#### Montana Department of Transportation Wetland Mitigation Monitoring Report

#### **ROSTAD RANCH MITIGATION SITE**

**Project Overview** 

MDT Project: STPX 002(749), UPN #5565

Watershed: Watershed #10 - Musselshell River Basin

**Monitoring Year: 2024** 

**Years Monitored**: 12<sup>th</sup> year of monitoring.

Corps Permit Number: NWO-2006-90851-MTB

Monitoring Conducted By: Confluence Consulting Inc.

Dates Monitoring Was Conducted: June 25, 2024

#### **Purpose of the Approved Project:**

The site was originally constructed to provide 39.70 acres of compensatory wetland mitigation credits for wetland impacts associated with future transportation projects in Watershed #10 – Musselshell River Basin. The initial project consisted of filling drainage ditches, excavating, and grading the site to distribute water across the site, and creating open-water areas. Adaptive Management actions were undertaken in 2017 to install several spreader berms to improve distribution of supplemental irrigation water across the site. After discussions with the Corps and the Design Consultant, the overall wetland development goal was reduced to 27.4 wetland credit acres.

Latitude: 46.462457 Longitude: -110.294063

County: Meagher Nearest Town: Martinsdale, MT

**Map Included:** Figure 1 – Site Location Map on page #10.

Mitigation Site Construction Started: 2012 Construction Ended: 2012

Adaptive Management: In 2017, several berms were installed to improve overall water

management and distribution for increased wetland expansion across the site.

Dates of Any Recent Corrective or Maintenance Activities (since previous report): MDT cleaned out irrigation ditches and bird boxes prior to the initiation of irrigation flows on April 30, 2024. Irrigation flows were turned into site on April 30, 2024, and were shut down on June 6<sup>th</sup>, 2024. Flows were shut off due to call on water in the Musselshell River basin due to low snowpack and historic low flows in Musselshell River.

**Activity:** Noxious Weed Treatment **Date:** September 15, 2023, and May 23, 2024. **Specific recommendations for any additional corrective action:** Continue weed

treatment so that the site may continue to meet this performance criteria.

**Anticipated Wetland Credit Acres: 27.40** 

Wetland Credit Acres Generated to Date: 30.10

#### **Previous Monitoring Reports:**

https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

**<u>Requirements:</u>** (from approved mitigation plan, banking instrument, or Department of Army (DA) permit conditions)

**Monitoring Period:** 5 years from construction completion or until concurrence by the US Army Corps of Engineers (USACE).

**Performance Standards:** A summary of performance standards established for the Rostad Ranch site and whether they are being achieved is provided in Table 1.

**Table 1. Summary of Performance Standards.** 

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Characteristics	The three concurrent parameter criteria for hydrology, vegetation, and soils as outlined in the 1987 Wetland Manual and 2010 Great Plains Regional Supplement.	Y	Wetland habitat areas within the mitigation site meet the three parameters required to qualify as wetlands. This criterion is met in 2024.
Wetland Hydrology	Soil saturation is present for at least 12.5 percent of the growing season.		Irrigation water was turned onto the site from April 30 <sup>th t</sup> -June 6 <sup>th</sup> (37 days), meeting and exceeding the required 12.5 percent of the growing season (15 of 120 days).
	Hydric soil conditions present or appear to be forming.	Y	Hydric soils have been documented in restoration, rehabilitation, creation, and preservation wetlands across the mitigation site.
Hydric Soil	Soil is sufficiently stable to prevent erosion.	Y	Disturbed soil is stable and does not demonstrate signs of erosion.
	Soil is able to support plant cover.	Y	Plant cover has established and is stable across areas previously disturbed during site construction.
Hydrophytic	Combined absolute cover of facultative or wetter species is greater than or equal to 70 percent.	Y	Wetland data points demonstrate that the delineated wetlands contain a dominance of hydrophytic vegetation. Wetlands exhibit ≥ 70% absolute cover from hydrophytic vegetation.
Vegetation	Noxious weeds do not exceed 5 percent cover.	Y	Weed treatment has been effective at the mitigation site, and noxious weed cover is estimated at 1% across the mitigation site.  This criterion is met.
Woody Plants	Plantings exceed 50 percent survival after 5 years.	Y	This criterion was met after 5 years (2017). In the 12 <sup>th</sup> year of monitoring, woody plantings persist, and volunteers are observed around planting zones and other areas of the site.
Open Water Areas	Open water that is established within the designated wetland cells will be considered successful and creditable if it does not exceed 10 percent of the total wetland acreage.	Y	No open water with less than 5 percent vegetation cover was observed at the mitigation site in 2024. This criterion is therefore met.
	Success will be achieved when noxious weeds do no exceed 5 percent cover within the buffer areas on site.	Y	Noxious weed cover in the upland buffer is 1% or less. This criterion is met.
Upland Buffer	Any area disturbed within creditable buffer zones must have at least 50 percent aerial cover of desirable upland plant species by end of monitoring period.		Upland buffers within the site exhibited greater than 50 percent aerial cover of desirable (non-weed) species in 2024.
Weed Control	Weed-control measures are implemented to minimize and/or eliminate infestations of state-listed noxious weed species within the site.	Y	Noxious weed treatment has been effective at the site. State-listed noxious weed species are estimated at 1 percent absolute cover across the entire site in 2024.
Fencing	Wildlife-friendly fencing is installed along the easement boundaries.	Y	Wildlife-friendly fencing installed along the easement boundaries has been maintained in good condition.

#### **Summary Data**

Wetland Delineation - Total wetland acreage delineated in 2024 is 29.04 acres, which includes 2.59 acres of pre-project wetlands at the mitigation site. This is a slight decrease of 0.46 acres from 2023 is probably due to the continued drought conditions in the Musselshell River basin. The dominant wetland type at the mitigation site is palustrine emergent (PEM). Palustrine scrub-shrub (PSS) habitat is present in the expanding wetland areas in the south end of the site adjacent to the original willow preservation area, and in the north central portion of the site where volunteer & willow cuttings (Salix spp.) have established. In 2017, adaptive management strategies were implemented to increase the amount of inundation in some areas of the site with the construction of spreader dikes across the site. However, no open water areas were observed during the June 2024 monitoring event. Despite the lack of open water areas, the large, excavated cell in the northeast corner of the site was inundated, but the vegetation cover exceeded five percent. Additionally, there was standing water amongst the vegetated emergent wetland areas and adjacent to the dike structures. Groundwater hydrology at the site has been sufficient to sustain wetlands, and wetland boundaries appear to be expanding in certain areas. These areas are indicated by the notable transition from smooth brome (Bromus inermis) dominant plant communities to the inclusion of more facultative and hydrophytic species.

**Vegetation** – A total of 94 plant species have been identified on the site from 2013 through 2024. A comprehensive species list is included in Appendix B (Table B-1).

One upland type (UT) and 9 wetland type (WT) vegetation communities were identified and mapped at the mitigation site in 2024 (Figure A-3, Appendix A). Upland type 11 (*Elymus trachycaulus / Pascopyrum smithii*) is no longer present and has been replaced with UT 8 (*Bromus inermis / Trifolium* spp.), the single UT at the site. Community composition at the site has been relatively stable, except for the transition documented in 2022 of reed canarygrass (*Phalaris arundinacea*) to creeping meadow foxtail (*Alopecurus arundinaceus*) as the dominant wetland graminoid in most WTs. Additionally, the vegetation community in the excavated cell in the northeast corner of the site has changed annually since 2020. In 2024, WT 18 (*Populus balsamifera*) was created to document the expansion of cottonwood saplings/trees in certain regions of the site. The following vegetation community types were identified in 2024:

- Upland Type 8 Bromus inermis / Trifolium spp.
- Wetland Type 2 Juncus balticus / Carex nebrascensis
- Wetland Type 3 Salix exigua
- Wetland Type 7 Phalaris arundinacea
- Wetland Type 10 Alopecurus arundinaceus
- Wetland Type 14 Alopecurus arundinaceus / Eleocharis palustris
- Wetland Type 15 Typha latifolia
- Wetland Type 16 Carex praegracilis / Poa pratensis
- Wetland Type 17 Glyceria grandis/Eleocharis palustris
- Wetland Type 18 Populus balsamifera

Species composition of each community type is provided in detail in the Wetland Mitigation Site Monitoring form (Appendix B), and community boundaries are depicted on Figure A-3 (Appendix A).

Infestations of state-listed Priority 2B noxious weeds were mapped at the Rostad Ranch site in 2024. Noxious weed cover is an estimated one percent cover across the entire site (Figure A-3, Appendix A). Infestations are assigned a cover class (Trace = <1%; Low = 1-5%; Moderate = 6-25%; high = 26-50%) assessed at a 0.1-acre area. In 2024, the number of Canada thistle (*Cirsium arvense*)

infestations remained and spotted knapweed (*Centaurea stoebe*) was not observed. Low infestations of houndstongue (*Cynoglossum officinale*) and a single trace of hoary alyssum (*Berteroa incana*) were documented in 2024.

Vegetation cover was measured along four transects in 2024 (Figure A-1, Appendix A). Summaries of the data collected at these transects are presented in Tables 2-5 below and detailed data for each transect are provided in the monitoring forms in Appendix B. Photographs of the transect start and end points are provided in Appendix C.

Table 2 summarizes the data for T-1, which is 422 feet long and intersects UT 8, WT 2, WT 7, and WT 17. UT 11 is no longer present at the site, and the upland berm that T-1 crosses was remapped as UT 8, resulting in a decrease in the number of communities along the transect. In 2024, wetland habitat decreased slightly near the start of T-1 at the transition from UT to WT communities. Consistent with trends observed in 2023, total vegetative cover continues to increase slightly along this transect.

Table 2. Data Summary for T-1 From 2019 Through 2024 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2019	2020	2021	2022	2023	2024
Transect Length (feet)	422	422	422	422	422	422
Vegetation Community Transitions along Transect	5	5	5	5	5	5
Vegetation Communities along Transect	5	6	6	5	4	4
Hydrophytic Vegetation Communities Along Transect	4	4	4	3	3	3
Total Vegetative Species	23	22	22	25	26	26
Total Hydrophytic Species	10	8	8	11	10	10
Total Upland Species	13	14	14	14	16	16
Estimated % Total Vegetative Cover	95	95	95	96	97	97
Estimated % Unvegetated	5	5	5	4	3	3
% Transect Length Comprising Hydrophytic Vegetation Communities	62	61	61	66	67	64
% Transect Length Comprising Upland Vegetation Communities	38	39	39	34	33	36
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

Data collected on T-2 are summarized in Table 3. T-2 is 453 feet long and intersects UT 8, WT 2, WT 10, and WT 18. Ninety-four percent of the transect crossed wetland habitat in 2024, which is a one percent increase from 2023. Total vegetative cover has remained constant at 95 percent from 2016 to 2024. The addition of vegetation community WT 18 (*Populus balsamifera*) in 2024 increased the number of community transitions along the transect from three to four.

