



**HESS CORPORATION**  
1501 McKinney  
Houston, TX 77010

**Donald G. Bull**  
EHS Advisor  
Environment, Health, Safety – Environmental & Regulatory  
Phone: (713) 496-5759  
FAX: (732) 352-7792

December 10, 2024

Mr. Victor Schock  
North Dakota Public Service Commission  
600 E Boulevard Ave Dept. 408  
Bismarck, ND 58505

**VIA: CERTIFIED MAIL # 7019 1120 0002 3487 6454**  
**RETURN RECEIPT REQUESTED**

**RE: Hess Corporation Depth of Cover River Crossing North Shore**  
**Tree and Shrub Survival Rate Report**

Dear Mr. Schock:

Attached for your review is the Depth of Cover River Crossing North Shore Tree and Shrub Survival Rate Report. This report describes the 2024 tree and shrub survival rate. This completes the replanting 2:1 mitigation ratio requirement established by the Public Service Commission. Hess will submit one more survival rate inventory report in Fall of 2025.

If you should have any questions or comments concerning this report, please feel free to contact the undersigned at (713) 496-5759.

Sincerely,

Donald G. Bull

cc: Ms. Vicky Sund, Hess Corporation  
Mr. Shane Larson, Hess Corporation  
Mr. Brian Epperson, Hess Corporation  
Mr. Ben Lauf, Hess Corporation

# **2024 HESS DEPTH OF COVER RIVER CROSSING NORTH SHORE TREE AND SHRUB SURVIVAL RATE REPORT**

Field Verification: Week of July 29, 2024

Report Issuance: October 24, 2024

Issued By: D. Bull (Advisor EHS-Environmental & Regulatory)

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## **2024 HESS DEPTH OF COVER RIVER CROSSING NORTH SHORE TREE & SHRUB SURVIVAL RATE REPORT**

### **1.0 INTRODUCTION**

Hess North Dakota Pipelines, LLC, utilizes six (6) existing pipelines that cross Lake Sakakawea in New Town, McKenzie and Williams Counties, North Dakota (GPS coordinates: N48.117922°, W102.885652°). The western trench (Pipeline Nos. 1, 2, and 3) has three (3) 8-inch diameter pipelines, and the eastern trench (Pipeline Nos. 4, 5, and 6) has two (2) 8-inch diameter pipelines and one (1) 10-inch diameter pipeline (see Figure 1 Vicinity Map).

Hess North Dakota Pipelines, LLC, has one (1) abandoned 16-inch diameter pipeline that crosses Lake Sakakawea in New Town, McKenzie and Williams Counties, North Dakota (GPS coordinates: N48.117922°, W102.885652°). The pipeline was installed in 1961 and operated until 1971. The pipeline was degassed, internally cleaned, and abandoned in 1976.

The lakebed and shorelines had experienced erosion and scour that left some pipelines exposed and shallow-covered in these areas. A scour analysis study was performed on the above pipeline crossing locations. Sections of these pipelines required remediation/maintenance to satisfy a maintenance plan that outlines steps to ensure an appropriate depth-of-cover.

This project consisted of a study area located in Section 22, Township 154 North, Range 95 West in Williams County, North Dakota. As a condition of Hess's United States Army Corps of Engineers (USACE) permit for the project, Hess committed to conducting pre and post construction vegetation inventories on USACE property (Refer to Appendix A for Location Map and Appendix B for Vegetation Disturbance Map).

Per the North Dakota Public Service Commission (PSC) Tree and Shrub Mitigation Specifications requirements identified in the PSC's Findings of Facts, Conclusions of Law and Order for the Project, trees and shrubs shall be inventoried for replacement, replaced at a 2:1 ratio, and monitored for 3 years to determine if a 75 percent survival rate has occurred. Hess will submit annual reports to the PSC following each year's monitoring efforts. Hess understands the PSC may require additional plantings if the survival rate, after 3 years, is less than 75 percent.

