

# Memorandum

**To:** Rochelle Harding, Cerilon GTL ND Inc.  
**From:** Jim Aiken, Barr Engineering Co.  
**Subject:** Topsoil Management Plan – PSC Case No. PU-23-325  
**Date:** July 9, 2024

Dear Ms. Harding:

Barr Engineering Co. (Barr) prepared this letter to summarize a proposed work plan for a topsoil management plan at the proposed Cerilon Gas to Liquids (GTL) facility located near Trenton, ND (Project Site; Figure 1).

## 1 Background

The proposed Project Site is approximately 1.5 miles southwest of Lake Trenton and the unincorporated community of Trenton, 2.75 miles northwest of the Missouri River, 5 miles northeast of the unincorporated community of Buford, and 7.5 miles southwest of the city limits of Williston. The proposed Project Site is bordered to the west by Savage Services Corporation's Bakken Petroleum Services Hub (Savage), to the north by the Great Northern Railroad, and to all other sides by agricultural land, homesteads, and farmsteads.

### 1.1 Soils

The proposed Project Site is in the Williams County Soil Survey Area. Seven soil regions are present within the proposed Project Site. The largest area, 231 acres, consists of two different loam soils with less than two percent slope and are classified as well-drained soils with occasional flooding. Seventy-four acres consist of silty clay with less than two percent slopes. The rest of the Project Site is considered silty loams or fine sandy loams with less than six percent slope and a well-drained landscape.

Barr sampled the topsoil throughout the Project Site in July 2023 to assist in estimating the volume of topsoil that must be stripped and stockpiled. This evaluation identified that portions of the site contain silty clay or silty clay loam with elevated salt and/or sodium content (Figure 2). These soils would likely contaminate any stockpiled topsoil and are recommended to be segregated from reclaimable topsoil.

### 1.2 Impacts

Construction at the proposed Project Site would result in the permanent conversion of 231 acres of farmland to heavy industrial, including grading the site, installing permanent structures, and covering large areas with impermeable surfaces (e.g., concrete).

### 1.3 Mitigation

The Project will be constructed using best management practices (BMPs) to minimize erosion and soil compaction and promote reclamation success in all areas practicable. These BMPs will include erosion and sediment control, segregating topsoil from subsurface materials, reseeding of temporarily disturbed areas, using proper construction equipment for the scope and scale of the Project, properly storing topsoil for future reclamation to the extent practicable, properly disposing of excess topsoil and subsoil, de-

compacting soil with a deep blade ripping tool, and maintaining proper drainage. All BMPs will be monitored and corrected promptly as needed.

## **2 Topsoil Management Plan**

### **2.1 Additional Soil Testing**

Prior to the stripping of topsoil, additional soil testing will occur to further refine the area of saline/sodic soils that are not suitable for reclamation. Additional soil samples would be collected in and adjacent to the current approximate mapped area of saline/sodic soils shown in Figure 2. These samples would be analyzed for organic matter content and agronomic parameters. At each point, a composite soil sample would be collected from 0-6 inches in the topsoil and another collected from 6-12 inches. Laboratory results would then be used to further delineate the saline/sodic soil that is unusable for reclamation.

### **2.2 Topsoil Removal and Storage**

Following approval to begin development of the proposed facility, topsoil that is deemed by a qualified environmental consultant to be of sufficient quality for reclamation purposes (soils with adequate organic material to be used as “A horizon” topsoil) will be stripped. A horizon soils are classified as the highest quality soils, indicated by dark brown or black color and approximately 1% or greater organic content on average. Stripping activities will be planned to maximize the amount of A horizon material removed to the extent possible. It is possible that some B/C horizon soil material may be present within the upper 12 inches of soil. Based on previous investigation results, it is expected that the organic content in the A horizon (generally greater than 2%) is sufficient to support reclamation even if up to 70% of the soil contains B/C horizon material in some locations.