Table 3. Data Summary for T-2 From 2019 Through 2024 at the Rostad Ranch Wetland Mitigation Site.

Monitoring Year	2019	2020	2021	2022	2023	2024
Transect Length (feet)	453	453	453	453	453	453
Vegetation Community Transitions along Transect	3	4	6	5	3	4
Vegetation Communities along Transect	3	3	3	3	3	4
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	3
Total Vegetative Species	16	16	19	21	22	22
Total Hydrophytic Species	9	6	8	8	7	8
Total Upland Species	7	10	11	13	15	14
Estimated % Total Vegetative Cover	95	95	95	95	95	95
Estimated % Unvegetated	5	5	5	5	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	78	82	93	92	93	94

Monitoring Year	2019	2020	2021	2022	2023	2024
Transect Length (feet)	453	453	453	453	453	453
% Transect Length Comprising Upland Vegetation Communities	22	18	7	8	7	6
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

Data collected on T-3 are summarized in Table 4. T-3 is 320 feet long and is composed entirely of wetland habitat, intersecting WT 2, WT 10, WT 15, and WT 18. The total number of species observed in 2024 increased, and total vegetative cover remained the same as in 2023. In 2024, the addition of WT 18 (*Populus balsamifera*) increased both the total number of communities and transitions along the transect from three to four.

Table 4. Data Summary for T-3 From 2019 Through 2024 at the Rostad Ranch Wetland Mitigation Site.

Monitoring Year	2019	2020	2021	2022	2023	2024
Transect Length (feet)	320	320	320	320	320	320
Vegetation Community Transitions along Transect	3	3	3	3	3	4
Vegetation Communities along Transect	3	3	3	3	3	4
Hydrophytic Vegetation Communities Along Transect	3	3	3	3	3	4
Total Vegetative Species	21	22	19	20	20	23
Total Hydrophytic Species	16	16	12	12	10	10
Total Upland Species	5	6	7	8	10	13
Estimated % Total Vegetative Cover	85	90	90	92	93	93
Estimated % Unvegetated	15	10	10	8	7	7
% Transect Length Comprising Hydrophytic Vegetation Communities	100	100	100	100	100	100
% Transect Length Comprising Upland Vegetation Communities	0	0	0	0	0	0
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

Data collected on T-4 are summarized in Table 5. T-4 is 412 feet long and was established in 2017 following adaptive management actions. T-4 intersects UT 8 and WT 16. In 2024, wetland habitat along the transect remained the same. Total vegetative species decreased by one corresponding to the loss of an upland species in 2024.

Table 5. Data Summary for T-4 From 2019 Through 2024 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2019	2020	2021	2022	2023	2024
Transect Length (feet)	412	412	412	412	412	412
Vegetation Community Transitions along Transect	3	4	2	2	2	2
Vegetation Communities along Transect	2	3	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1	1
Total Vegetative Species	14	17	15	17	20	19
Total Hydrophytic Species	5	4	3	5	5	5
Total Upland Species	9	13	12	12	15	14
Estimated % Total Vegetative Cover	80	80	85	87	93	93
Estimated % Unvegetated	20	20	15	13	7	7
% Transect Length Comprising Hydrophytic Vegetation Communities	21	8	10	23	24	24

Monitoring Year	2019	2020	2021	2022	2023	2024
Transect Length (feet)	412	412	412	412	412	412
% Transect Length Comprising Upland Vegetation Communities	79	92	90	77	76	76
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0

**Woody Plant Survival** – The success criteria of at least 50% survival for woody plantings five years post-construction was achieved in 2017. Therefore, woody plant survival was not quantitatively assessed during the 2024 monitoring event. Approximately 2,000 willow cuttings were planted throughout the excavated areas when the site was constructed in 2012. A total of 100 black cottonwoods (*Populus balsamifera*) and 100 quaking aspens (*Populus tremuloides*) were installed around the perimeter of the proposed open-water areas in 2012. The preservation wetland in the southern portion of the site is a willow dominant community (WT 3), which continues to expand via natural recruitment. In 2024, WT 18 (*Populus balsamifera*) was mapped in the southern portion of the site, to the west of the preserved wetland area and in the central portion of the site, towards the north boundary. An additional WT 3 community has been established from volunteer narrow-leaf willow (*Salix exigua*) in the north central portion of the site (Appendix A, Figure A-3).

**Hydrology** – Hydrology at the Rostad Ranch mitigation site is supplied from multiple sources including a shallow seasonal groundwater table, groundwater that emerges from a natural spring located near the narrow-leaf willow stand in the southern portion of the site, direct precipitation, surface runoff, and surface-water diversion out of an adjacent irrigation canal. Irrigation water was diverted onto the site on April 30, 2024, and maintained a flow volume of approximately 1.45 cubic foot per second (cfs). Irrigation was turned off at the site on June 6, 2024 due to drought conditions and a Water Court call on irrigation water in the Musselshell Basin. Based on a 50% probability of an ambient temperature of 28°F or higher, the growing season at Rostad Ranch extends from approximately May 22 - September 23 (120) days (NRCS 20203b). Wetland hydrology, defined as 12.5% of the growing season, requires a minimum of 15 days of soil saturation. These conditions were ensured to be met in 2024 by the diversion of irrigation water across the site. During the June monitoring event, no open water areas with less than five percent vegetation cover were observed at the mitigation site. Standing water was observed in the cattail marsh in the south portion of the site up to 12" deep. Additional inundation was observed in the northeast excavated cell consisting of WT 17, but the vegetation cover exceeded five percent. One groundwater monitoring well remains at the site and is monitored monthly by the US Geological Survey (USGS). On June 6, 2024, the well measured 4.2' to the water table below land surface.

**Photographs** – Photographs were taken in 2024 at photo points 1–10 (PP1 to PP10), transect endpoints, and data points (Appendix C). Please refer to previous years' monitoring reports for photographs from all other years.

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**Soils** — Soil test pits were excavated at twenty-one locations across the mitigation site. Soil series mapped within the site include the Veryney-Notter cobbly loams soil unit and the Delpoint variant-Marmarth-Cabbart loam soil unit (NRCS 2024a). Wetland soil pits exhibited several hydric soil indicators including redox dark surface and depleted matrix. No hydric soil indicators were observed in upland sample pits, although redoximorphic concentrations were present in some. In these upland points, the three concurrent parameters of hydric soil development, wetland hydrology, and a hydrophytic vegetation community were not met, and the sample point is therefore identified as non-wetland (upland). Soil textures within the wetland plots ranged from sandy clay loam to clay. Gravels and cobbles were common in soil profiles across the site.

**Wildlife** – Nineteen bird species were documented at the site during the 2024 monitoring event, including bobolinks (*Dolichonyx oryzivorus*), an S2/S3 rated species. The bobolinks were observed

nesting and loafing. In 2024, bird box #6 appeared to be in use, the rest of the bird boxes seemed unoccupied. In addition to avian observations, boreal chorus frogs (*Pseudacris maculata*), white-tailed deer (*Odocoileus virginianus*), and a vole (*Microtus sp.*) were observed at and around the site, indicating a diversity of wildlife use by amphibians, mammals, and birds.

**Functional Assessment** — The mitigation site is rated as a Category II wetland per the Montana Wetland Assessment Method (MWAM). Following the 2022 assessment, the Rostad Ranch mitigation wetland site increased from wetland Category III to wetland Category II. This change corresponded with an increase in delineated wetland acreage and wildlife habitat rating. The 2024 functional assessment results for the Rostad Ranch Mitigation Site are summarized in Table 6. Completed MWAM forms for the site are provided in Appendix B.

Table 6. MWAM Summary for the Rostad Ranch Wetland Mitigation Site (2018-2024).

Table 6. MWAM Summary for	1116 110316	id Italicii	TTGLIAIIA N	Inagation	5116 (2011	J-2027j.	
Function and Value Parameters from the Montana Wetland Assessment Method	2018 <sup>(a)</sup>	2019 <sup>(a)</sup>	2020 <sup>(a)</sup>	2021 <sup>(b)</sup>	2022 <sup>(b)</sup>	2023 <sup>(b)</sup>	2024 <sup>(b)</sup>
Listed/Proposed T&E Species Habitat	Low (0)	Low (0)	Low (0)	Low (0)	Low (0.1)	Low (0.1)	Low (0.1)
MTNHP Species Habitat	High (0.9)						
General Wildlife Habitat	Mod (0.5)	Mod (0.5)	Mod (0.5)	Low (0.3)	Mod (0.5)	Mod (0.5)	Mod (0.5)
General Fish/Aquatic Habitat	NA						
Flood Attenuation	NA						
Short- and Long-Term Surface Water Storage	Mod (0.6)	Mod (0.6)	High (0.9)	High (0.9)	High (0.9)	High (0.9)	High (0.9)
Sediment/Nutrient/Toxicant Removal	High (1.0)						
Sediment/Shoreline Stabilization	High (0.9)	High (0.9)	High (0.9)	High (0.9)	High (0.9)	NA	High (0.9)
Production Export/Food Chain Support	High (0.8)	High (0.8)	High (0.8)	Mod (0.6)	Mod (0.8)	Mod (0.8)	Mod (0.8)
Groundwater Discharge/Recharge	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.7)
Uniqueness	Low (0.3)	Low (0.3)	Low (0.3)	Low (0.2)	Low (0.3)	Low (0.3)	Low (0.3)
Recreation/Education Potential (bonus points)	Low (0.05)	Low (0.05)	Low (0.05)	Low (0.05)	Low (0.05)	Low (0.05)	NA
Actual Points/Possible Points	5.75/9	5.75/9	6.05/9	5.55/9	6.15/9	5.25/8	6.10/9
% of Possible Score Achieved	63.9%	63.9%	67.2%	61.7%	68.3%	66%	68%
Overall Category	III	III	III	III	II	II	II

<sup>(</sup>a) 1999 MWAM form (Berglund, 1999)

#### Credit Summary

**Wetland Credits** - Table 7 summarizes the estimated wetland credits generated at Rostad Ranch based on the USACE-approved credit ratios and the wetland delineations completed in 2022-2024. Proposed mitigation credits from the Rostad Ranch Mitigation Plan (MDT 2007) included reestablishing 27.11 wetland acres, rehabilitating 2.63 wetland acres, creating 9.84 wetland acres, preserving 0.25 wetland acres, and maintaining 6.76 acres of upland buffer to produce a total of 39.7 mitigation credit acres. Adaptive management activities on the site in 2017 resulted in a shift of crediting which decreased the overall rehabilitated wetland acreage and increased the reestablished and created wetland acreage such that the total number of anticipated wetland credit acres was reduced to 27.4. Mitigation credits

<sup>(</sup>b) 2008 MWAM form (Berglund and McEldowney, 2008)

(including upland buffer credits) total 30.10 in 2024.