### **2.0 REPLACEMENT PROCESS**

The trees and shrubs planted on this project were procured from Lincoln-Oakes Nursery in Bismarck, ND. After the trees and shrubs were procured, they were transported and stored in a refrigerated trailer. The trees and shrubs were hand planted using a tree planting bar on June 14<sup>th</sup> & 15<sup>th</sup>, 2022. A pocket was created in the ground using the planting bar and the roots were trimmed to the depth of the pocket to avoid creating "J-root." Once the roots were trimmed, the tree or shrub was placed in the pocket and the pocket was closed by inserting the tree planting bar into the ground in front of the original pocket and pushing forward on the bar. After the trees were planted, they were watered using a truck with a 500-gallon water tank (Refer to Appendix C for Planting Rows Location Map).

**PLANTING SUMMARY**

<b>Table 1: Hess River Crossing North Tree/Shrub Planting</b>				
<b>Row</b>	<b>Row Lat/Long Start</b>	<b>Row Lat/Long End</b>	<b>Species</b>	<b>Quantity</b>
1	-102.8928352°, 48.1514046°	-102.8928307°, 48.1516305°	Eastern Cottonwood	8
2	-102.8927742°, 48.1514070°	-102.8927728°, 48.1516113°	Eastern Cottonwood	4
3	-102.8927161°, 48.1513934°	-102.8925673°, 48.1513945°	Sharp-leaf willow	5
4	-102.8927118°, 48.1514134°	-102.8925746°, 48.1514139°	Eastern Cottonwood	4
5	-102.8927162°, 48.1514433°	-102.8925756°, 48.1514419°	Eastern Cottonwood	6
6	-102.8927181°, 48.1514724°	-102.8925764°, 48.1514724°	Eastern Cottonwood	4
7	-102.8927304°, 48.1515012°	-102.8925750°, 48.1515011°	Green Ash	2
7	-102.8927304°, 48.1515012°	-102.8925750°, 48.1515011°	Common Chokecherry	1
8	-102.8918108°, 48.1511575°	-102.8918104°, 48.1513764°	Silver Buffaloberry	29
9	-102.8917937°, 48.1511588°	-102.8917927°, 48.1513792°	Silver Buffaloberry	29
10	-102.8917767°, 48.1511613°	-102.8917745°, 48.1513902°	Silver Buffaloberry	27
11	-102.8917549°, 48.1512113°	-102.8917551°, 48.1514208°	Silver Buffaloberry	27
12	-102.8917373°, 48.1512406°	-102.8917365°, 48.1514965°	Silver Buffaloberry	26
13	-102.8917162°, 48.1512972°	-102.8917219°, 48.1515018°	Silver Buffaloberry	9
14	-102.8916957°, 48.1512420°	-102.8917016°, 48.1515059°	Sharp-leaf Willow	12
15	-102.8916759°, 48.1511737°	-102.8916784°, 48.1515068°	Sharp-leaf Willow	16
16	-102.8916571°, 48.1511770°	-102.8916552°, 48.1513262°	Sharp-leaf Willow	18
17	-102.8916363°, 48.1511807°	-102.8916319°, 48.1513023°	Sharp-leaf Willow	10
18	-102.8916138°, 48.1511835°	-102.8916141°, 48.1512629°	Sharp-leaf Willow	15
<b>Total Tree/Shrub Count</b>				<b>252</b>

<b>Total Species</b>	<b>Quantity</b>
Eastern Cottonwood	26
Sharp-leaf Willow	76
Green Ash	2
Common Chokecherry	1
Silver Buffaloberry	147
<b>Total Tree/Shrub Count</b>	<b>252</b>

**3.0 SURVIVAL RATE ASSESSMENT**

During the week of July 29, 2024, an inventory of trees and shrubs was conducted to determine the health of the June 2022 replacement process and to ensure a greater than 75% survival rate. It was determined that there was an 79% survival rate. Some of Sharp-leaf Willow have succumbed to drought conditions and a lot of the Silver Buffaloberry has returned. Table 2 lists the tree/shrub planting survival rate. Appendix D presents the pictures during the 2024 survival rate assessment.

