

Bill Sanderson Gas Processing Plant Project

Reclamation Inspection Report

Docket Number: PU-20-082

Prepared for North Dakota Public Service Commission



August 2022

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1 Executive Summary

The North Dakota Public Service Commission (PSC) retained Barr Engineering Co. (Barr) to complete a reclamation inspection for the construction of the Bill Sanderson Gas Processing Plant in Williams County, North Dakota (ND), constructed by OE2 North LLC (OE2). The purpose of the inspection is to ensure the project is constructed in compliance with siting laws and rules and the applicable PSC Orders for the project.

The reclamation inspection was conducted on 12 August 2022. The inspection included observations of the plant facilities, adjacent reclaimed backslopes surrounding the plant location, drainage and stormwater management features, secondary containment, erosion control and prevention installations, reclaimed areas, and re-seeded areas. No major issues were observed, though several potential issues require continued monitoring and maintenance. Recommendations include monitoring recently re-seeded ditches where fiber mats were installed on the south and east boundaries of the plant; management of areas with dense annual weed cover; and chemically treating Canada thistle (noxious weed) populations. Overall, reclamation efforts at the plant are satisfactory and appeared to have been completed according to Natural Resource Conservation Service (NRCS) recommendations. The project is considered to be in compliance with the applicable siting laws, rules, and PSC orders.

2 Background and Scope

2.1 Introduction

The Bill Sanderson Gas Processing Plant project (Project) is a newly constructed natural gas processing facility approximately 39-acres in size, located in Section 27, Township 154 North, Range 104 West (**Appendix A, Exhibit 1**). The plant converts unprocessed wellhead gas produced in the state to marketable natural gas and Y-grade natural gas liquids (NGLs). The plant includes a slug catcher, a liquids stabilization system, a Recycle Split Vapor (RSV) cryogenic gas processing facility, and residue compression to boost the residue gas to interstate pipeline pressures. The Y-grade NGLs and residue gas from the facility is sold into nearby transmission pipelines.

The Project is designed to process up to 250 million cubic feet per day (MMCFD) of raw wellhead gas. The Project is under the jurisdiction of the North Dakota Public Service Commission (NDPSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-20-82 on 13 May 2020, granting Certificate of Site Compatibility No. 62 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 applicable Commission Orders.

2.3 Scope of Work

The NDPSC retained Barr Engineering Co. (Barr) to perform a reclamation inspection of the Project. Barr subcontracted with Meadowlark Environmental, LLC (Meadowlark) to complete the reclamation inspection. Barr's scope of work was to complete and document an on-site reclamation inspection upon completion of a minimum of one growing season after 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 determine whether the area affected by construction activities has been restored as near as practicable to the condition as it existed prior to the beginning of construction, including the reestablishment of desired plant species where applicable. 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

Sara Simmers, Project Manager/Field Inspector for Meadowlark visited the Project site on 12 August 2022 to conduct the reclamation inspection. Representative for OE2 Tom House, Bakken Operations Manager, accompanied Ms. Simmers. The site was visually inspected by walking to access points around the perimeter of the plant to observe current conditions. Photos (iPhone 7) and geographic coordinates were recorded at observation points using a handheld Global Positioning System (GPS) device (Trimble R1; <1m accuracy; WGS84 datum).

The inspection included observations of the plant facilities, adjacent reclaimed backslopes surrounding the plant location, drainage and stormwater management features, secondary containment, erosion control and prevention installations, reclaimed areas, and re-seeded areas. Plant species composition was recorded within reclaimed areas.

3.2 On-Site Inspection Observations

Overall, reclamation efforts at the plant are satisfactory and appeared to have been completed according to NRCS recommendations. Refer to **Appendix A, Exhibit 2**, Photo Locations, and **Appendix B**, Photo Log for detailed descriptions of observations. OE2 uses Jomax Construction Company, Inc. (Jomax) as the reclamation contractor for the plant. Jomax has managed several problem areas on the plant site where erosion and seed establishment has been a problem and they have guaranteed their work. Jomax is charged with implementing OE2's Weed Management Plan.

