applicable documents. The primary intent of the initial topsoil inspection is to document compliance with PSC's Certificate Relating to Project Order Provision #12, which states: *"Company understands and agrees that topsoil, up to 12 inches, or topsoil to the depth of cultivation, whichever is greater, over and along trench areas, must be carefully stripped and segregated from the subsoil. Any area on which excavated subsoil will be placed must first be stripped of topsoil. The stripped topsoil must not be stockpiled in natural drainages, and must be protected from water erosion. Care must be taken to protect topsoil from unnecessary compaction by heavy machinery. Unless otherwise approved by the Commission, topsoil must be removed before topsoil freezes in the late fall/early winter to the point that frost inhibits proper soil segregation. After backfilling with subsoil is completed, any excess subsoil must be placed over the excavation area, blending the grade into existing topography. Topsoil must be replaced over areas from which it was stripped only after the subsoil is replaced."*



## **2.3 REGIONAL SOILS**

The entirety of McKenzie County is located in the Missouri Plateau. Soils in this region are generally formed from weathered sedimentary shale or glacial deposits. The regional geology typically consists of a mantle of till (when present) overlying the older residual sediments. The majority of the soils present throughout the Project would be classified as mollisols and characterized by a relatively dark, thick "A" (topsoil) horizon. The primary exception to this are soils found nearer summit and shoulder-slopes of hilltops that may lack a thick A horizon. Some soils may be salt-affected, which have adverse properties from salinity and/or sodicity.

The main difference between topsoil and subsoil in this region is most often the presence of calcium carbonates, accumulation of salts such as sodium, and a reduction in organic matter. Calcareous subsoils can be visually distinguished by the lighter colors associated with calcium carbonates and/or a reduction in organic matter. Subsoil generally has lower organic matter content than topsoil, making it typically lighter in color. It may also have different chemical and physical properties (i.e., texture) than the topsoil.

Topsoil identification on saline or sodium affected soils (i.e., alkali or sodic soils) is sometimes less apparent solely by color, but topsoil can be distinguished by accumulations of salt, clay and/or associated structure (i.e., columnar clay pans). Salt-affected sodic soils, when tilled or disturbed, are typically hard and cloddy when dry, often coated with a visible salt crust. Accumulation of salts in the subsoil is common, and can severely restrict plant growth. The presence or absence of existing plant roots can be used as an indication between topsoil and unsuitable subsoil in certain situations, such as clay-pan subsoils.

## **2.4 TOPSOIL STRIPPING AND SEGREGATION BEST PRACTICES**

Topsoil has biological, physical and chemical properties that are critical to successful reclamation after soil disturbances, such as pipeline installation requires. The surface layer of most soils is considered topsoil primarily due to its content of organic matter. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth. Topsoil, typically considered the A horizon, should be stripped according to natural variations in the depth of this darker layer of organic-matter-rich soil.

During pipeline preparation and excavation work, operators are to segregate topsoil and subsoil. Mixing subsoil with the topsoil can be detrimental to the re-vegetation and vegetative productivity of the soil. Hilltops and steeper sloping terrain generally have thinner topsoil layers; while lower, flatter, foot-slopes and swales typically have thicker topsoil layers. The most common exception to this is salt-affected soils, where the accumulation of salts and clay often restrict plant root growth. Equipment operators need to be aware of the natural soil landscape relationships, as well as the potential for accumulations of salts, both of which drive topsoil thicknesses, and adjust stripping depths accordingly.



## **2.5 INSPECTION METHODOLOGY**

Stantec visually inspected the Project by walking and driving within the Project corridor in the presence of Hiland's on-site third-party inspectors. During the inspection, work done by contractors/equipment operators was observed to verify that the topsoil has been properly removed, piled, and kept segregated from subsoil. An iPhone was used to collect photographs during the inspection with the utilization of Arc GIS's Field Maps application for GPS locating and documentation purposes. Location-referenced photographs are provided in Appendix A and Geographical Information System (GIS) generated map(s) of observation locations are provided in Figure 1.

Stantec shared the PSC order provisions relating to topsoil stripping, segregation, and protection with individuals present during the inspection and provided opportunity for Hiland's inspectors to ask questions on expectations for topsoil stripping depths and segregation. Stantec then observed the contractor's topsoil stripping, segregation of stockpiling practices. Visual inspections were made by Stantec at various locations to confirm the proper depths of topsoil stripping were reached, and the underlying subsoils were not being mixed with the topsoil being stripped.