**Table 2: River Crossing North Tree/Shrub Planting Survival Rate**

Row	Row Lat/Long Start	Row Lat/Long End	Species	Quantity	Quantity Survived
1	-102.8928352°, 48.1514046°	-102.8928307°, 48.1516305°	Eastern Cottonwood	8	8
2	-102.8927742°, 48.1514070°	-102.8927728°, 48.1516113°	Eastern Cottonwood	4	4
3	-102.8927161°, 48.1513934°	-102.8925673°, 48.1513945°	Sharpleaf willow	5	5
4	-102.8927118°, 48.1514134°	-102.8925746°, 48.1514139°	Eastern Cottonwood	4	4
5	-102.8927162°, 48.1514433°	-102.8925756°, 48.1514419°	Eastern Cottonwood	6	6
6	-102.8927181°, 48.1514724°	-102.8925764°, 48.1514724°	Eastern Cottonwood	4	4
7	-102.8927304°, 48.1515012°	-102.8925750°, 48.1515011°	Green Ash	2	2
7	-102.8927304°, 48.1515012°	-102.8925750°, 48.1515011°	Common Chokecherry	1	1
8	-102.8918108°, 48.1511575°	-102.8918104°, 48.1513764°	Silver Buffaloberry	29	29
9	-102.8917937°, 48.1511588°	-102.8917927°, 48.1513792°	Silver Buffaloberry	29	29
10	-102.8917767°, 48.1511613°	-102.8917745°, 48.1513902°	Silver Buffaloberry	27	27
11	-102.8917549°, 48.1512113°	-102.8917551°, 48.1514208°	Silver Buffaloberry	27	27
12	-102.8917373°, 48.1512406°	-102.8917365°, 48.1514965°	Silver Buffaloberry	26	26
13	-102.8917162°, 48.1512972°	-102.8917219°, 48.1515018°	Silver Buffaloberry	9	9
14	-102.8916957°, 48.1512420°	-102.8917016°, 48.1515059°	Sharpleaf Willow	12	1
15	-102.8916759°, 48.1511737°	-102.8916784°, 48.1515068°	Sharpleaf Willow	16	3
16	-102.8916571°, 48.1511770°	-102.8916552°, 48.1513262°	Sharpleaf Willow	18	2
17	-102.8916363°, 48.1511807°	-102.8916319°, 48.1513023°	Sharpleaf Willow	10	4
18	-102.8916138°, 48.1511835°	-102.8916141°, 48.1512629°	Sharpleaf Willow	15	9
<b>Total Tree/Shrub Count</b>				<b>252</b>	<b>200</b>
				Mortality Rate	20.63
				Survival Rate	79.37

#### **4.0 SURVIVAL RATE REPORT MONITORING**

Hess completed year 2 of a 3-year survival rate inventory process for the trees and shrubs installed in 2022. It was determined that there was a 79% survival rate.