**Functional Credits** — Table 8 summarizes the functional units generated at the Rostad Ranch mitigation site in 2024. The 2007 Rostad Ranch Mitigation Plan, Meagher County, Montana (MDT 2007) anticipates increasing functional points at the site from 3.2 of 9 possible points pre-construction to 6.4 of 9 possible points post-construction. The associated increase in functional points would increase the wetland from Category III to Category II, and the planned development of 39.84 acres of wetland would generate 254.91 units after the complete monitoring period. Following the twelfth year of monitoring, the site achieved 6.10 of 9 possible points and has generated a total of 171.84 Functional Units. While the site has achieved the objective of increasing from Category III to Category II, the site has yet to generate the desired functional credits and achieve the desired actual and possible points.

Table 7. Wetland Mitigation Credits Estimated for the Rostad Ranch Site (2022–2024).

Compensatory Mitigation Type	Wetland Type (FGDC 2013)	Approved Mitigation Ratios <sup>(a)</sup>	Anticipated Mitigation Area (acres)	Anticipated Mitigation Credit (acres)	2022 Delineated Mitigation Areas (acres)	2022 Estimated Mitigation Credit (acres)	2023 Delineated Mitigation Areas (acres)	2023 Estimated Mitigation Credit (acres)	2024 Delineated Mitigation Areas (acres)	2024 Estimated Mitigation Credit (acres)
Restoration (Re-establishment)	Palustrine Emergent	1:1	27.11	27.11 <sup>(d)</sup>	19.37	19.37	19.30	19.30	19.23	19.23
Establishment (Creation)	Palustrine Emergent	1:1	9.84	9.84 <sup>(d)</sup>	7.80	7.80	7.88	7.88	7.50	7.50
Restoration (Rehabilitation)	Palustrine Emergent	1.5:1	2.63	1.75 <sup>(d)</sup>	2.06	1.37	2.07	1.38	2.07	1.38
Preservation	Palustrine, Scrub/shrub	4:1	0.25	0.06	0.25	0.06	0.25	0.06	0.25	0.06
Upland Buffer	N/A	5:1	6.76 <sup>(b)</sup>	1.35 <sup>(b)</sup>	11.90 <sup>(c)</sup>	2.38 <sup>(c)</sup>	11.62 <sup>(c)</sup>	2.32 <sup>(c)</sup>	11.67 <sup>(c)</sup>	2.33 <sup>(c)</sup>
Permanent Wetland Impact	N/A	1:1	N/A	-0.41	N/A	-0.41	N/A	-0.41	N/A	-0.41
		Totals	46.59	39.70	41.38	30.57	41.12	30.53	40.72	30.10

<sup>(</sup>a) Mitigation credit ratios utilized were from the Montana Corps Regulatory Program 2005 Wetland Credit Ratios [USACE, 2005].

Table 8. Functional Unit Credits for the Rostad Ranch Wetland Mitigation Site.

Compensatory Mitigation Type	2024 Delineated Acres	Mitigation Ratio	2024 Mitigation Credit Acres	MWAM Actual Points	2024 Functional Units Generated
Restoration (Reestablishment)	19.23	1:1	19.23	6.10	117.30
Establishment (Creation)	7.50	1:1	7.50	6.10	45.75
Restoration (Rehabilitation)	2.07	1.5:1	1.38	6.10	8.42
Preservation	0.25	4:1	0.06	6.10	0.37
Upland Buffer	11.67	5:1	2.33	N/A	N/A
		Functional Units	(Mitigation Credit Ac	res × Actual Points)	171.84

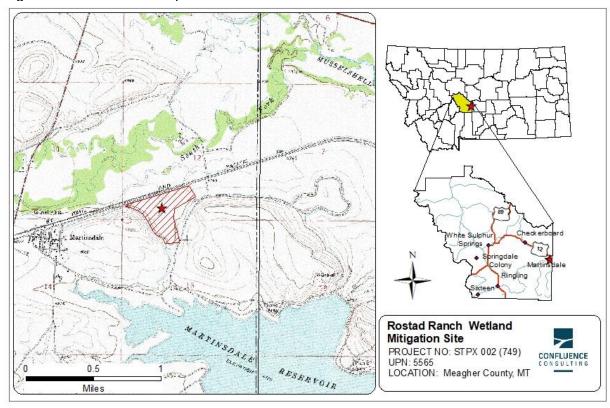
<sup>(</sup>b) Anticipated upland buffer credits were used for the first several years of the project.

<sup>(</sup>c) Upland buffer credit acres were calculated based on the area of a 50-foot buffer around the most to-date delineated wetland boundary.

<sup>(</sup>d) Adaptive management activities on the site in 2017 resulted in a shift of crediting such that the total number of anticipated wetland credit acres was reduced to 27.4

#### Maps, Plans, Photos

Figure 1: Site Location Map



**Project Area Maps/Figures:** See Appendix A (A-2 – Monitoring Activity Locations, A-3 – Mapped Site Features and A-4 – Wetland Delineation).

**Data Forms:** See Appendix B (Site Monitoring form, plant list, USACE data forms, and MWAM forms).

**Photos:** See Appendix C.

**Plans:** See Appendix D of 2018 Monitoring Report

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#### **Conclusions**

The Rostad Ranch Wetland Mitigation Site has again achieved each of the performance standards outlined in the mitigation plan. Wetland habitat is developing into a diverse system with volunteer woody species, which contributes to a diversity of habitat types. Since adaptive management actions to spread water across the site were implemented in 2017, wetland habitat at the site has gradually expanded. The results of the 2024 monitoring event estimate the generation of 30.1 mitigation credit acres, which exceeds the target number of 27.4 acres. Based on the success of the adaptive management plan, the mitigation site has the potential to provide additional wetland credits going forward.

#### References

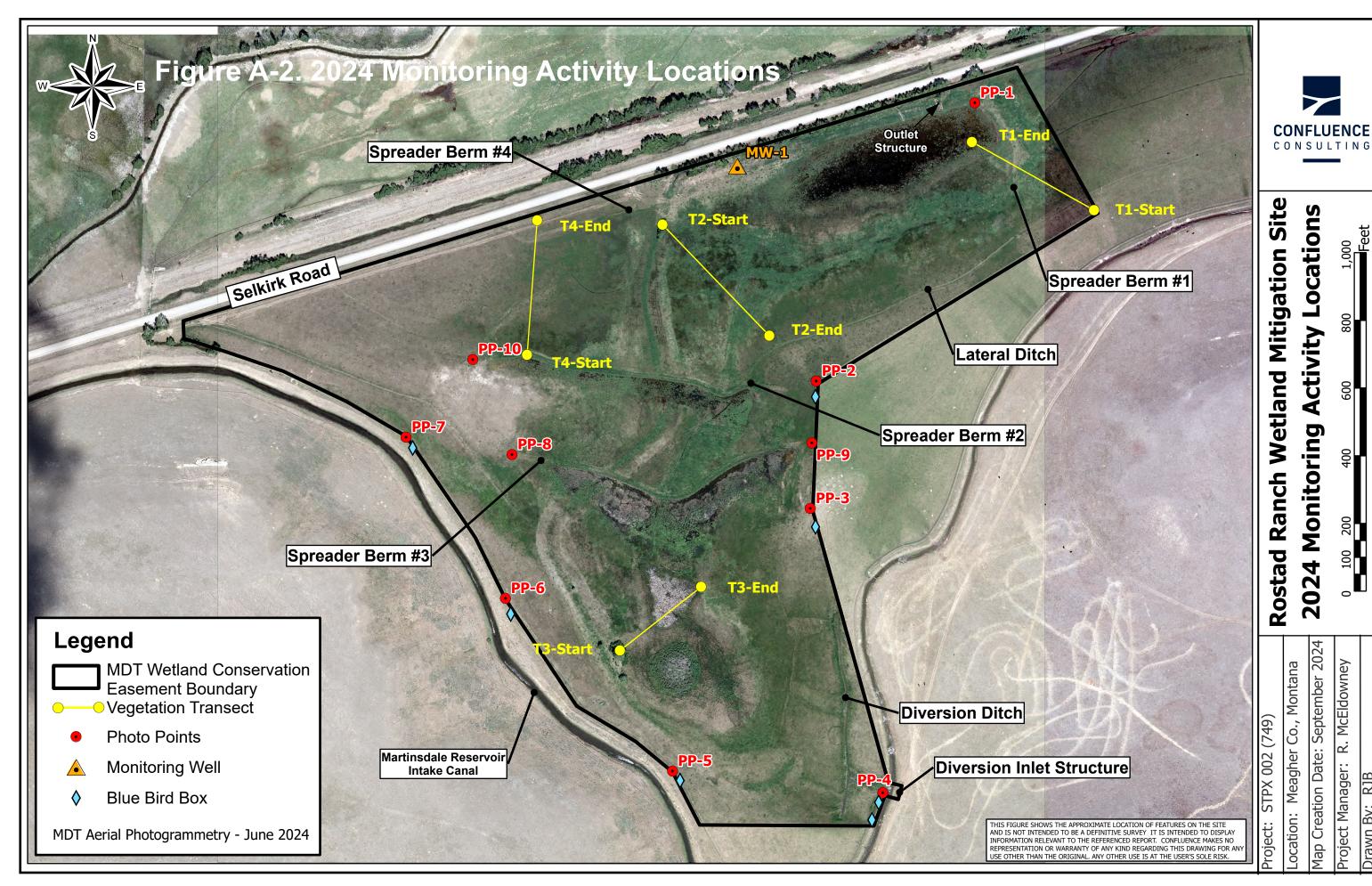
- Berglund, J. and R. McEldowney. 2008. MDT Montana Wetland Assessment Method, PBS&J Project B43072.00, prepared by Post, Buckley, Schuh, & Jernigan, Helena, MT, for the Montana Department of Transportation, Helena, MT.
- **Environmental Laboratory.** 1987. *Corps of Engineers Wetlands Delineation Manual.* U.S. Army Corps of Engineers. Washington, DC.
- **Federal Geographic Data Committee (FGDC).** 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- **Hartman, Adam.** 2024. U.S. Drought Monitor Map Archive for State of Montana. Accessed on 13 September 2024 at <a href="https://droughtmonitor.unl.edu/Maps/MapArchive.aspx">https://droughtmonitor.unl.edu/Maps/MapArchive.aspx</a>
- Lesica, P. 2012. Manual of Montana Vascular Plants, Brit Press, Fort Worth, TX.
- Montana Department of Transportation (MDT). 2007. Rostad Ranch Wetland Mitigation Plan, Meagher County, Montana, prepared by the Montana Department of Transportation, Helena, MT.
- Montana Natural Heritage Program (MTNHP). 2024. Montana Species of Concern Report.