### **3.0 INSPECTION RESULTS**

Topsoil removal began the day of the first inspection on November 6<sup>th</sup>, 2025 at the southern end of the project near the intersection of 36<sup>th</sup> St NW and 154<sup>th</sup> Ave NW. Jordan Twete, Registered North Dakota Professional Engineer with Stantec, was present to ensure PSC order provisions were understood and followed.

During Stantec's first inspection, topsoil was stripped along approximately 200 ft. of right-of-way by the end of the first day. Stripping commenced at the project start (Hiland Operating LLC Pad), to where the pipeline is planned to be bored underneath 36<sup>th</sup> St NW. Topsoil stripped within the pipeline right-of-way was stockpiled adjacent to the right-of-way within a temporary construction easement.

Mr. Twete met with the Kinder Morgan inspectors upon arrival to the Project site on the morning of November 6<sup>th</sup>, 2025 to review PSC topsoil requirements with all involved parties. Mr. Twete stated the requirements set forth in PSC order provision #12 related to topsoil. Topsoil stripping activities on the first day was limited to a small area due to the Contractor focusing mainly on mobilizing equipment to the project site and installing rig matting along ditches and lowland/wetland areas. During this visit, topsoil stripping and segregation was performed by an excavator due to significantly steep side slopes, which are present at several locations throughout this project. Mr. Twete was notified by the Kinder Morgan inspectors that very little topsoil stripping would be performed over the next several days, so a second visit was not made until November 10<sup>th</sup>.

During Stantec's second visit on November 10<sup>th</sup>, Shanco had three separate crews spread across the site performing topsoil stripping and segregation. Stripping operations on this day were in line with a more typical methodology, with dozers performing the majority of the earth moving and excavators working the steeper slopes not navigable by a dozer. Upon arrival of the morning of the second visit, approximately one-half mile of right-of-way was fully stripped and segregated. Stripped topsoil depths and subsequent segregation observed at the finished locations appeared to be adequate. Mr. Twete also observed stripping and segregation practices of the three active crews during this visit. There were no locations where stripping depths or segregation and stockpiling practices were of concern during both days of Mr. Twete's site visits.

The pipeline route for this project navigates a challenging terrain consisting of several bluffs, steep hills and multiple wetland crossings. Extra attention to soil erosion management is critical to a project with this type of terrain. During Mr. Twete's two site visits, there were no erosion control BMP's in place at any locations. One location was observed where topsoil was stockpiled on a relatively steep slope abutting a wetland avoidance area. Mr. Twete recommended to the Kinder Morgan inspectors that a silt fence or bio-roll be placed at the downslope end of this stockpile to contain soils and prevent erosion into the underlying wetland, which appeared to be a drainage route for the surrounding agricultural land. Mr. Twete mentioned to the inspectors that erosion control BMP's should be installed at any other locations similar to the previously described scenario. The Kinder Morgan inspectors stated that they would direct Shanco to install BMPs at the requested location and noted that they would be installed at other locations as well.



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Prior to Mr. Twete's departure from the site on the final day, other topics discussed with the Kinder Morgan inspectors included:

- **Soil Segregation:** Topsoil and Subsoil should be segregated into separate piles placed far enough away from each other to the extent that they do not comingle, and must remain segregated until final replacement.
- **Soil Compaction:** All topsoil within the work zone must be stripped or otherwise protected, using mats or other means to mitigate topsoil compaction.

In conclusion, Shanco did a good job with initial topsoil stripping. Initial topsoil stripped depths were determined to be approximately 6" to 8" on average. The topsoil that was stripped during Stantec's inspection appeared to be done so down to the underlying subsoil, and stockpiles were kept free of subsoils.

Stantec has determined that equipment operators have demonstrated competency concerning topsoil and subsoil removal and segregation in compliance with the Commission's Order. Though no BMPs were installed during initial topsoil stripping, the Kinder Morgan inspectors stated erosion control would be installed in the near future. Topsoil handling and soil erosion will continue to be monitored by Stantec during the subsequent construction inspection(s) and reporting.



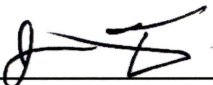
## 4.0 SIGNATURE

Stantec's Project Manager and Registered North Dakota Professional Engineer, Jordan Twete prepared this report. The report was reviewed by Matt Retka, North Dakota Professional Soil Classifier.