Soils had been replaced, respread, and re-seeded. A few areas with bare soil are being monitored and maintained to prevent erosion (Photo 6). There have also been erosion issues in several of the ditches surrounding the plant boundary off the south and east sides; reclamation seedings had not established and the ditch slopes were experiencing erosion. After several attempts at different erosion control methods, in July 2022 Jomax re-seeded these areas and then installed a coconut fiber erosion control blanket, with seeds also within the material (Photos 2, 16, 17). Small areas of annual weeds are present in these areas. With the lack of precipitation in July and August, the seeds of the desired species have not yet sprouted. Once the area receives adequate precipitation, the seeds should germinate and the areas can be monitored for adequate establishment.

The majority of the area beyond the scoria-surfaced plant location – including backslopes of the site, portions of adjacent drainages, and a few areas disturbed as part of the cut and fill subgrade of the plant location – had been re-seeded with a grass cultivar seed mix (Photos 8, 9, 12, 13, 14, 15). Reclamation seeding appeared to be in accordance with NRCS guidelines. These areas appear to have overall good plant establishment with adequate cover to stabilize soils. There were a few areas that are dominated by annual weeds, though seeded species are present at low abundance. Dominant annual weed cover is expected within the first few years of reclamation. Over time, annual weeds should decrease while grass cover should increase. These areas were noted and further monitoring and management is recommended to promote the establishment of the seeded grasses.

Several areas were noted of the noxious weed Canada thistle (*Cirsium arvense*) on reclaimed backslopes (Photos 7, 8). Chemical control is recommended as soon as Fall 2022 for these populations, per OE2's Weed Management Plan. Canada thistle populations were observed in the natural drainages adjacent to the plant which were not disturbed as part of construction. It is likely that these areas were the seed source for the populations now present in the disturbed and reclaimed areas. These populations could also be sprayed; otherwise, they will continue to colonize the reclaimed areas.

Several on-site stormwater features and erosion control areas were documented during the inspection. Past erosion issues prompted the installation of rip rap in several large channels that direct stormwater off-site into a retention pond (Photos 6, 11, 12). These features are functioning very well; stormwater is directed toward the channels and is able to move through the rip-rap without creating cuts in the soil of the steep backslopes. In general, stormwater management on- and off-site has been well-blended with adjacent natural drainage systems and drainage patterns have been maintained.

There is a large area on the northeast corner of the plant that was disturbed as part of the cut and fill of subsoils for constructing the plant site (Photo 16; Exhibit 2). This area includes a retention pond that had been constructed to hold hydrostatic test water at the end of pipeline construction until the water could be tested and deemed safe to discharge into a natural drainage running north from the plant in this area. The retention pond was approved to remain after construction and is used as part of the stormwater management of the site. The pond did not have standing water at the time of the inspection but it appeared wetland vegetation was present in the basin. The area surrounding the pond was reclaimed and had well-established, dense grass cover. However, the backslopes along the northeast corner of the plant, sloping down to the pond, had dominant annual weed cover, primarily kochia. Further monitoring and management is recommended to promote the establishment of the seeded grasses. Periodic mowing may be necessary to decrease the seed set of the annual weeds.

Six silver buffaloberry shrubs were planted off-site to mitigate the removal of three silver buffaloberry shrubs on the site as part of construction of the plant. The planted shrubs are established and OE2 has fulfilled its tree and shrub mitigation requirements.

The inspection confirmed that the plant and surrounding reclaimed area were free of debris and waste, and fences and gates had been repaired or replaced. A chain link fence and safety and security signs are in place surrounding the plant (Photos 1, 3, 4).

