Photograph pp09 view East

Photograph pp09 view South

Photograph pp09 view West

Appendix B

Wetland Determination Data Forms –

Midwest Region

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Forks-Rost 161 kV Transmission City/County: Jackson County Sampling Date: 2024-04-24

Applicant/Owner: ITC Holdings State: MN Sampling Point: dp01

Investigator(s): Kallie Koon Section, Township, Range: S26 T102N S037W

Lanform(hillslope, terrace, etc): Depression Local relief (concave, convex, none): concave

Slope(%): 0-2 Lat: 43.60252 Long: -95.24266 Datum: WGS 84

Soil Map Unit Name: 229: Waldorf silty clay loam, 0 to 2 percent slopes NWI classification: - - -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ___ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ Significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No ✔	**Is the Sampled Area within a Wetland?** Yes ___ No ✔
Hydric Soil Present?	Yes ___ No ✔	
Wetland Hydrology Present?	Yes ___ No ✔	

Remarks: (Explain alternative procedures here or in a separate report.)
Analysis of antecedent precipitation conditions indicates normal precipitation conditions on site at the time of survey. Data point dp01 was recorded in a harvested soybean field 25 ft north of a drainage tile inlet.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:30-ft (9.1-m) radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	
Sapling/Shrub Stratum (Plot size:15-ft (4.6-m) radius)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	
Herb Stratum (Plot size:5-ft (1.5-m) radius OR 3.28- by 3.28-ft square (1-m²) quadrat)			
1. *Cirsium arvense*, Canadian Thistle	5%	yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5%	= Total Cover	
Woody Vine Stratum (Plot size:30-ft (9.1-m) radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x1 =	0
FACW species	0	x1 =	0
FAC species	0	x1 =	0
FACU species	5	x1 =	20
UPL species	0	x1 =	0
Column Totals:	5	x1 =	20 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Index is <= 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ PROBLEMATIC Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)
Data point dp01 was recorded in a harvested soybean field.

Sample Point: **dp01**

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-30	10YR - 2/1	100	- - --- - -/- - -	- - -	- - -	- - -	SiCL	- - -
30-36	10YR - 2/1	98	7.5YR-4/6	2	C	M	SiCL	- - -
36-45	10YR - 2/1	95	7.5YR-4/6	5	C	M	SiCL	- - -

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (or Histel) (A1) **undefined**
- ___ Histic Epipedon (A2) **undefined**
- ___ Black Histi (A3) **undefined**
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: - - -

Depth (inches): - - -

Hydric Soil Present? Yes ____ No ✔

Remarks:
The soil profile does not meet the criteria for any hydric soil indicators. Hydric soil indicator Thick Dark Surface (A12) is assumed to not be present based on the lack of wetland hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface water (A1)
- ___ High water table (A2)
- ___ Saturation (A3)
- ___ Water marks (B1)
- ___ Sediment deposits (B2)
- ___ Drift deposits (B3)
- ___ Algal mat or crust (B4)
- ___ Iron deposits (B5)
- ___ Inundation visible on aerial imagery (B7)
- ___ Sparsely vegetated concave surface (B8)
- ___ Water-stained leaves (B9)
- ___ Aquatic fauna (B13)
- ___ True aquatic plants (B14)
- ___ Hydrogen sulfide odor (C1)
- ___ Oxidized rhizospheres along living roots (C3)
- ___ Presence of reduced iron (C4)
- ___ Recent iron reduction in tilled soils (C6)
- ___ Thin muck surface (C7)
- ___ Gauge or well data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface soil cracks (B6)
- ___ Drainage patterns (B10)
- ___ Dry-season water table (C2)
- ___ Crayfish burrows (C8)
- ✔ Saturation visible on aerial imagery (C9)
- ___ Stunted or stressed plants (D1)
- ___ Geomorphic position (D2)
- ___ FAC-neutral test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): - - -