Soils identified in the July 2023 topsoil investigation as having elevated salt and/or sodium content will not be stripped and stockpiled with the other stripped topsoil (Figure 2). This soil will be managed separately and will either be left in place, managed off-site, or used as fill material onsite during construction.

Stripped topsoil will be stockpiled at the proposed Project Site (Figure 3) in accordance with best practices, or the topsoil will be transferred to another user for reclamation or storage in the local region. Subsoils will be stored, used on-site, or transferred to another site for reclamation purposes or storage. The A horizon topsoil will be stockpiled separately from C horizon soil removed from the Project Site to minimize the mixing of soils with lower organic material using the 50% criteria above.

### **2.3 Site Decommissioning**

It is highly unlikely that the Project Site will need to be restored to agricultural or open land use in the future because the most likely future land use at the site, as well as the adjacent area, will be industrial land use. It is also likely that a significant portion, if not all, of the topsoil will need to be managed off-site to allow sufficient space for safe construction and operations. The following discussion assumes a possible scenario where at least some of the Project Site is restored to future agricultural or open land use.

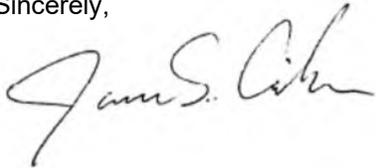
The stockpiled soil will be viable for use in reclaiming the Project Site upon decommissioning. However, it will require some conditioning to return it to productive use either for agriculture or as an ecological base or habitat. To help recondition the soil upon decommissioning of the site, the subgrade will be prepared by ripping or disc mixing to promote infiltration and reduce compaction using low-ground pressure equipment. The topsoil will be excavated and spread in a 6-inch lift, disced to de-compact the soil matrix,

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followed by spreading a 1 to 2-inch layer of amendments (e.g., dried manure or equivalent) and disced in as necessary. The soil will be planted with an initial cover crop of oats to promote soil regeneration in anticipation of eventual return to agricultural crop production. A soil nutrient analysis (pH, total organic content) will be conducted to assess soil health after the first season and identify if additional amendments are necessary to improve soil health. The soil reclamation activities will be overseen by Barr or another qualified third-party environmental engineering firm.