4 Issues to Resolve and Recommendations

The reclamation inspection of the Bill Sanderson Gas Processing Plant has verified that the project is constructed in compliance with the siting laws, rules, and applicable Commission Orders. No major issues were observed during the reclamation inspection. However, Meadowlark makes the following recommendations to manage, maintain, and prevent future issues at the site:

Potential Issues	Recommendations
Recently re-seeded ditches on south and east boundaries	Monitor the establishment of re-seeded ditches. Once the seeded grasses germinate, mow or treat annual weeds as necessary if they appear to be out-competing the seeded grasses. Regularly inspect fiber mat to ensure integrity of mat and prevention of erosion. Repair tears, holes, or slippage as necessary.
Areas with dense, extensive cover of annual weeds, primarily on north and northeast sides	Monitor and manage these areas to promote the establishment of the seeded grasses. Consult with contractor for options. Periodic mowing may be necessary to decrease the seed set of the annual weeds.
Canada thistle (noxious weed) populations	Chemically control these areas on reclaimed backslopes starting Fall 2022, per OE2's Weed Management Plan. Consider also chemically treating Canada thistle in natural drainages adjacent to the reclaimed slopes.
Additional potential issues	Refer to project Storm Water Pollution Prevention Plan (SWPPP) for additional post-construction recommendations.

5 Signatures

The services performed by Barr staff, and its subcontractor Meadowlark, 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

8/31/2022

Date



Sara Simmers, Inspector

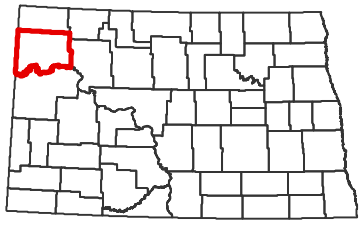
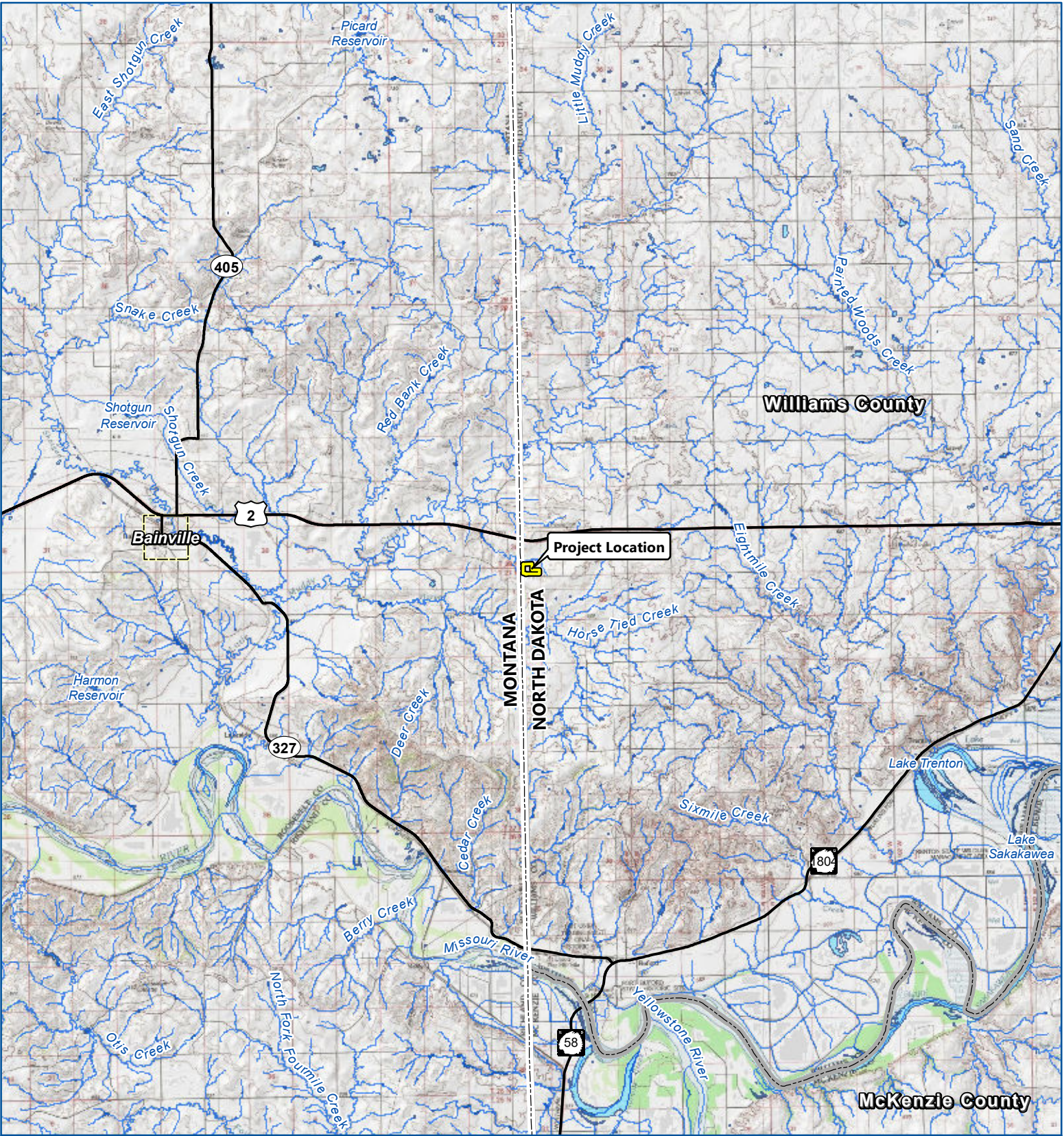
8/31/2022