Water Table Present? Yes ____ No ✔ Depth (inches): - - -

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): - - -

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation is visible on some years of aerial imagery, but no other wetland hydrology indicators were observed.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Forks-Rost 161 kV Transmission | City/County: Jackson County | Sampling Date: 2024-04-24

Applicant/Owner: ITC Holdings | State: MN | Sampling Point: dp02

Investigator(s): Kallie Koon | Section, Township, Range: S26 T102N S037W

Lanform(hillslope, terrace, etc): Depression | Local relief (concave, convex, none): concave

Slope(%): 0-2 | Lat: 43.60404 | Long: -95.24498 | Datum: WGS 84

Soil Map Unit Name: 229: Waldorf silty clay loam, 0 to 2 percent slopes | NWI classification: - - -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ___ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ Significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✔	**Is the Sampled Area within a Wetland?** Yes ___ No ✔
Hydric Soil Present?	Yes ✔	No ___	
Wetland Hydrology Present?	Yes ___	No ✔	

Remarks: (Explain alternative procedures here or in a separate report.)
Analysis of antecedent precipitation conditions indicates normal precipitation conditions on site at the time of survey. Data point dp02 was recorded in a harvested corn field 25 feet southeast of a functioning drain tile inlet.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:30-ft (9.1-m) radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Sapling/Shrub Stratum (Plot size:15-ft (4.6-m) radius)			
1.			
2.			
3.			
4.			
5.			
	0%	= Total Cover	

Herb Stratum (Plot size:5-ft (1.5-m) radius OR 3.28- by 3.28-ft square (1-m²) quadrat)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0%	= Total Cover	

Woody Vine Stratum (Plot size:30-ft (9.1-m) radius)			
1.			
2.			
	0%	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x1 =	0
FACW species	0	x1 =	0
FAC species	0	x1 =	0
FACU species	0	x1 =	0
UPL species	0	x1 =	0
Column Totals:	0	x1 =	0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Index is <= 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ PROBLEMATIC Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)
Data point dp02 was recorded in a harvested soybean field.

Sample Point: **dp02**

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR - 2/1	100	- - --- - -/- - -	- - -	- - -	- - -	CL	- - -
24-40	10YR - 2/1	95	7.5YR-4/6	5	C	M	SiCL	- - -
40-45	10YR - 2/1	35	10YR-4/1	60	D	M	SiCL	- - -
	- - - - - - -/- - -	- - -	7.5YR-5/6	5	C	M	- - -	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (or Histel) (A1) **undefined**
- ___ Histic Epipedon (A2) **undefined**
- ___ Black Histi (A3) **undefined**
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: - - -

Depth (inches): - - -

Hydric Soil Present? Yes ✔ No ___

Remarks:
The soil profile meets the hydric soil criterion for Thick Dark Surface (A12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface water (A1)
- ___ High water table (A2)
- ___ Saturation (A3)
- ___ Water marks (B1)
- ___ Sediment deposits (B2)
- ___ Drift deposits (B3)
- ___ Algal mat or crust (B4)
- ___ Iron deposits (B5)
- ___ Inundation visible on aerial imagery (B7)
- ___ Sparsely vegetated concave surface (B8)
- ___ Water-stained leaves (B9)
- ___ Aquatic fauna (B13)
- ___ True aquatic plants (B14)
- ___ Hydrogen sulfide odor (C1)
- ___ Oxidized rhizospheres along living roots (C3)
- ___ Presence of reduced iron (C4)
- ___ Recent iron reduction in tilled soils (C6)
- ___ Thin muck surface (C7)
- ___ Gauge or well data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface soil cracks (B6)
- ___ Drainage patterns (B10)
- ___ Dry-season water table (C2)
- ___ Crayfish burrows (C8)
- ✔ Saturation visible on aerial imagery (C9)
- ___ Stunted or stressed plants (D1)
- ___ Geomorphic position (D2)
- ___ FAC-neutral test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): - - -

Water Table Present? Yes ___ No ✔ Depth (inches): - - -

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): - - -

Wetland Hydrology Present? Yes ___ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation is visible on some years of aerial imagery, but no other wetland hydrology indicators were observed.