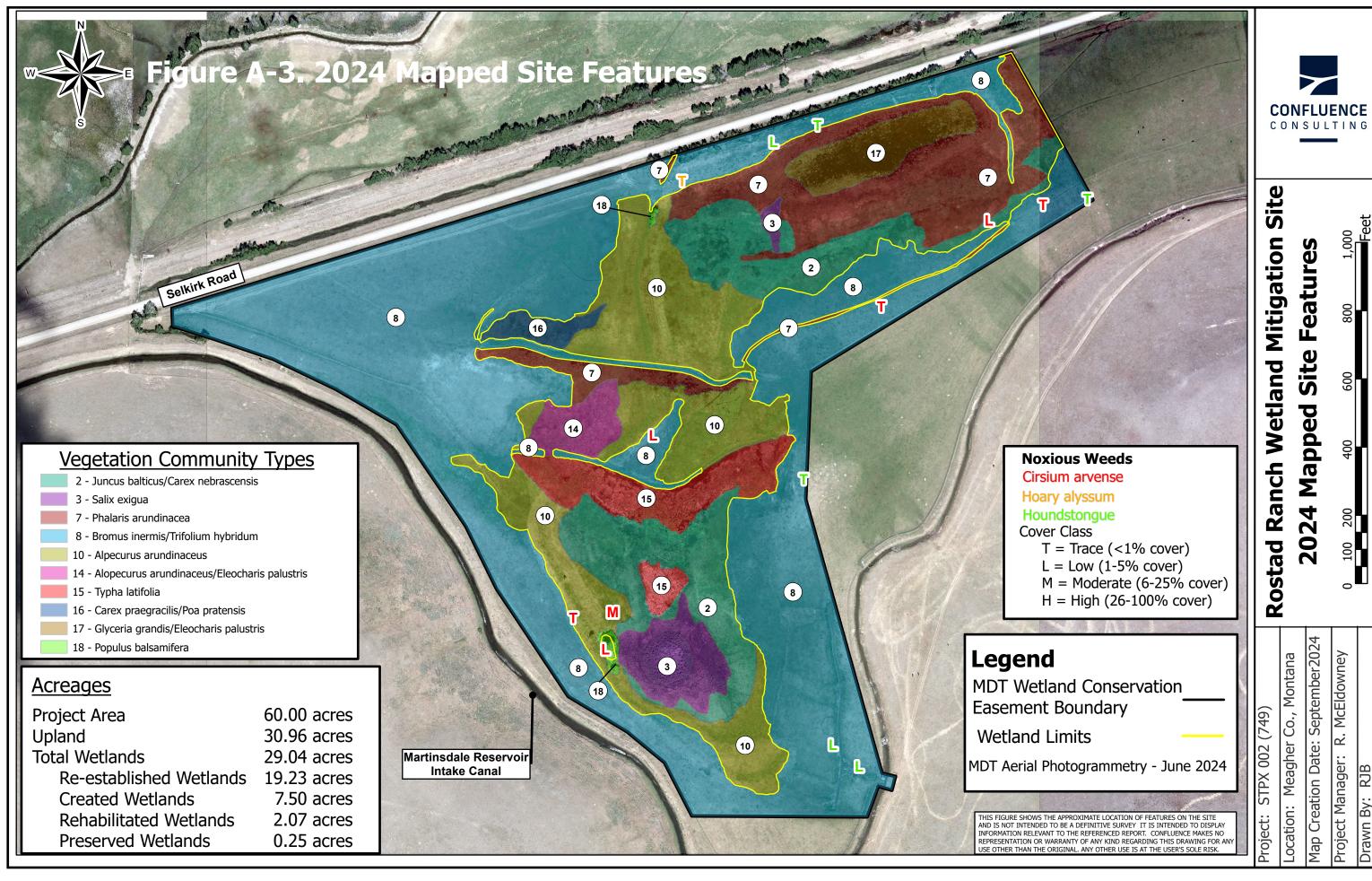
  Montana Natural Heritage Program. Accessed on 13 September 2024 at

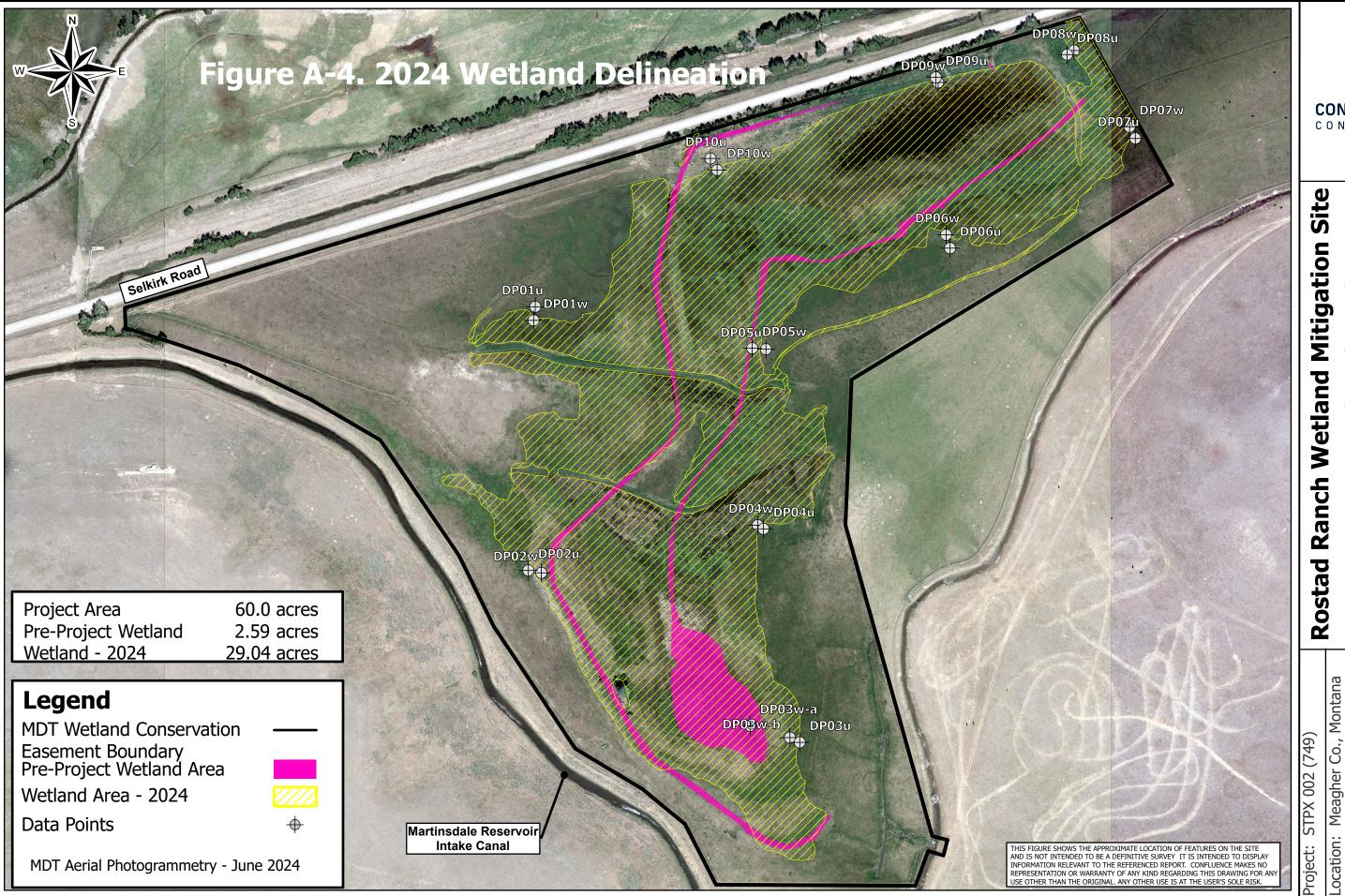
  <a href="http://mtnhp.org/SpeciesOfConcern/?AorP=p">http://mtnhp.org/SpeciesOfConcern/?AorP=p</a>
- United States Department of Agriculture, Natural Resources Conservation Service. 2024. Field Indicators of Hydric Soils in the United States, Version 9.0. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- Natural Resources Conservation Service (NRCS). 2024a. Soil Survey (SSURGO) Database for Meagher County, Montana. Accessed on September 17, 2024, at http://websoilsurvey.nrcs.usda.gov/
- Natural Resources Conservation Service (NRCS). 2024b. Wetlands Climate Tables. WETS Station: MILLEGAN 14 SE, MT. 1970-2024. Available URL: <a href="https://agacis.rcc-acis.org/?fips=30059">https://agacis.rcc-acis.org/?fips=30059</a>. Site Accessed September 20, 2024.
- **US Army Corps of Engineers (USACE).** 2005. "Montana Mitigation Information," *army.mil*, retrieved October 10, 2016, from <a href="http://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/Mitigation">http://www.nwo.usace.army.mil/Missions/Regulatory-Program/Montana/Mitigation</a>
- U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), prepared by U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS.
- **U.S. Army Corps of Engineers (USACE).** 2020. *National Wetland Plant List (Version 3.2),* prepared by U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.
- U.S. Fish and Wildlife Service (USFWS). 2024. IPaC Resource List. Environmental Conservation Online System (ECOS). Accessed on 12 September 2024. https://ipac.ecosphere.fws.gov

## APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana









# **Delineation** Wetland 2024

Map Creation Date:

Project Manager:

A-3

### APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana

#### MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Rostad RanchAssessment Date/Time6/25/2	2024
Person(s) conducting the assessment: R McEldowney, R Baumgarten, E Reynaud	
Weather: Sunny, 62.5 degrees Location: Martinsdale, MT	_
MDT District:_BillingsMilepost:	
Legal Description: T <u>8N</u> R <u>11E</u> Section(s) 12 and 13	
Initial Evaluation Date: 8/21/2013 Monitoring Year: 12 #Visits in Year: 1	
Size of Evaluation Area: 60 (acres)	
Land use surrounding wetland:	
The surrounding landscape is primarily managed as pasturland.	
HYDROLOGY	
Surface Water Source: Groundwater, supplemental hydrology from ditch/headgate, surface runoff.	
Inundation: Average Depth: 0.5 (ft) Range of Depths: (ft)	
Percent of assessment area under inundation:3 %	
Depth at emergent vegetation-open water boundary:0 (ft)	
If assessment area is not inundated then are the soils saturated within 12 inches of surface:Yes_	
Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc <u>:</u>	
Drainage patterns, soil saturation, water marks, geomorphic position, FAC-neutral test, soil surface cracks, highwater table, sulfidic odor, surface water.	
Groundwater Monitoring Wells	
Record depth of water surface below ground surface, in feet.	
Well ID Water Surface Depth (ft)	
MW-1 4.2	
Additional Activities Checklist:	
Map emergent vegetation-open water boundary on aerial photograph.	
Observe extent of surface water during each site visit and look for evidence of past surface water	
elevations (drift lines, erosion, vegetation staining, etc.)	
Use GPS to survey groundwater monitoring well locations, if present.	
Hydrology Notes:	
Groundwater well measured 6/6/2024 by USGS. Depths are Below Land Surface (BLS). The total well depth of MW-1 is 14' below land surface in the Clagget Shale of the Montana Group local aquifer.	

#### **VEGETATION COMMUNITIES**

#### Site Rostad Ranch

(Cover Class Codes 0 = < 1%, 1 = 1.5%, 2 = 6.10%, 3 = 11.20%, 4 = 21.50%, 5 = >50%)

Community # 2 Community Type: Juncus balticus / Carex nebrascensis Acres: 6.35

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	2
Alopecurus pratensis	0	Bare Ground	1
Beckmannia syzigachne	0	Bromus inermis	0
Carex nebrascensis	4	Carex pellita	3
Carex praegracilis	2	Carex utriculata	2
Cirsium arvense	0	Deschampsia caespitosa	0
Eleocharis palustris	2	Elymus repens	1
Epilobium ciliatum	0	Hordeum jubatum	1
Juncus balticus	5	Mentha arvensis	1
Open Water	0	Pascopyrum smithii	0
Phalaris arundinacea	2	Phleum pratense	1
Poa palustris	2	Poa pratensis	2
Populus balsamifera	1	Rumex crispus	1
Salix exigua	1	Schedonorus pratensis	0
Schoenoplectus acutus	0	Sonchus arvensis	1
Taraxacum officinale	0	Thinopyrum intermedium	0
Trifolium hybridum	1	Trifolium pratense	0
Triglochin maritima	0	Typha latifolia	1

#### **Comments:**

Wet meadow community type. In 2024, this WT transitioned into a Salix exigua community (WT 3), in the south portion of the site.

Community # 3 Community Type: Salix exigua / 1.68 Acres: 1.68

Species	Cover class	Species	Cover class
Agrostis stolonifera	0	Alopecurus arundinaceus	3
Beckmannia syzigachne	0	Carex nebrascensis	1
Carex pellita	1	Carex praegracilis	1
Deschampsia caespitosa	1	Eleocharis palustris	2
Juncus balticus	2	Poa palustris	1
Salix exigua	5	Salix lutea	1
Schedonorus pratensis	1	Typha latifolia	0

#### Comments:

Undisturbed Salix community in the southern extent of the mitigation site that has expanded in 2024, replacing Juncus balticus/Carex nebrascensis (WT 2).

Community #	7	Community Type:	Phalaris arundinacea /	Acres:	6.51	
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	3
Alopecurus pratensis	1	Amaranthus retroflexus	0
Bare Ground	0	Bromus inermis	0
Carex aquatilis	0	Carex nebrascensis	2
Carex pellita	2	Carex praegracilis	2
Cirsium arvense	0	Deschampsia caespitosa	0
Eleocharis palustris	2	Elymus repens	2
Elymus trachycaulus	0	Juncus balticus	2
Medicago sativa	0	Phalaris arundinacea	4
Phleum pratense	1	Poa palustris	1
Poa pratensis	2	Populus balsamifera	1
Rumex crispus	0	Salix exigua	0
Thlaspi arvense	0	Trifolium hybridum	2
Typha latifolia	1		

#### **Comments:**

This area has expanded slightly in 2024, and is present in areas that appear to be transitioning from upland to wetland and supporting more hydrophytic vegetation.

Community # 8 Community Type: Bromus inermis / Trifolium spp. Acres: 30.53

Species	Cover class	Species	Cover class
Achillea millefolium	0	Agrostis stolonifera	0
Alopecurus arundinaceus	0	Bromus inermis	5
Camelina microcarpa	0	Carex pellita	0
Carex praegracilis	1	Carum carvi	2
Centaurea stoebe	0	Cirsium arvense	0
Dactylis glomerata	1	Elymus repens	3
Elymus trachycaulus	1	Juncus balticus	2
Medicago sativa	0	Melilotus albus	1
Pascopyrum smithii	1	Phalaris arundinacea	1
Phleum pratense	3	Poa palustris	0
Poa pratensis	3	Populus angustifolia	1
Schedonorus pratensis	2	Sinapis arvensis	0
Symphyotrichum ascendens	1	Symphyotrichum ericoides	0
Taraxacum officinale	1	Thinopyrum intermedium	0
Trifolium hybridum	3	Trifolium repens	1

#### Comments:

Bromus inermis/Trifolium spp. is the single UT observed at the mitigation site. In 2024, UT 8 expanded slightly as WT 2, 10, and 16 receded.

Community #	10	Community Type:	Alopecurus arundinaceus /	Acres:	9.6
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	5
Alopecurus pratensis	1	Bare Ground	1
romus inermis	0	Carex aquatilis	1
arex nebrascensis	2	Carex pellita	2
rsium arvense	0	Eleocharis palustris	1
ymus repens	2	Elymus trachycaulus	0
rdeum jubatum	0	Juncus balticus	3
alaris arundinacea	2	Poa palustris	1
a pratensis	2	Populus balsamifera	1
umex crispus	1	Salix exigua	0
pha latifolia	1		

#### **Comments:**

In 2024, small changes were observed for WT 10, receding along its west boundary, but expanding in small areas along the east and north. Alopecurus arundinaceus is the dominant wetland community type at the mitigation site.

Community # 14 Community Type: Alopecurus arundinaceus / Eleocharis palustris Acres: 0.93

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	5	Bare Ground	0
Beckmannia syzigachne	1	Carex nebrascensis	2
Carex pellita	0	Eleocharis palustris	3
Elymus trachycaulus	0	Glyceria grandis	0
Open Water	2	Phalaris arundinacea	0
Rumex crispus	1	Schoenoplectus acutus	1
Typha latifolia	1		

#### **Comments:**

Wetland community observed south of berm in central portion of site. Saw little to no change in 2024.

Community # 15 Community Type: Typha latifolia / Acres: 2.52

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	2	Alopecurus pratensis	0
Bare Ground	2	Beckmannia syzigachne	1
Carex nebrascensis	1	Carex pellita	2
Carex utriculata	1	Eleocharis palustris	3
lymus trachycaulus	1	Glyceria grandis	0
ppuris vulgaris	0	Open Water	1
nalaris arundinacea	2	Rumex crispus	1
alix exigua	1	Schoenoplectus acutus	1
ypha latifolia	4		

#### Comments:

Cattail marsh. In 2024, inundation was observed in this community type in the south portion of the site from 0-12" deep. Other cattail communities within the site were saturated at or near the soil surface.

Community # 16 Community Type: Carex praegracilis / Poa pratensis Acres: 0.55

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	2
Bromus inermis	2	Carex praegracilis	4
Eleocharis palustris	2	Elymus repens	2
Phalaris arundinacea	1	Phleum pratense	2
Poa palustris	1	Poa pratensis	4
Potentilla gracilis	0	Rumex crispus	0
Schedonorus pratensis	1	Schoenoplectus acutus	0
Trifolium hybridum	0	Typha latifolia	0

#### Comments:

In 2024, WT 16 contracted slightly with the wetland, as UT 8 expanded into drier areas. WT created in 2022 to document the transitional species observed along transect 4 where the wetland boundary is expanding north from the berm.

Community # 17 Community Type: Glyceria grandis / Eleocharis palustris Acres: 1.56

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Bare Ground	2
Beckmannia syzigachne	0	Deschampsia caespitosa	2
Eleocharis palustris	4	Elymus repens	0
Glyceria grandis	4	Juncus balticus	1
Phalaris arundinacea	3	Rumex crispus	1
Schoenoplectus acutus	2	Typha latifolia	3

#### Comments:

WT created in 2023. This community is present in the excavated cell in the northeast corner of the site. Inundation observed at this location in 2024, but vegetation was over five percent.

Community #	18 Community Type:	Populus balsamifera /	Acres:	<u>0.16</u>
Species	Cover class	Species	Cover class	
			,	

Openies	COVCI CIUSS	Openics	OOVER CIASS
Bromus inermis	4	Centaurea stoebe	1
Cirsium arvense	3	Elymus repens	2
Elymus trachycaulus	2	Phalaris arundinacea	4
Poa pratensis	3	Populus balsamifera	5
Silene vulgaris	0		

Comments:

Small facultative wetland community dominated by Populus balsamifera, added in 2024.