Date







Appendices

Appendix A

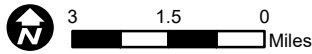
Exhibits



Williams County, North Dakota

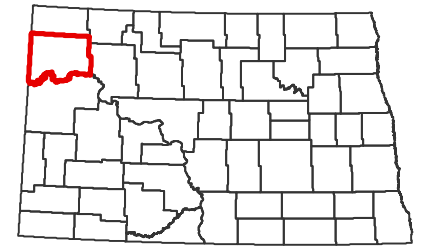
-  Project Boundary
-  Stream (USGS NHD)
-  Waterbody (USGS NHD)
-  Municipality
-  County Boundary
-  State Boundary

Drawn by: KWild (Barr Engineering Co.)
 Date: 8/24/2022
 Photos: SSimmers (Meadowlark)
 Field Date: 8/12/2022
 Imagery: Esri USA Topo Maps








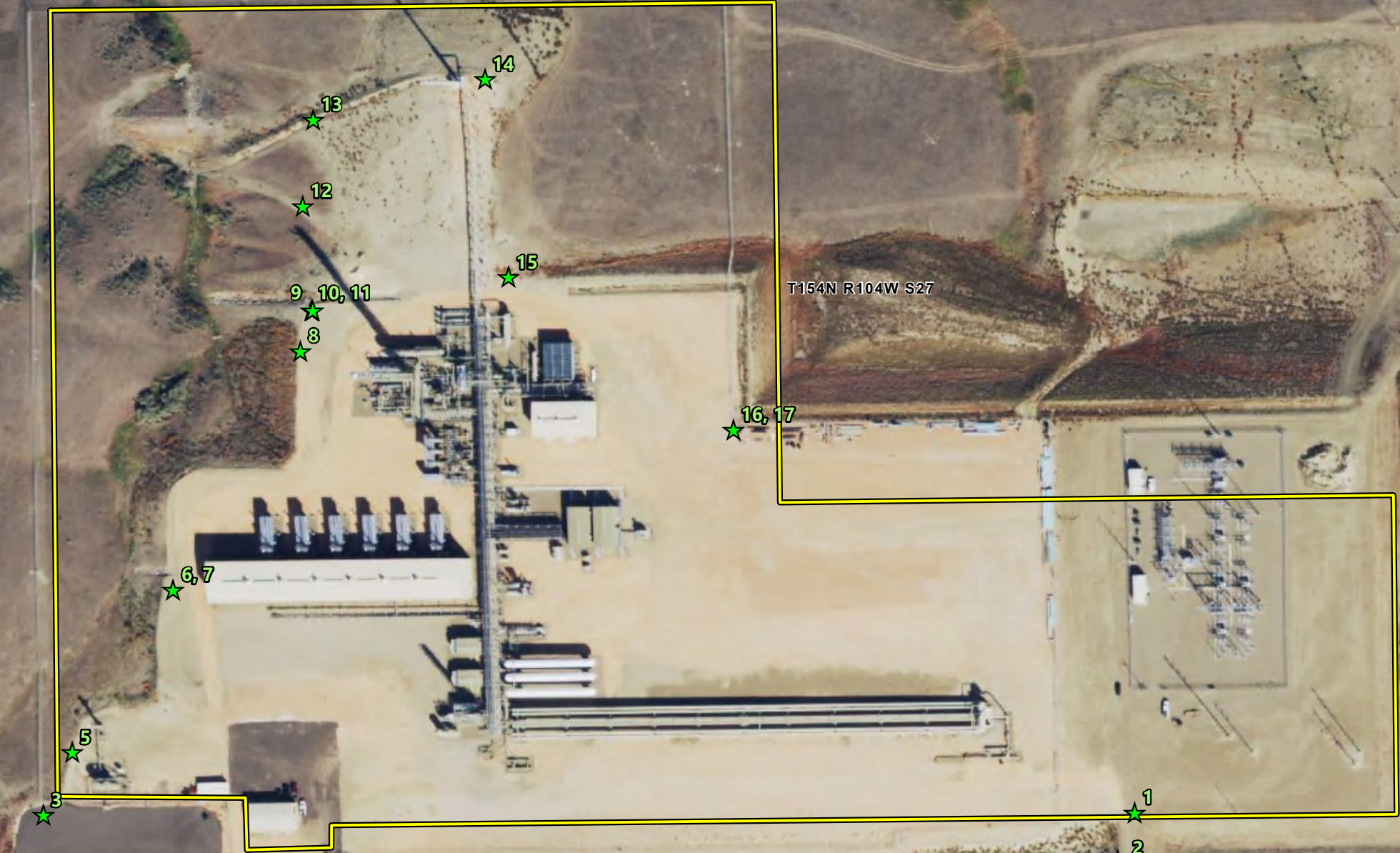
SITE LOCATION MAP
August 2022

MONTANA
NORTH DAKOTA



Williams County, North Dakota

-  Project Boundary
-  Section Boundary
-  State Boundary
-  Stream (USGS NHD)
-  Photograph Location



Drawn by: KWild (Barr Engineering Co.)
 Date: 8/26/2022
 Photos: SSimmers (Meadowlark)
 Field Dates: 8/12/2022
 Background Imagery: USDA-FSA NAIP (2021)

PHOTO LOCATIONS
August 2022

Appendix B

Photo Log

On-Site Photographs

Sanderson Gas Plant

 A wide-angle photograph showing the Sanderson Gas Plant from a southeast perspective. The foreground is a mix of reddish-brown soil and gravel. A chain-link fence runs across the middle ground. In the background, industrial equipment including a large cylindrical tank and various pipes are visible under a clear blue sky.	<p>Photo #: 1</p> <p>Direction: West</p> <p>Description: View of plant from southeast corner. Yellow pipeline markers indicate where the transmission pipelines enter the site.</p> <p>Observer: Simmers</p> <p>Date: 8/12/2022</p> <p>Latitude: 48.126059</p> <p>Longitude: -104.037496</p>
 A photograph showing the south side of the Sanderson Gas Plant. A long, narrow ditch filled with green and brown vegetation runs parallel to a chain-link fence. The plant's industrial structures are visible in the distance under a blue sky with light clouds.	<p>Photo #: 2</p> <p>Direction: West</p> <p>Description: South side of plant. The ditch has had past erosion issues with high annual weed cover and minimal establishment of seeded species. In July 2022, the area was re-seeded, and a coconut fiber erosion control blanket with seeds was installed.</p> <p>Observer: Simmers</p> <p>Date: 8/12/2022</p> <p>Latitude: 48.125867</p> <p>Longitude: -104.037600</p>