Appendix C

Off-site Aerial Review

Exhibit 1 Field data sheet reference (if applicable):

Wetland Hydrology from Aerial Imagery – Recording Form

Project Name: ITC Forks to Rost 161kV Project

Date: 5/21/2024 County: Jackson County, MN

Investigator: Jameson Loesch Legal Description (T, R, S): T102N, R37W, Sec. 26

Summary Table

Date Image Taken (M-D-Y)	Image Source	Climate Condition (wet, dry, normal)[i]	Image Interpretation(s)	
			ws01	ws02
8-5-2021	NAIP	Dry	NV	NV
8-23-2019	NAIP	Normal	SS	SS
8-3-2015	NAIP	Normal	NV	NV
7-10-2013	NAIP	Wet	SS	SS
6-24-2010	NAIP	Normal	NV	NV
8-21-2005	NAIP	Normal	NV	NV
Normal Climate Condition				
Number			4	4
Number with wet signatures			1	0
Percent with wet signatures			25	0

KEY		
WS - wetland signature	**SS** - soil wetness signature	**CS** - crop stress
NC - not cropped	**AP** - altered pattern	**NV** - normal vegetative cover
DO - drowned out	**SW** - standing water	**NSS** – no soil wetness signature
Other labels or comments:	**TC** - Thriving crop during dry conditions	

- Use above key to label image interpretations. It is imperative that the reviewer read and understand the guidance associated with the use of these labels. If alternate labels are used, indicate in box above.
- If less than five (5) images taken during normal climate conditions are available, use an equal number of images taken during wet and dry climate conditions and use as many images as you have available. Describe the results using this methodology in your report.

Exhibit 2 Field data sheet reference (if applicable):

Wetland Determination from Aerial Imagery – Recording Form

Project Name: ITC Forks to Rost 161kV Project

Date: 5/21/2024 County: Jackson County, MN

Investigator: Jameson Loesch Legal Description (T, R, S): T102N, R37W, Sec. 26

Use the Decision Matrix below to complete Table 1.

Hydric Soils present[1]	Identified on NWI or other wetland map[2]	Percent with wet signatures from Exhibit 1	Field verification required[3]	Wetland?
Yes	Yes	>50%	No	Yes
Yes	Yes	30-50%	No	Yes
Yes	Yes	<30%	Yes	Yes, if other hydrology indicators present
Yes	No	>50%	No	Yes
Yes	No	30-50%	Yes	Yes, if other hydrology indicators present
Yes	No	<30%	No	No
No	Yes	>50%	No	Yes
No	Yes	30-50%	No	Yes
No	Yes	<30%	No	No
No	No	>50%	Yes	Yes, if other hydrology indicators present
No	No	30-50%	Yes	Yes, if other hydrology indicators present
No	No	<30%	No	No

[1] The presence of hydric soils can be determined from the "Hydric Rating by Map Unit Feature" under "Land Classifications" from the Web Soil Survey. "Not Hydric" is the only category considered to not have hydric soils. Field sampling for the presence/absence of hydric soil indicators can be used in lieu of the hydric rating if appropriately documented by providing completed field data sheets.