The conclusions in this Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from the ND PSC and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the ND PSC in accordance with Stantec's contract with the ND PSC. While the Report may be provided to applicable authorities having jurisdiction and others for whom the ND PSC is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

  
\_\_\_\_\_  
Jordan Twete  
Project Manager  
Civil Engineer

November 20, 2025  
\_\_\_\_\_  
Date



# **FIGURES**

**Figure 1: Topsoil Observation Locations Map**

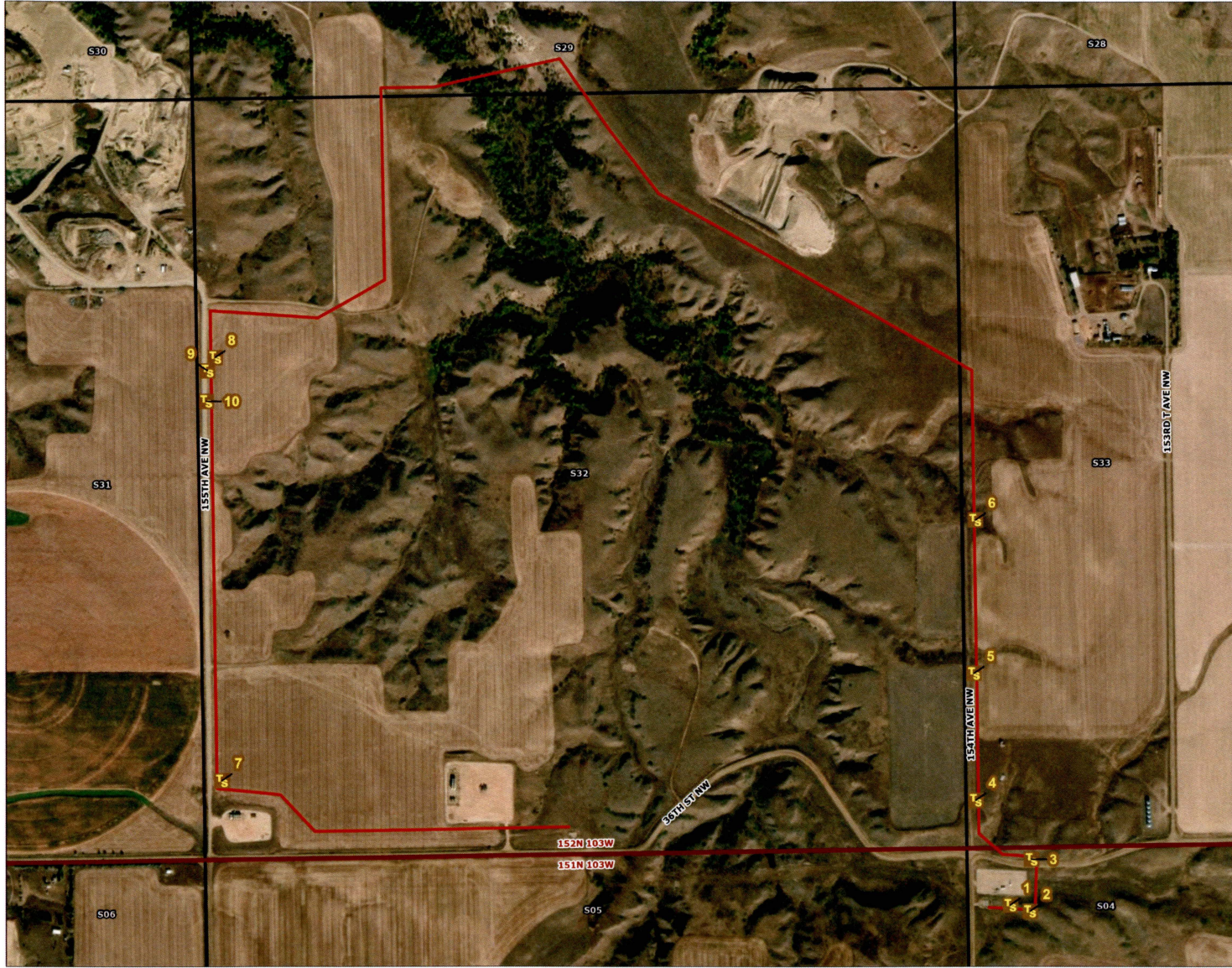


Figure No.  
**1**

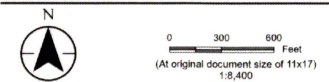
Title  
**Hiland Gullickson Reroute Pipeline**

Client/Project  
North Dakota Public Service Commission  
PU-25-83 Hiland Gullickson Reroute