Sincerely,

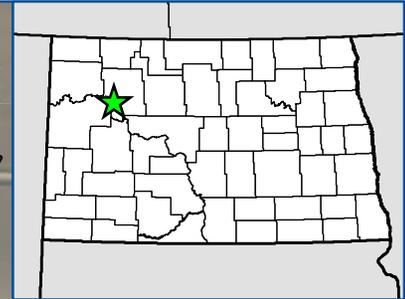
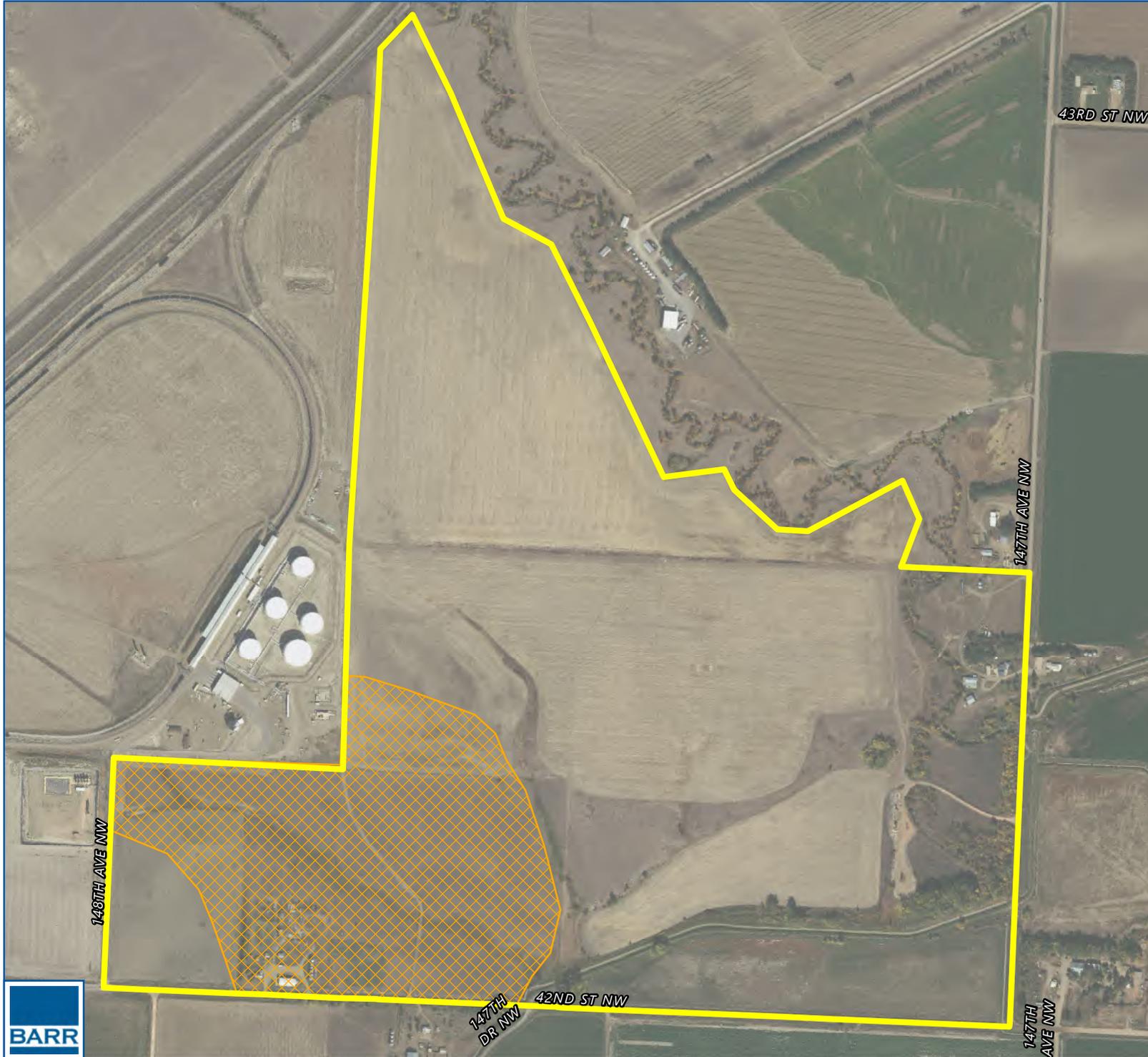


Jim Aiken  
Senior Environmental Consultant  
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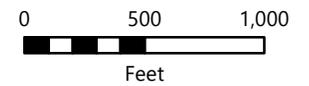
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- Figure 1 – Site Location
- Figure 2 – Approximate Saline/Sodic Soil Extents
- Figure 3 – Topsoil Stockpile Location