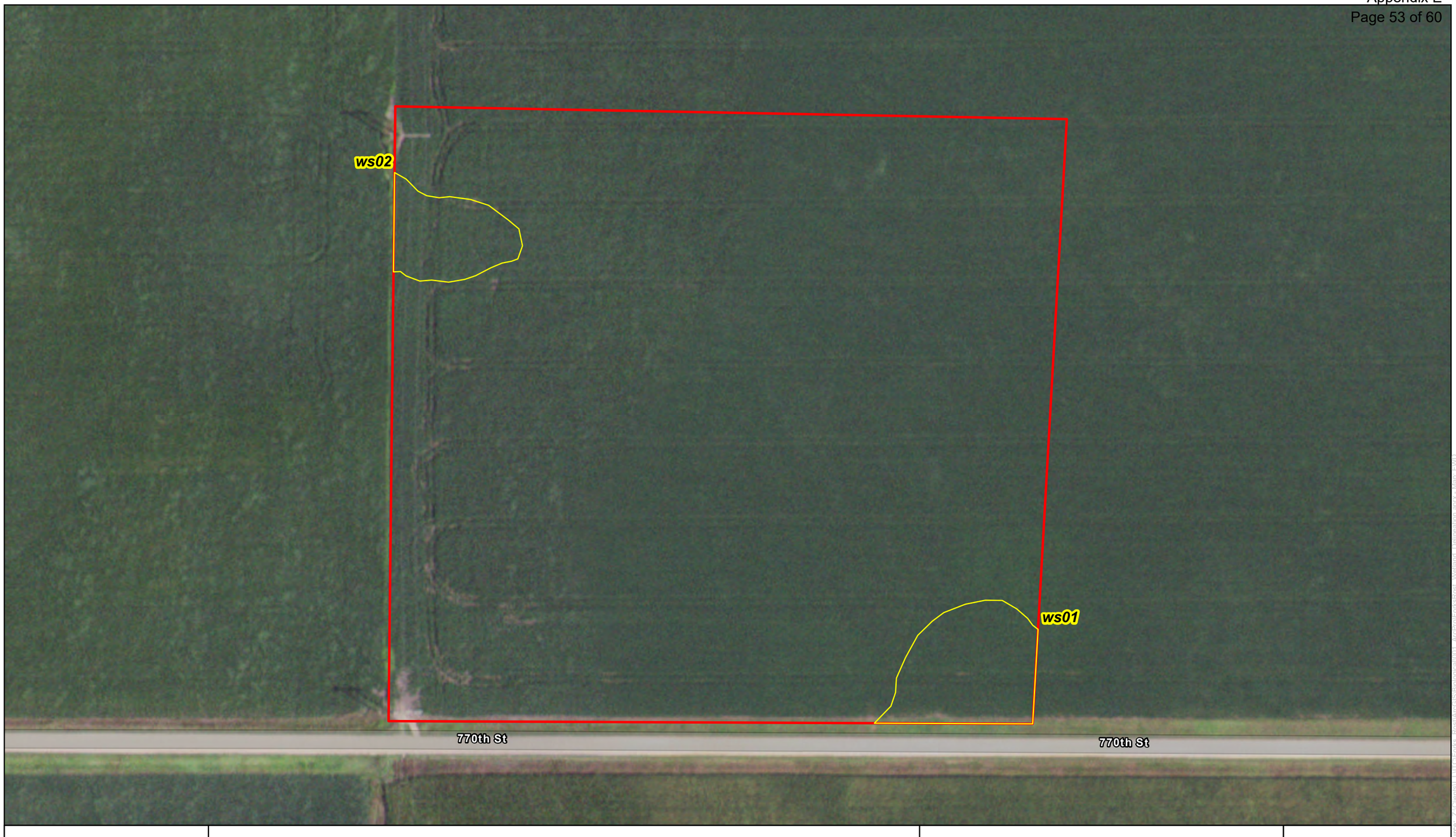
[2] At minimum, the most updated NWI data available for the area must be reviewed for this step. Any and all other local or regional wetland maps that are publically available should be reviewed.

[3] Area should be reviewed in the field for the presence/absence of wetland hydrology indicators per the applicable 87 Manual Regional Supplement, including the D2 indicator (geomorphic position).

Table 1.