##### **Schedule of Survival Rate Inventory Process and Annual Report Submittal**

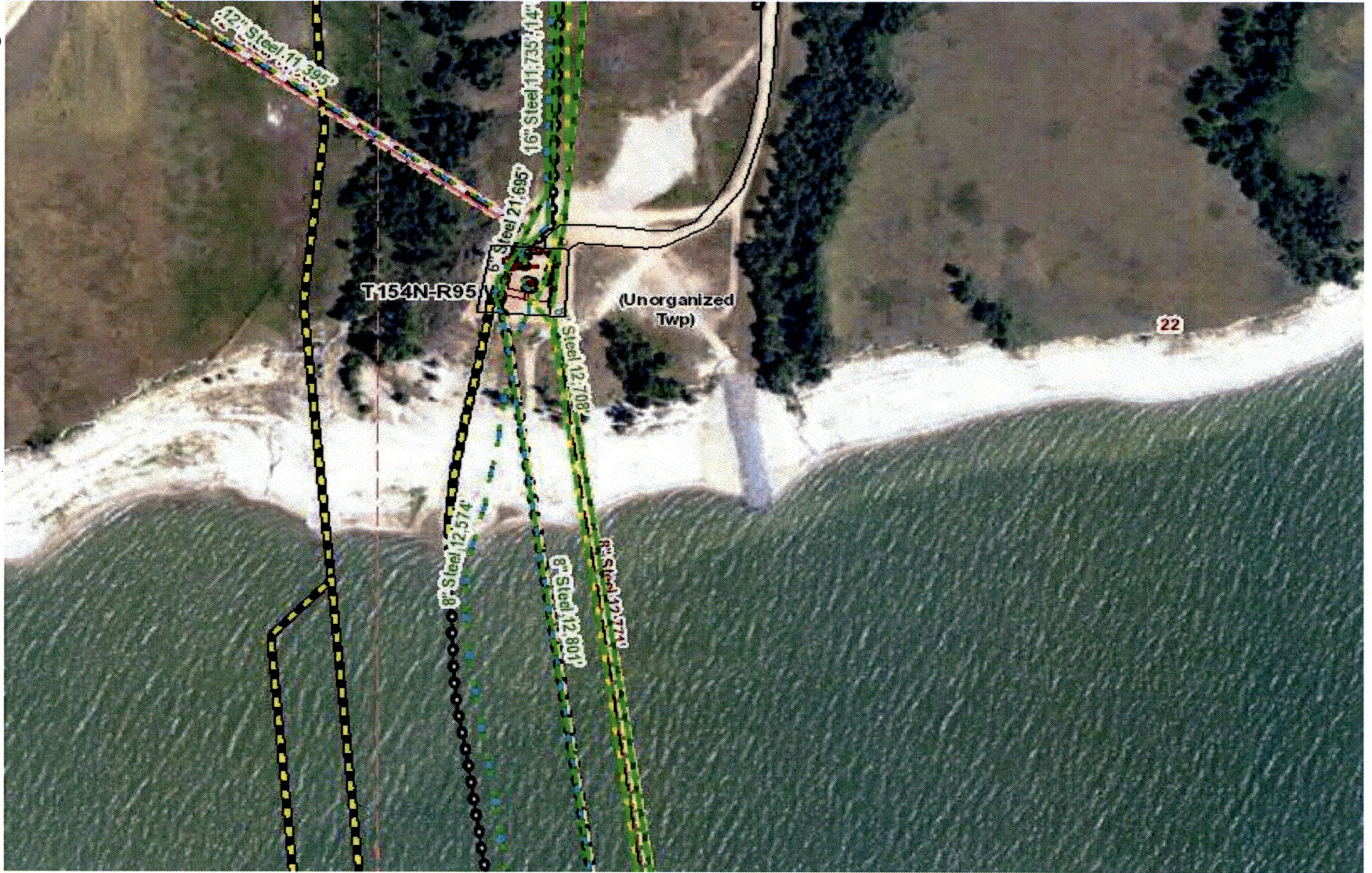
Year 1 of 3 Summer 2023, with Annual Report submitted Fall 2023.

Year 2 of 3 Summer 2024, with Annual Report submittal during Fall 2024.

Year 3 of 3 Summer 2025, with final Annual Report submittal during Fall 2025.