Total Vegetation Community Acreage

60.39

#### **VEGETATION TRANSECTS**

Rostad Ranch		Da	ate: 6/25/2024	
Transect Number:	: _1	Compa	ss Direction from Star	rt: <u>290</u>
Interval Data:				
Ending Station	136	Community Type:	Bromus inermis / Trifolium sp	p.
Species		Cover class	Species	Cover cla
Bromus inermis		5	Carum carvi	
Cirsium arvense		0	Dactylis glomerata	
Elymus repens		1	Melilotus albus	
Phleum pratense		2	Poa pratensis	
Schedonorus pratensis		0	Symphyotrichum ascenden	
Taraxacum officinale		1	Trifolium hybridum	
Ending Station	220	Community Type:	Juncus balticus / Carex nebra	ascensis
Species		Cover class	Species	Cover cla
Alopecurus arundinaceus		3	Carex pellita	
Carex praegracilis		2	Elymus repens	
Juncus balticus		1	Phalaris arundinacea	
Phleum pratense		1	Poa pratensis	
Schedonorus pratensis		1	Trifolium hybridum	
Trifolium pratense		1		
Ending Station	255	Community Type:	Phalaris arundinacea /	
Species		Cover class	Species	Cover cla
Agrostis stolonifera		1	Alopecurus arundinaceus	
Carex nebrascensis		1	Carex pellita	
Carex praegracilis		1	Eleocharis palustris	
Elymus repens		1	Juncus balticus	
Phalaris arundinacea		5	Poa pratensis	
Ending Station	273	Community Type:	Bromus inermis / Trifolium sp	p.
Species		Cover class	Species	Cover cla
Elymus repens		4	Elymus trachycaulus	
Phalaris arundinacea		4	Poa pratensis	

Ending Station	388 Community Type:	Phalaris arundinacea /	
Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	1
Bare Ground	1	Carex nebrascensis	1
Carex pellita	1	Carex praegracilis	1
Eleocharis palustris	1	Elymus trachycaulus	1
Juncus balticus	1	Phalaris arundinacea	5
Poa pratensis	2		
Ending Station	422 Community Type:	Glyceria grandis / Eleocharis	palustris
Species	Cover class	Species	Cover class
Bare Ground	2	Eleocharis palustris	2
Glyceria grandis	1	Juncus balticus	1
Phalaris arundinacea	3	Rumex crispus	0
Schoenoplectus acutus	0	Typha latifolia	1

#### **Transect Notes:**

No open water was observed along transect 1 in 2024. Inundation to about 1" was obseved from 360' to the end of the transect. WT 2 slightly decreased as UT 8 expanded in this eastern area of the mitigation site.

Interval Data: Ending Station	11	Community Type:	Populus balsamifera /	
	- ' '		-	Cayer alasa
Species		Cover class	Species	Cover class
<b>-</b>		0	Bromus inermis	4
Elymus repens		2	Elymus trachycaulus	2
Phalaris arundinacea		4	Poa pratensis	3
Populus balsamifera		5		
Ending Station	46	Community Type:	Alopecurus arundinaceus /	
Species		Cover class	Species	Cover class
Agrostis stolonifera		0	Alopecurus arundinaceus	1
Bare Ground		2	Bromus inermis	0
Carex nebrascensis		1	Carex pellita	2
Eleocharis palustris		1	Elymus repens	1
Elymus trachycaulus		1	Juncus balticus	3
Phalaris arundinacea		3	Poa pratensis	2
Populus balsamifera		1	·	
Ending Station	294	Community Type:	Juncus balticus / Carex nebra	ascensis
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		2	Bare Ground	1
Carex nebrascensis		3	Carex pellita	3
Carex utriculata		1	Eleocharis palustris	2
Elymus repens		1	Juncus balticus	4
Phalaris arundinacea		4	Phleum pratense	0
Poa palustris		1	Poa pratensis	3
Rumex crispus		1	Thinopyrum intermedium	0
Ending Station	425	Community Type:	Alopecurus arundinaceus /	
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		3	Bare Ground	2
Carex aquatilis		0	Juncus balticus	1
Phalaris arundinacea		5	Poa pratensis	2
Trifolium hybridum		0	·	
Ending Station	453	Community Type:	Bromus inermis / Trifolium sp	pp.
Species		Cover class	Species	Cover class
Bromus inermis		5	Cirsium arvense	0
		1	Phleum pratense	2
Phalaris arundinacea			1	_
		3	Schedonorus pratensis	0
Phalaris arundinacea Poa pratensis Taraxacum officinale		3 1	Schedonorus pratensis Thinopyrum intermedium	0

Transect Number: 2 Compass Direction from Start: 120

#### Transect Notes:

In 2024, the mapping of WT 18 increased the number of community transitions along the transect to 5.

Transect Number: 3 Compass Direction from Start: 30					
Interval Data: Ending Station	19	Community Type:	Populus balsamifera /		
Species		Cover class	Species	Cover class	
Bromus inermis		4	Centaurea stoebe	1	
Cirsium arvense		3	Elymus repens	2	
Elymus trachycaulus		2	Phalaris arundinacea	4	
Poa pratensis		3	Populus balsamifera	5	
Silene vulgaris		0			
Ending Station	22	Community Type:	Alopecurus arundinaceus /		
Species		Cover class	Species	Cover class	
Agrostis stolonifera		1	Alopecurus arundinaceus	1	
Bare Ground		1	Cirsium arvense	1	
Eleocharis palustris		1	Juncus balticus	1	
Phalaris arundinacea		4	Poa pratensis	1	
Populus balsamifera		4			
Ending Station	142	Community Type:	Juncus balticus / Carex nebr	ascensis	
Species		Cover class	Species	Cover class	
Agrostis stolonifera		1	Alopecurus arundinaceus	3	
Carex nebrascensis		2	Carex pellita	1	
Cirsium arvense		1	Eleocharis palustris	2	
Juncus balticus		4	Phalaris arundinacea	1	
Phleum pratense		1	Poa pratensis	3	
Salix exigua		1	Schedonorus pratensis	1	
Sonchus arvensis		1	Taraxacum officinale	0	
Typha latifolia		1			
Ending Station	292	Community Type:	Typha latifolia /		
Species		Cover class	Species	Cover class	
Alopecurus arundinaceus		2	Bare Ground	1	
Carex nebrascensis		2	Carex pellita	1	
Carex utriculata		2	Eleocharis palustris	1	
Glyceria grandis		1	Juncus balticus	1	
Open Water		3	Phalaris arundinacea	0	
Salix exigua					

Ending Station	320 Community Type:	Juncus balticus / Carex nebrascensis
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	2
Carex nebrascensis	2	Carex pellita	1
Carex utriculata	2	Eleocharis palustris	1
Juncus balticus	1	Phalaris arundinacea	1
Poa pratensis	1	Salix exigua	2
Typha latifolia	1		

#### **Transect Notes:**

This transect spans the preservation wetland in the south portion of the mitigation site and is composed entirely of wetland habitat. Inundation along the transect increased slightly in 2024, ranging from 0-12' deep. In 2024, the addition of WT 18 increased the total transitions along the transect to 5.

Transect Number:	r:4 Compass Direction from Start:0_				
Interval Data: Ending Station	12	Community Type:	Bromus inermis / Trifolium sp	p.	
Species		Cover class	Species	Cover class	
Alopecurus arundinaceus		1	Bromus inermis	3	
Elymus repens		1	Phalaris arundinacea	4	
Ending Station	110	Community Type:	Carex praegracilis / Poa prate	ensis	
Species		Cover class	Species	Cover class	
Alopecurus arundinaceus		1	Bromus inermis	2	
Carex praegracilis		4	Eleocharis palustris	0	
Elymus repens		2	Phalaris arundinacea	1	
Phleum pratense		1	Poa pratensis	5	
Potentilla gracilis		0	Schedonorus pratensis	0	
Trifolium hybridum		2	Typha latifolia	1	
Ending Station	412	Community Type:	Bromus inermis / Trifolium sp	p.	
Species		Cover class	Species	Cover class	
Bromus inermis		5	Camelina microcarpa	0	
Cirsium arvense		0	Elymus repens	1	
Elymus trachycaulus		1	Melilotus albus	0	
Pascopyrum smithii		0	Phleum pratense	0	
Poa pratensis		4	Symphyotrichum ascenden	1	
Taraxacum officinale		0	Thinopyrum intermedium	1	
Trifolium hybridum		3			

#### **Transect Notes:**

This transect starts on an upland berm vegetated with reed canarygrass, but lacks hydric soil development and evidence of wetland hydrology. In 2024, Alopecurus arundinaceus crept in near the start of the transect.

#### PLANTED WOODY VEGETATION SURVIVAL

#### Rostad Ranch

Planting Type	#Planted	#Alive Notes
Populus balsamifera	100	
Populus tremuloides	100	
Salix sp.	2000	

#### **Comments**

Willow stakes were planted in spring 2013. Survival was not quantitatively assessed in 2024, as the performance standard for woody vegetation was met five years post-construction. Willows in the planting zones and the preservation PSS wetland appeared healthy with minimal signs of browse. Volunteer Salix exigua and Populus balsamifera are establishing around the edges of WT 3 and WT 2 in the south portion of the site, and an additional willow community has established in the north central portion of the project area.

#### **WILDLIFE**

Were man-made nesting structures installed?	Yes
If yes, type of structure: Blue Bird Boxes	
How many?6	
Are the nesting structures being used?	Yes
Do the nesting structures need repairs?	Yes_

#### **Nesting Structure Comments:**

A bird box originally located on the fence southwest of T1-Start has been missing since 2021 and has not been replaced, so number of bird boxes at the site has been reduced. In 2024, all other bird boxes appear in good condition with little evidence of use, except for bird box #6 which appeared to be in use.

Species	#Observed	Behavior	Habitat
Bobolink	2	N, L	
Common Yellowthroat	1	L	
Mallard	1	FO	
Red-winged Blackbird	11	N	
Sandhill Crane	1	FO	
Spotted Sandpiper	1	FO	
Tree Swallow	1	F	
Turkey Vulture	1	F	
Western Meadowlark	1	L	
Wilson's Snipe	1	L	
Yellow Warbler	1	L	
Wilson's Phalarope	2	N	
Common Snipe	2	N	
Grasshopper Sparrow	1	L	
Common Raven	1	F	
Western Woood-Pewee	2	N	
Sora	2	L	
Yellow-headed Blackbird	d 2	N	
Vesper Sparrow	1	L	
<b>Bird Comments</b>			
19 bird species observed	d in 2024.		