Area	Hydric Soils Present	Identified on NWI or other wetland map	Percent with wet signatures from Exhibit 1	Other hydrology indicators present[1]	Wetland
ws01	Yes	No	25%	No	No
ws02	Yes	No	0%	No	No

[1] Answer "N/A" if field verification is not required and was not conducted.



0 50 100
Feet
1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Farmed Wetland Determination
2021 NAIP Imagery - Dry
ITC Forks to Rost 161kV Project
ITC Midwest LLC
Jackson County, Minnesota

Survey Area

Farmed Wetland Determination Signature

merjent

Source: Z:\Clients\ITC\Forks_Rost\ArcGIS\Biological\001_ArcPro\ForksRost_Wetland_Delineation.aprx - Map: FWD
Date: (5/21/2024)

0 50 100
Feet
1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Farmed Wetland Determination
2019 NAIP Imagery - Normal
ITC Forks to Rost 161kV Project
ITC Midwest LLC
Jackson County, Minnesota

Survey Area

Farmed Wetland Determination Signature

merjent

Source: Z:\Clients\ITC\ITCForks_Rost\ArcGIS\Biological\001_ArcProForksRost_Wetland_Delineation.aprx - Map: FWD

Date: (5/21/2024)

0 50 100
Feet
1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Farmed Wetland Determination
2015 NAIP Imagery - Normal
ITC Forks to Rost 161kV Project
ITC Midwest LLC
Jackson County, Minnesota

Survey Area

Farmed Wetland Determination Signature

merjent

Source: Z:\Clients\1_LIT\Cl\Forks_Rost\ArcGIS\Biological\001_ArcPro\ForksRost_Wetland_Delineation.aprx - Map: FWD
Date: (5/21/2024)

0 50 100
Feet
1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Farmed Wetland Determination
2013 NAIP Imagery - Wet
ITC Forks to Rost 161kV Project
ITC Midwest LLC
Jackson County, Minnesota

Survey Area

Farmed Wetland Determination Signature

merjent

Source: Z:\Clients_LIT\ITCForks_Rost\ArcGIS\Biological\001_ArcPro\ForksRost_Wetland_Delineation.aprx - Map: FWD
Date: (5/21/2024)

0 50 100
Feet

1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Farmed Wetland Determination
2010 NAIP Imagery - Normal
ITC Forks to Rost 161kV Project
ITC Midwest LLC
Jackson County, Minnesota

Survey Area

Farmed Wetland Determination Signature

merjent

Source: Z:\Clients\1_LT\ITCForks_Rost\ArcGIS\Biological\001_ArcPro\ForksRost_Wetland_Delineation.aprx - Map: FWD

Date: (5/21/2024)

0 50 100
Feet
1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Farmed Wetland Determination
2005 NAIP Imagery - Normal
ITC Forks to Rost 161kV Project
ITC Midwest LLC
Jackson County, Minnesota