On-Site Photographs

Sanderson Gas Plant



Photo #: 3

Direction: North

Description: SW corner of plant showing edge of surfaced area and shallow backslope. No erosion issues. Plant cover was dominated by annual weeds, though it planted grasses were at least 30% cover. Note the fence and signage around the plant facility.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.125808

Longitude: -104.044216



Photo #: 4

Direction:
East/Southeast

Description: Surfaced area to west of plant office in southwest corner of facility. Note truck loading valve outside of fenced area.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.126103

Longitude: -104.044013

On-Site Photographs

Sanderson Gas Plant



Photo #: 5

Direction: Northeast

Description: West edge of pad. Natural slope was not disturbed during construction. Scoria-surfaced area abuts native undisturbed prairie.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.126353

Longitude: -104.043836



Photo #: 6

Direction: Northwest

Description: Stormwater drainage channel off west edge of site which was reinforced with rip-rap to prevent erosion. The channel joins a natural upland drainage bordering the west edge of the site.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.126998

Longitude: -104.043222

On-Site Photographs

Sanderson Gas Plant



Photo #: 7

Direction: Southwest

Description: Natural upland drainage bordering the west edge of the site, flowing northward. Canada thistle noted in this area.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.126998

Longitude: -104.043222



Photo #: 8

Direction: Southwest

Description: View of steep backslope along the west edge of the site. The reclamation was done well, with dominant planted grass cover, though some areas have annual weeds and Canada thistle.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.127947

Longitude: -104.042445

On-Site Photographs

Sanderson Gas Plant



Photo #: 9

Direction: Northeast

Description: Northwest corner of plant site showing reclaimed backslope with adequate grass cover.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.128107

Longitude: -104.042376



Photo #: 10

Direction: East

Description: Stormwater drainage channel feature on the plant site, which drains west to channel in Photo 11.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.128109

Longitude: -104.042366

On-Site Photographs

Sanderson Gas Plant



Photo #: 11

Direction: West

Description: Stormwater drainage channel off west edge of site, reinforced with rip-rap to prevent erosion which was a past issue here. The channel joins the natural upland drainage that runs northward, bordering the west edge of the site.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.128109

Longitude: -104.042366



Photo #: 12

Direction: Northwest

Description: Reclaimed backslope off west edge of plant in foreground. Retention berm in background which is part of stormwater and spill containment system for the site.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.128524

Longitude: -104.042419

On-Site Photographs

Sanderson Gas Plant



Photo #: 13

Direction: East

Description: Containment berm on north edge. Seeded grasses were dominant in this area and to the north, though areas of annual weeds were evident. A sediment fence was observed outside of fence from previous erosion issues.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.128871

Longitude: -104.042350



Photo #: 14

Direction:
East/Northeast

Description: Reclaimed area off northeast corner of site. Grass cover of green needlegrass and slender wheatgrass was about 50% with 50% annual weeds (kochia).

Observer: Simmers

Date: 8/12/2022

Latitude: 48.129025

Longitude: -104.041321

On-Site Photographs

Sanderson Gas Plant



Photo #: 15

Direction: East

Description: Native grass up to edge of site with annual weeds dominant on the slope.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.128230

Longitude: -104.041196



Photo #: 16

Direction: North

Description: Channel and berm along east edge of pad. Previous erosion issues were addressed in July 2022 when Jomax seeded and installed same fiber mat as on the south side (as described in Photo 2). Note low area in distant right of photo.

Observer: Simmers

Date: 8/12/2022

Latitude: 48.127610

Longitude: -104.039865

On-Site Photographs

Sanderson Gas Plant



Photo #: 17

Direction: East

Description: Channel and berm along north/east edge of pad. Previous erosion issues were addressed in July 2022 when Jomax seeded and installed same fiber mat as on the south side (as described in Photo 2).

Observer: Simmers

Date: 8/12/2022

Latitude: 48.109533

Longitude: -104.018379