#### **BEHAVIOR CODES**

**BP** = One of a <u>breeding pair</u> **BD** = <u>Breeding display</u> **F** = <u>Foraging</u> **FO** = <u>Flyover</u> **L** = <u>Loafing</u> **N** = <u>Nesting</u>

#### **HABITAT CODES**

AB = Aquatic bed SS = Scrub/Shrub FO = Forested UP = Upland buffer I = Island

WM = Wet meadow MA = Marsh US = Unconsolidated shore MF = Mud Flat OW = Open Water

#### **Mammals and Herptiles**

#### Species # Observed Tracks Scat Burrows Comments

Boreal Chorus Frog	3	No	No	No	Breeding display
White-tailed Deer	1	Yes	No	Yes	
Vole	1	No	Nο	No	

#### Wildlife Comments:

Evidence of wildlife on site include observations, tracks, scat, and burrows.

#### **PHOTOGRAPHS**

Take photographs of the following permanent reference points listed in the check list below. Record the direction of the photograph using a compass. When at the site for the first time, establish a permanent reference point by setting a ½ inch rebar or fencepost extending 2-3 feet above ground. Survey the location with a resource grade GPS and mark the location on the aerial photograph.

#### **Photograph Checklist:**

- ☑ One photograph for each of the four cardinal directions surrounding the wetland.
- At least one photograph showing upland use surrounding the wetland. If more than one upland exists then take additional photographs.
- At least one photograph showing the buffer surrounding the wetland.
- ☑ One photograph from each end of the vegetation transect, showing the transect.

Photo #	Latitude	Longitude	Bearing	Description		
DP01u	46.462088	-110.297784				
DP01w	46.461991	-110.297799				
DP02u	46.460208	-110.297828				
DP02w	46.460192	-110.297694				
DP03u	46.459002	-110.29501				
DP03w-a	46.459116	-110.295523				
DP03w-b	46.459035	-110.295112				
DP04u	46.460521	-110.295407				
DP04w	46.460547	-110.295467				
DP05u	46.461802	-110.2954				
DP05w	46.461808	-110.295541				
DP06u	46.462536	-110.293512				
DP06w	46.46263	-110.293554				
DP07u	46.463331	-110.291613				
DP07w	46.463414	-110.291673				
DP08u	46.463923	-110.292325				
DP08w	46.463953	-110.292255				
DP09u	46.463752	-110.293677				
DP09w	46.463716	-110.293652				
DP10u	46.463157	-110.295992				
DP10w	46.463076	-110.295922				
MW-01	46.463359	-110.295505				
Photo point 1	46.463894	-110.292697				
Photo point 10	46.461759	-110.298593				
Photo point 2	46.461612	-110.294535				
Photo point 3	46.460573	-110.294591				
Photo point 4	46.458259	-110.293701				
Photo point 5	46.458417	-110.296185	B-17	7		

Photo point 6	46.459813	-110.298179
Photo point 7	46.461119	-110.299371
Photo point 8	46.460987	-110.298118
Photo point 9	46.461106	-110.294579
Transect 1 End	46.463576102426	-110.2927263717
Transect 1 Start	46.463029103021	-110.291276
Transect 2 End	46.461978946056	-110.295094
Transect 2 Start	46.462875830304	-110.29637
Transect 3 End	46.459923761462	-110.2958697392
Transect 3 Start	46.459397471592	-110.296821
Transect 4 End	46.4629	-110.297851
Transect 4 Start	46.461803077753	-110.297953

#### Comments:

#### **ADDITIONAL ITEMS CHECKLIST**

	Hydrology
☐ ☑ line	Map emergent vegetation/open water boundary on aerial photos.  Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift es, vegetation staining, erosion, etc).
	Photos
\ \ \ \	One photo from the wetland toward each of the four cardinal directions One photo showing upland use surrounding the wetland. One photo showing the buffer around the wetland One photo from each end of each vegetation transect, toward the transect
	Vegetation
<b>V</b>	Map vegetation community boundaries
<b>V</b> (	Complete Vegetation Transects
	Soils
<b>V</b>	Assess soils
	Wetland Delineations
<b>✓</b>	Delineate wetlands according to applicable USACE protocol (1987 form or
Sup	oplement) Delineate wetland – upland boundary onto aerial photograph.
We	tland Delineation Comments
	29 acres of wetland delineated in 2024.
L	Functional Assessments
<b>✓</b> forn	Complete and attach full MDT Montana Wetland Assessment Method field ns.
Fun	nctional Assessment Comments:
-	The wetland mitigation site is rated as a category II wetland.

#### Maintenance

Were man-made nesting structure installed at this site? Yes				
If yes, do they need to be repaired? Yes				
If yes, describe the problems below and indicate if any actions were taken to remedy the problems				
Were man-made structures built or installed to impound water or control water flow				
into or out of the wetland? Yes				
If yes, are the structures in need of repair? No				
If yes, describe the problems below.				
The birdbox near the start of T-1 is missing and could be replaced.				

Project/Site: Rostad 2024		City/Co	ounty	: Meaghe	r County	Sampling	Date: 2024	-06-25
Applicant/Owner: MDT	State: Montana Sampling Point: DP01u							lu
Investigator(s): McEldowney		Section	n, To	wnship, Raı	nge: S12 T8N R11E			
					convex, none): Linear		Slope (%	): <u>0</u>
Subregion (LRR): E 46	Lat: 46.	4620	88		Long: -110.297784		Datum: N	AD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats co	mplex, 2 to	o 4 pe	erce	nt slopes	NWI classific	ation: No	ne	
Are climatic / hydrologic conditions on the site typical for the	is time of yea	ar? Ye	es	✓ No_	(If no, explain in R	emarks.)		
Are Vegetation, Soil, or Hydrology	-				Normal Circumstances" p		Yes _ 🗸	No
Are Vegetation, Soil, or Hydrology					eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map				g point le	ocations, transects	, impor	tant featur	es, etc.
Hydrophytic Vegetation Present? Yes I	No 🔽		le th	e Sampled	Area			
Hydric Soil Present? Yes I	No			in a Wetlan		No	<b>v</b>	
Hydrophytic Vegetation Present? Yes I Hydric Soil Present? Yes I Wetland Hydrology Present? Yes I	No						_	
Remarks:  Upland sample point in the northwe	st portio	on of	f th	e site.				
VEGETATION – Use scientific names of pla	Absolute	Domi	inant	Indicator	Dominance Test work	shoot.		
Tree Stratum (Plot size: 30 ft r	% Cover				Number of Dominant S			
1					That Are OBL, FACW,		0	(4)
2					(excluding FAC-):			_ (A)
3					Total Number of Domin Species Across All Stra		2	(B)
4								_ (D)
Sapling/Shrub Stratum (Plot size: 15 ft r )					Percent of Dominant Sp That Are OBL, FACW,		0.00	_ (A/B)
1					Prevalence Index wor	ksheet:		
2 3					Total % Cover of:		Multiply by:	
4						x 1		
5.					FACW species 0			
		= Tota	al Co	ver	FAC species 0			
Herb Stratum (Plot size: 5 ft r	60		,	FACU	FACU species 90 UPL species 0			
1. Poa pratensis 2. Elymus repens	30		,	FACU	Column Totals: 90		360	(B)
Elymus repens     3.				1700				(B)
4					Prevalence Index	= B/A =	4.00	
5.					Hydrophytic Vegetation			
6.					1 - Rapid Test for I		c Vegetation	
7					2 - Dominance Tes			
8					3 - Prevalence Inde			nnortina
9					data in Remarks	s or on a s	s (Flovide st	t)
10	00				Problematic Hydro	phytic Veç	getation <sup>1</sup> (Expl	ain)
Woody Vine Stratum (Plot size: 30 ft r		= Tota			<sup>1</sup> Indicators of hydric soi be present, unless distu			must
1 2					Hydrophytic			
% Bare Ground in Herb Stratum 10					Vegetation	s	No 🗸	
Remarks:					<u> </u>			
Upland sample point dominated by	FACU ve	eget	ati	on.				

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SOIL Sampling Point: DP01u

Profile Desc	ription: (Describe	to the depth	needed to docu	ment the	indicator	or confirr	m the absence of indicators.)	
Depth	Matrix		Redo	x Feature	s		_	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 7	10YR 3/2	100		_			Sandy Clay	
7 - 16	10YR 4/2	100					Sandy Clay	-
	· · · · · · · · · · · · · · · · · · ·				· ——			
	-				· ——		<u>.                                    </u>	
					<u> </u>			
				_				
-								
_								
	-				. —			
1							2.	
	oncentration, D=Dep					ed Sand G		
-	Indicators: (Applic	cable to all LF					Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	` '		Sandy	-			1 cm Muck (A9) (LRR I, J)	
-	oipedon (A2)			Redox (St			Coast Prairie Redox (A16) (LRR F, G, H)	
Black Hi	` ,			d Matrix (			Dark Surface (S7) (LRR G)	
	en Sulfide (A4) d Layers (A5) ( <b>LRR</b>	E)		Gleyed M	neral (F1)		High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)	
	ick (A9) (LRR F, G,	•		ed Matrix (	, ,		Reduced Vertic (F18)	
	d Below Dark Surfac			Dark Surfa	,		Red Parent Material (TF2)	
	ark Surface (A12)	,			urface (F7)	)	Very Shallow Dark Surface (TF12)	
_	Mucky Mineral (S1)			Depressio			Other (Explain in Remarks)	
2.5 cm N	Mucky Peat or Peat	(S2) ( <b>LRR G</b> ,	<b>H</b> ) High Pl	ains Depr	essions (F	16)	<sup>3</sup> Indicators of hydrophytic vegetation and	
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	RA 72 &	73 of LRR	<b>H</b> )	wetland hydrology must be present,	
							unless disturbed or problematic.	
Restrictive I	Layer (if present):							
Type:			<u>—</u>					
Depth (in	ches):						Hydric Soil Present? Yes No	_
Remarks:								
No bydr	io opil indigo	toro obo	arvad					
NO Hydr	ic soil indica	tors obse	ervea.					
HYDROLO	GY							
Wetland Hy	drology Indicators:							
Primary India	cators (minimum of o	one required; o	check all that app	ly)			Secondary Indicators (minimum of two requ	uired)
Surface	Water (A1)		Salt Crust	(B11)			Surface Soil Cracks (B6)	
	iter Table (A2)		Aquatic In		es (B13)		Sparsely Vegetated Concave Surface (	(B8)
Saturation			Hydrogen				Drainage Patterns (B10)	
Water M			Dry-Seas				Oxidized Rhizospheres on Living Roots	s (C3)
Sedimer	nt Deposits (B2)		Oxidized					
Drift Dep	. , ,			not tilled		· ·	Crayfish Burrows (C8)	
-	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	1)	Saturation Visible on Aerial Imagery (C	(9)
Iron Dep	, ,		Thin Mucl			•	Geomorphic Position (D2)	,
	on Vis ble on Aerial	Imagery (B7)	Other (Ex		. ,		FAC-Neutral Test (D5)	
	tained Leaves (B9)	<b>3</b> , ,			,		Frost-Heave Hummocks (D7) (LRR F)	)
Field Obser								
Surface Wat	er Present?	res No	Depth (ir	ches):				
Water Table			Depth (ir					
Saturation P			Depth (ir				tland Hydrology Present? Yes No	<b>/</b>
(includes car	oillary fringe)			•				
	corded Data (stream	n gauge, moni	toring well, aerial	photos, p	evious ins	pections),	), if available:	
Remarks:								
No ovid	ongo ofstl	and bud-	مامصد مامد -	ru a				
TINO evide	ence of wetla	ano nvor	OIOUV ODSE	uvea				
			0.09, 0.000	ı voa.				