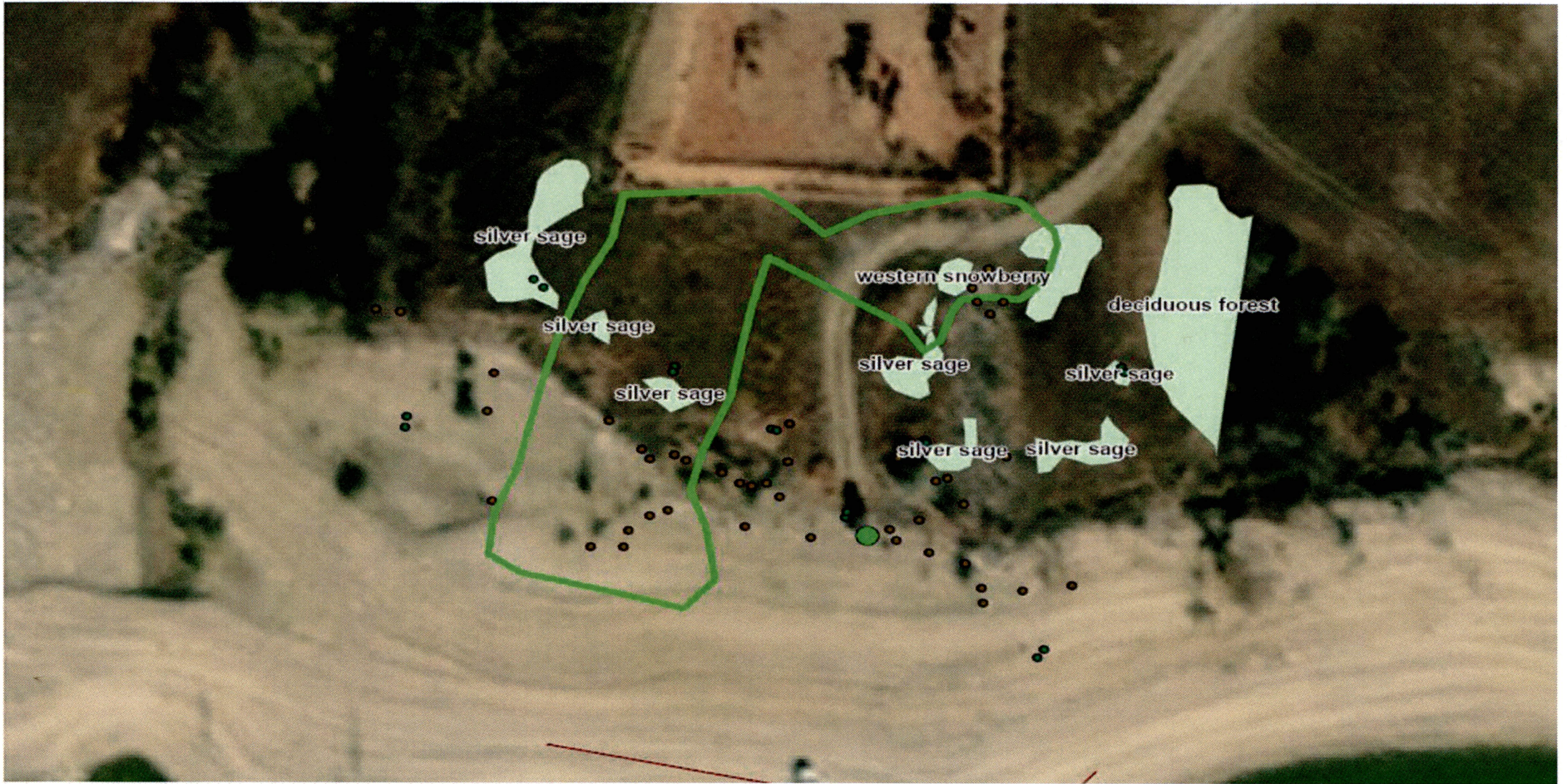
APPENDIX A: LOCATION MAP

Location Map



APPENDIX B: VEGETATION DISTURBANCE MAP

Vegetation Disturbance Map



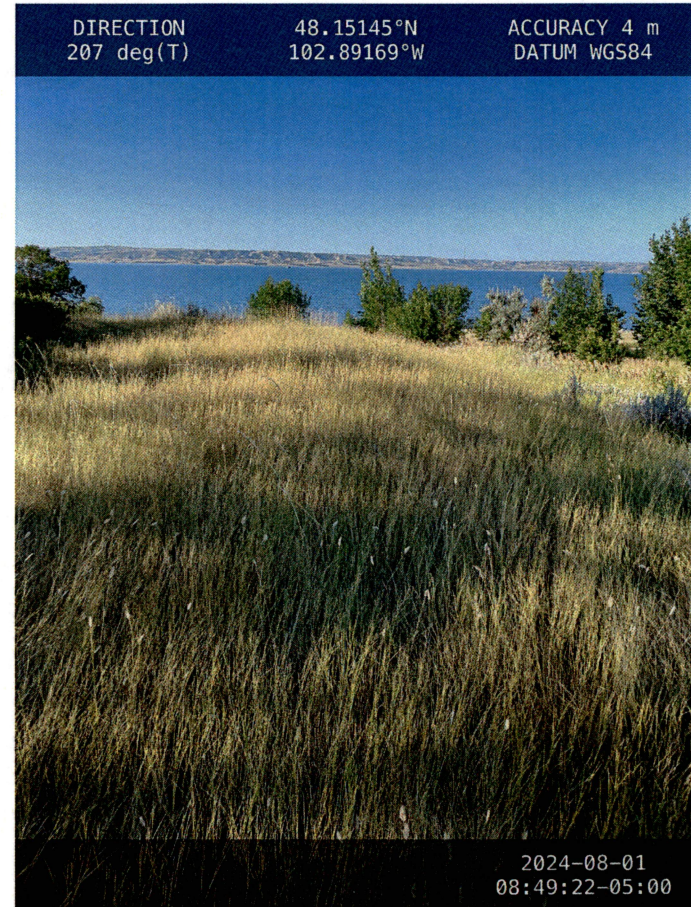
APPENDIX C: SPECIES AND PLANTING ROW'S LOCATION MAP

Species Planting Rows Location Map



APPENDIX D PICTURES 2024 SURVIVAL RATE ASSESSMENT

2024 Survival Rate Assessment Pictures

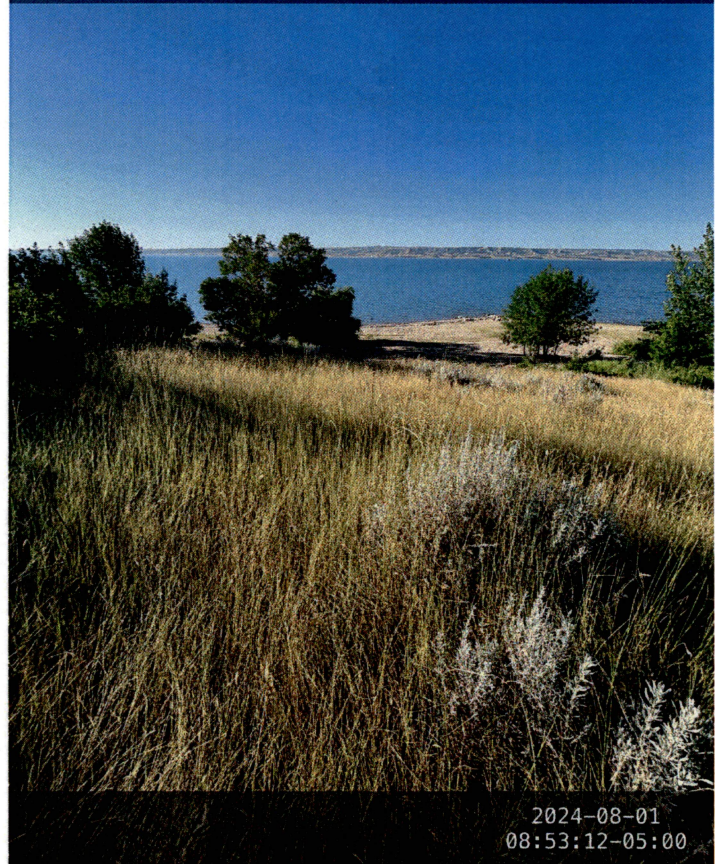


DIRECTION 48.15129°N ACCURACY 4 m  
212 deg(T) 102.89172°W DATUM WGS84



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08:53:09-05:00

DIRECTION 48.15130°N ACCURACY 4 m  
172 deg(T) 102.89171°W DATUM WGS84



2024-08-01  
08:53:12-05:00



DIRECTION  
283 deg(T)

48.15157°N  
102.89245°W

ACCURACY 5 m  
DATUM WGS84



2024-08-01  
09:26:57-05:00

DIRECTION  
315 deg(T)

48.15158°N  
102.89245°W

ACCURACY 5 m  
DATUM WGS84



2024-08-01  
09:27:01-05:00





2024-08-01  
09:04:40-05:00