Survey Area

Farmed Wetland Determination Signature

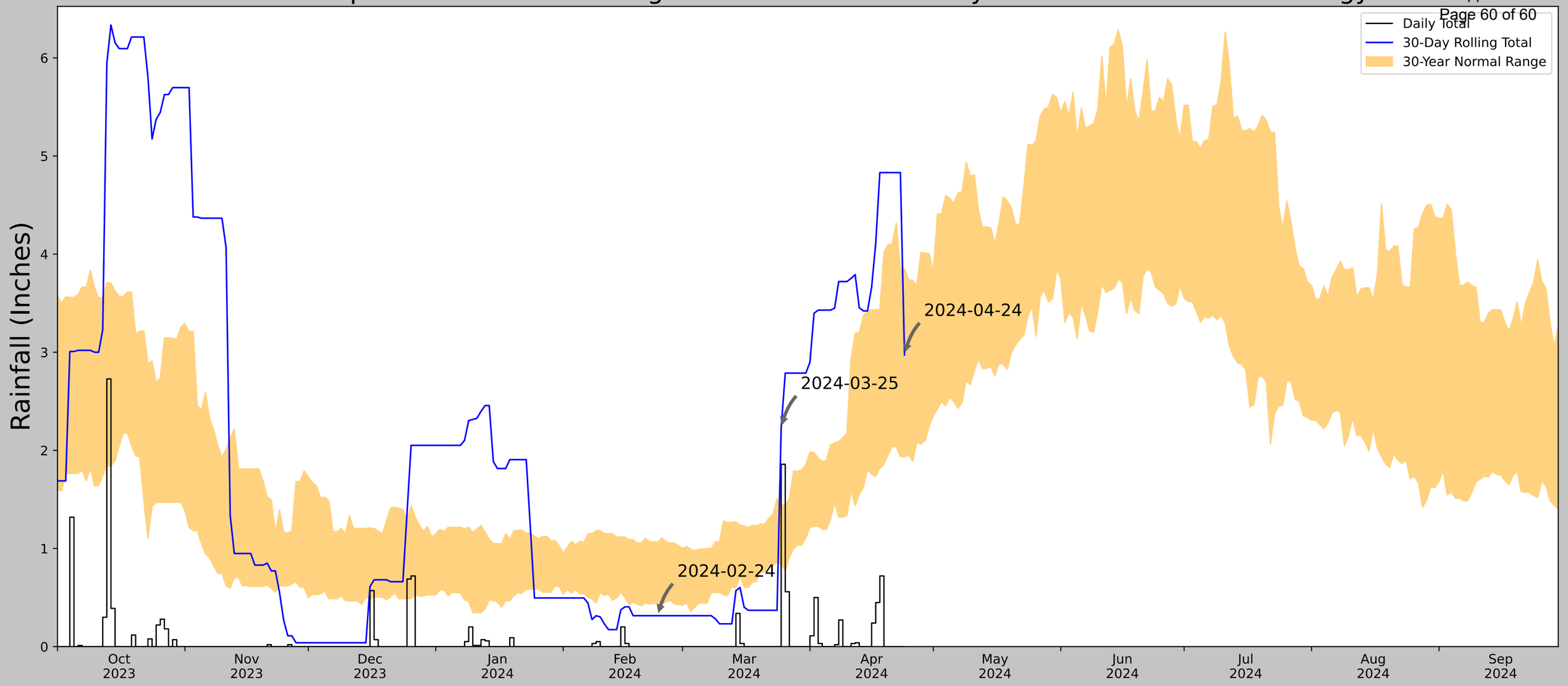
merjent

Source: Z:\Clients\1_LIT\Cl\Forks_Rost\ArcGIS\Biological\001_ArcPro\ForksRost_Wetland_Delineation.aprx - Map: FWD
Date: (5/21/2024)

Appendix D

APT Analysis

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.602523, -95.242643
Observation Date	2024-04-24
Elevation (ft)	1438.625
Drought Index (PDSI)	Incipient wetness (2024-03)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-04-24	1.935827	3.85315	2.972441	Normal	2	3	6
2024-03-25	0.833071	1.448819	2.228347	Wet	3	2	6
2024-02-24	0.432283	1.066535	0.314961	Dry	1	1	1
Result							Normal Conditions - 13

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
LAKE PARK	43.4483, -95.3247	1464.895	11.421	26.27	5.44	11295	81
LAKE PARK 0.2 N	43.4516, -95.3251	1466.864	0.229	1.969	0.104	23	9
LAKE PARK 3.2 SSE	43.403, -95.3079	1439.961	3.241	24.934	1.539	10	0
HARRIS 0.1 NNE	43.4473, -95.4328	1558.071	5.423	93.176	2.946	9	0
MILFORD 4 NW	43.3828, -95.1842	1401.903	8.379	62.992	4.298	14	0
SPIRIT LAKE	43.4231, -95.1394	1419.948	9.458	44.947	4.681	1	0