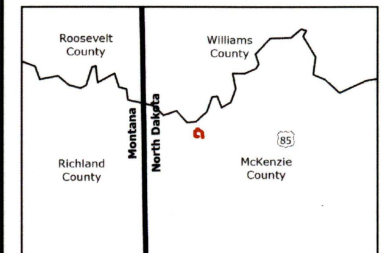
227708322

Project Location  
T52N, R103W, S32  
McKenzie Co., ND

Prepared by BS on 2025-11-17



- Legend
- Hiland Gullickson Reroute Pipeline
  - Township Boundary
  - Section Boundary
  - Topsoil Observation Point Location



Notes

1. Coordinate System: NAD 1983 UTM Zone 13N
2. Data Sources: ESRI, USGS
3. Background: ESRI World Imagery



Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

# **APPENDIX A**

## **Observation Point Photolog**

**PU-25-83 (Hiland Gullickson Reroute Pipeline): Observation Point Photolog**



**Observation Point: 1**

Date Taken: November 6, 2025 11:13 AM  
Direction Photo is Taken: East

Photo Description: Topsoil stripping along steep slope, properly segregated and stockpiled along south side of ROW.

Latitude: 47.93391017858737  
Longitude: -103.88227486131973




**Observation Point: 2**


Date Taken: November 6, 2025 11:20 AM  
Direction Photo is Taken: Northeast


Photo Description: Topsoil stripping along steep slope at beginning of project. Stripped depth of approx. 4", very minimal existing topsoil in this area.

Latitude: 47.93378677155014  
Longitude: -103.88172219548461


**PU-25-83 (Hiland Gullickson Reroute Pipeline): Observation Point Photolog**


	<p><b>Observation Point: 3</b> Date Taken: November 10, 2025 10:44 AM Direction Photo is Taken: West</p> <p>Photo Description: Overlooking stripped and segregated soils along the ROW</p> <p>Latitude: 47.93477950243774 Longitude: -103.88165759130021</p>
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	<p><b>Observation Point: 4</b> Date Taken: November 10, 2025 10:50 AM Direction Photo is Taken: North</p> <p>Photo Description: Right-of-way fully stripped of topsoil and segregated in this area. Depth of topsoil is approx. 8".</p> <p>Latitude: 47.93591517145697 Longitude: -103.88320273767935</p>
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	<p><b>Observation Point: 5</b> Date Taken: November 10, 2025 10:55 AM Direction Photo is Taken: North</p> <p>Photo Description: Contractor demonstrating use of rig mats across wetland. Topsoil not stripped in this area, designated for boring under wetland as required.</p> <p>Latitude: 47.93832366919854 Longitude: -103.88320122719254</p>
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**PU-25-83 (Hiland Gullickson Reroute Pipeline): Observation Point Photolog**

	<p><b>Observation Point: 6</b> Date Taken: November 10, 2025 10:59 AM Direction Photo is Taken: Southeast</p> <p>Photo Description: Topsoil stockpile terminated at the top of a valley where erosion into the underlying drainage route could be an issue. It is recommended that an erosion BMP is placed here</p> <p>Latitude: 47.94124050587614 Longitude: -103.8830968516288</p>
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	<p><b>Observation Point: 7</b> Date Taken: November 10, 2025 11:23 AM Direction Photo is Taken: East</p> <p>Photo Description: Topsoil stripped within right of way. Minor amounts of topsoil present within stripped area but negligible, subsoil is apparent across the right of way.</p> <p>Latitude: 47.9364792753403 Longitude: -103.90448086317927</p>
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	<p><b>Observation Point: 8</b> Date Taken: November 10, 2025 11:30 AM Direction Photo is Taken: South</p> <p>Photo Description: Topsoil stripped along right-of-way, stockpiled within construction easement.</p> <p>Latitude: 47.9445348024772 Longitude: -103.9044852695478</p>
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**PU-25-83 (Hiland Gullickson Reroute Pipeline): Observation Point Photolog**



**Observation Point: 9**  
Date Taken: November 10, 2025 11:42 AM  
Direction Photo is Taken: North  
  
Photo Description: Edge of stripping limits shown to depict approximate depth of topsoil stripped across right of way  
  
Latitude: 47.94428400052437  
Longitude: -103.9047079275423



**Observation Point: 10**  
Date Taken: November 10, 2025 11:46 AM  
Direction Photo is Taken: South  
  
Photo Description: Contractors stripping operations consisting of one dozer and one laborer.  
  
Latitude: 47.9437030555911  
Longitude: -103.90475643564756