-  Project Boundary
-  Approximate Saline/Sodic Soil Extents

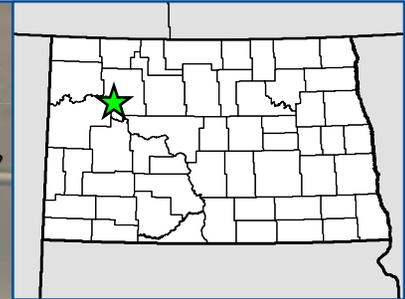
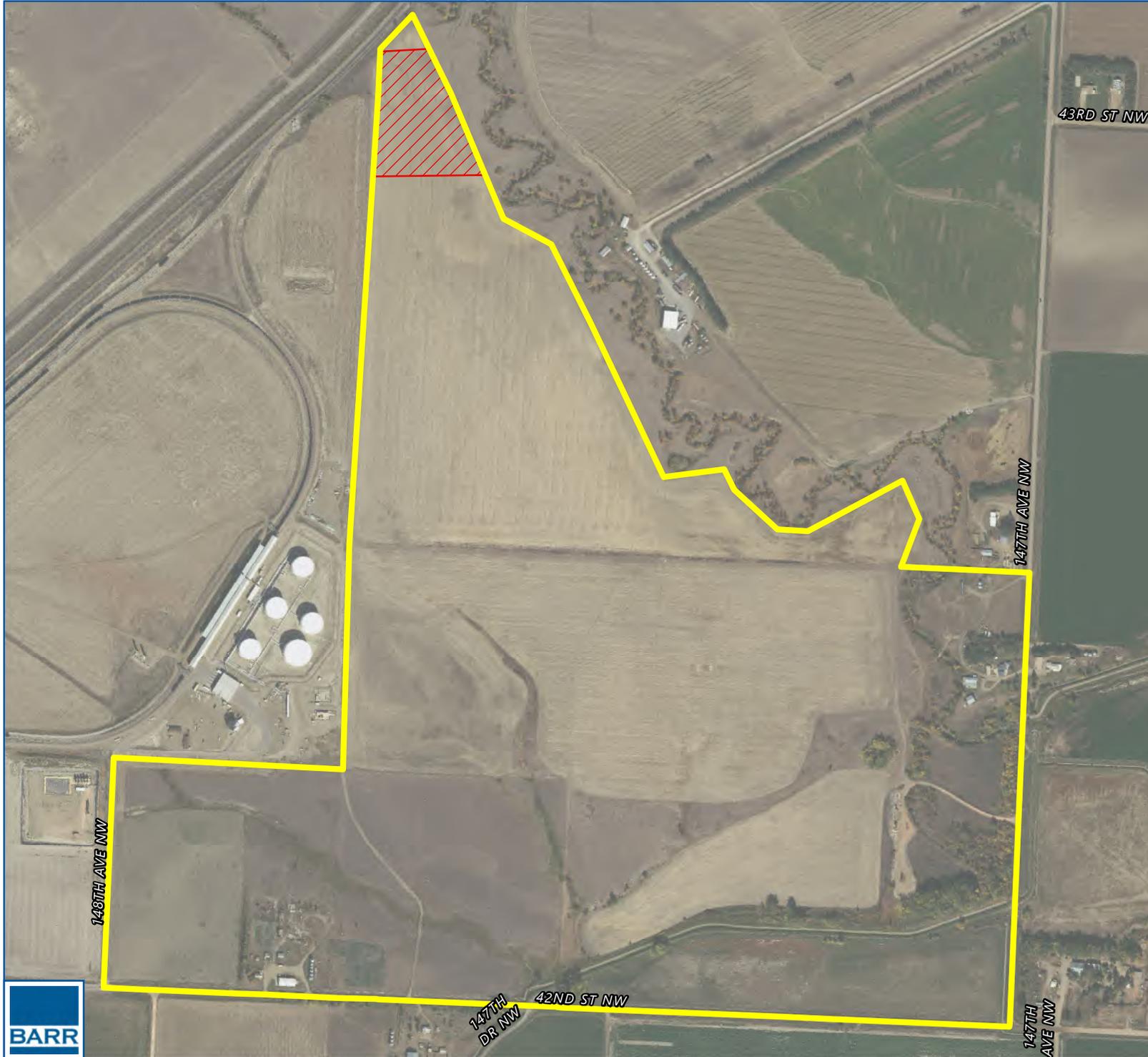


Imagery: USDA NAIP, ND DWR (2021)

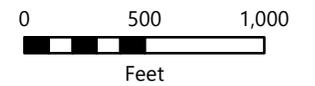
APPROXIMATE SALINE/  
SODIC SOIL EXTENTS  
Cerilon GTL ND Inc.

FIGURE 2





-  Project Boundary
-  Proposed Topsoil Stockpile Location



Imagery: USDA NAIP, ND DWR (2021)

PROPOSED TOPSOIL STOCKPILE LOCATION  
Cerilon GTL ND Inc.

FIGURE 3