Project/Site: Rostad 2024	(	City/County	. Meaghe	er County	Sampling Date: 2024-06-25
		-			Sampling Point: DP01w
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): 0
Subregion (LRR): E 46					
Soil Map Unit Name: 854B - Varney-Coyoteflats com					
Are climatic / hydrologic conditions on the site typical for this					<u> </u>
Are Vegetation, Soil, or Hydrology si					
Are Vegetation, Soil, or Hydrologyn					
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes   No  No  No  No  No  No  No  No  No  N	o		ne Sampled nin a Wetlar		No
Wetland sample point in the central-	northea	ast por	tion of	the site.	
VEGETATION – Use scientific names of plant	ts.				
Tree Stratum (Plot size: 30 ft r		Dominant		Dominance Test work	sheet:
1	% Cover			Number of Dominant Sp That Are OBL, FACW, of	•
2.				(excluding FAC-):	<u>2</u> (A)
3.				Total Number of Domin	
4				Species Across All Stra	ta: <u>3</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total Co		Percent of Dominant Sp That Are OBL, FACW, o	
1				Prevalence Index world	ksheet:
3.				_	Multiply by:
4					x 1 = 0
5					x 2 = 90
5 ft w		= Total Co	ver		x 3 = 0 $x 4 = 200$
Herb Stratum (Plot size: 5 ft r  1. Poa pratensis	45	~	FACU	FACU species 50 UPL species 1	
2 Carex praegracilis	25	<u> </u>	FACW	Column Totals: 96	·
3. Alopecurus arundinaceus	20		FACW		
4. Elymus repens	5		FACU	Prevalence Index	
5. Bromus inermis	1		UPL	Hydrophytic Vegetation	
6				1 - Rapid Test for H	• • •
7				2 - Dominance Tes 3 - Prevalence Inde	
8	·				Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks	s or on a separate sheet)
10	~~			Problematic Hydror	phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1		= Total Co		<sup>1</sup> Indicators of hydric soil be present, unless distu	l and wetland hydrology must urbed or problematic.
2 % Bare Ground in Herb Stratum		= Total Co	ver	Hydrophytic Vegetation Present? Yes	s No
Remarks:  Data point passes dominance test fo				ition.	

SOIL Sampling Point: DP01w

Profile Desc	ription: (Describe	to the de	oth needed to docur	nent the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix			•				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup> _	Loc <sup>2</sup>		Remarks
0 - 6	10YR 3/2	95	N 3/0	5	_ <u>D</u>	М	Sandy Clay	Sulfidic odor in depletions.
6 - 16	10YR 4/2	98	10YR 4/4	2	С	М	Sandy Clay	
-								
	-							
							<del></del>	
							<u> </u>	
			=Reduced Matrix, CS			ed Sand G		ation: PL=Pore Lining, M=Matrix.
_		cable to all	LRRs, unless other					for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1) pipedon (A2)		Sandy (	sieyed ivi Redox (S:				luck (A9) ( <b>LRR I, J</b> ) Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black Hi				d Matrix (				urface (S7) (LRR G)
	en Sulfide (A4)				ineral (F1)		<del></del>	lains Depressions (F16)
	d Layers (A5) (LRR				latrix (F2)		(LR	R H outside of MLRA 72 & 73)
	ick (A9) ( <b>LRR F, G</b> ,		<u>✓</u> Deplete					ed Vertic (F18)
	d Below Dark Surfa ark Surface (A12)	ce (A11)	<del></del>	Dark Surf	. ,			arent Material (TF2) hallow Dark Surface (TF12)
	fucky Mineral (S1)			Depression	urface (F7)	1		Explain in Remarks)
	Mucky Peat or Peat	(S2) ( <b>LRR</b>			ressions (F	16)		of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) (LRR F	) (ML	RA 72 &	73 of LRR	<b>H</b> )	wetland	hydrology must be present,
							unless	disturbed or problematic.
	Layer (if present):							
								5 10 V V V
. ,	ches):						Hydric Soil	Present? Yes V No No
Remarks:								
Sulfidic	odor and de	pleted	matrix obser	ved.				
HYDROLO	GY							
Wetland Hyd	drology Indicators	:						
Primary Indic	cators (minimum of	one require	ed; check all that appl	y)			<u>Seconda</u>	ry Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust				Surf	ace Soil Cracks (B6)
_	iter Table (A2)		Aquatic In					rsely Vegetated Concave Surface (B8)
<u>✓</u> Saturation			<u>✓</u> Hydrogen					nage Patterns (B10)
	larks (B1)				Table (C2)			lized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized F			ing Roots		here tilled)
	oosits (B3) at or Crust (B4)		(where i	n <b>ot tilled</b> of Reduc		1)		rfish Burrows (C8) Iration Visible on Aerial Imagery (C9)
_	oosits (B5)		Thin Muck		,	•)		morphic Position (D2)
-	on Vis ble on Aerial	Imagery (E						-Neutral Test (D5)
	tained Leaves (B9)	0 ) (	, <u> </u>		,			t-Heave Hummocks (D7) (LRR F)
Field Obser	vations:							
Surface Water	er Present?	Yes	No Depth (in	ches):		_		
Water Table			No Depth (in					
Saturation P		Yes 🔽	No Depth (in	ches): 0		Wet	land Hydrology	/ Present? Yes No
(includes cap		m dalide m	onitoring well, aerial	nhotos n	revious ins	nections)	if available:	
2 3301130 1101	Data (otrodi	55490, 111	Time in a mon, deridi	μσισσ, μ		r 5500110)	, a. anabio.	
Remarks:								
	to the sell a	fooo oo	l biab watar tab	lo oro	ovido::::	of	tland budget	agy at this data paint
Saturated	to the son sur	race and	ı nıgn water tab	ie are 6	evidence	or we	uana nyarol	ogy at this data point.

Project/Site: Rostad 2024	(	City/C	ounty	Meaghe	r County	Sampling	Date: 2	2024-06	-25
Applicant/Owner: MDT		-	-		State: Montana	_			
Investigator(s): McEldowney	;	Section	on, To	wnship, Rai	nge: S13 T8N R11E		_		
Landform (hillslope, terrace, etc.): Valley Floor					=		Slop	oe (%): 10	)
Subregion (LRR): E 46									
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb									
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation, Soil, or Hydrologys	•					•	es 🗸	, No	
Are Vegetation, Soil, or Hydrology n					eded, explain any answe				
SUMMARY OF FINDINGS – Attach site map								atures, e	etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	o			e Sampled in a Wetlar		No _			
Upland sample point in western port		site.							
VEGETATION – Use scientific names of plan		Dom	inant	Indicator	Deminence Test werl	roh o ot:			
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )  1 2		Spe	cies?	Status	Dominance Test work  Number of Dominant S That Are OBL, FACW, (excluding FAC-):	pecies or FAC	1	( <i>A</i>	<b>A</b> )
3					Total Number of Domir Species Across All Stra		4	(B	3)
Sapling/Shrub Stratum (Plot size: 15 ft r )					Percent of Dominant S That Are OBL, FACW,		25.00	(A	√B)
2.					Prevalence Index wor	ksheet:			
3.					Total % Cover of:				
4						x 1			
5					FACW species 10				
Herb Stratum (Plot size: 5 ft r )		= Tot	al Cov	er	FAC species 0 FACU species 42				
1. Poa pratensis	30		/	FACU	UPL species 12		= 60		
2. Bromus inermis	10			UPL	Column Totals: 64	(A)	248		(B)
3. Melilotus officinalis	10	•		FACU				\	,
Phalaris arundinacea	10	•	/	FACW	Prevalence Index				
5. Carum carvi	2			UPL	Hydrophytic Vegetation				
6. Trifolium hybridum	2			FACU	1 - Rapid Test for I		: Vegeta	ation	
7					2 - Dominance Tes				
8					3 - Prevalence Ind 4 - Morphological /		1 (Drovi	do ounnor	tina
9					data in Remark	s or on a se	eparate	sheet)	ung
10					Problematic Hydro	phytic Vege	etation <sup>1</sup>	(Explain)	
Woody Vine Stratum (Plot size: 30 ft r )  1			al Cov		<sup>1</sup> Indicators of hydric so be present, unless dist				st
2.					Hydrophytic				
% Bare Ground in Herb Stratum 36				er	Vegetation Present? Ye	es	No		
Upland sample point dominated by a is a transition area.	variety	y of	spe	ecies wi	ith different ind	icator s	status	ses. Tł	his

US Army Corps of Engineers B-25 Great Plains – Version 2.0

SOIL Sampling Point: DP02u

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confire	n the absence of in	ndicators.)
Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type <sup>1</sup> I								
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 12	10YR 4/2	100					Sandy Clay	
12 - 16	10YR 3/1	97	10YR 4/6	3	С	М	Sandy Clay Loam	
-								
				-				
	_							
			=Reduced Matrix, CS			d Sand G		n: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applic	able to all	LRRs, unless other	rwise not	ted.)		Indicators for F	Problematic Hydric Soils <sup>3</sup> :
Histosol	` ,		Sandy (	-	. ,			(A9) ( <b>LRR I, J</b> )
	ipedon (A2)		Sandy F					ie Redox (A16) ( <b>LRR F, G, H</b> )
Black His				d Matrix (S	,			ce (S7) (LRR G)
	n Sulfide (A4) I Layers (A5) ( <b>LRR</b> I	F)		Gleyed M	neral (F1)		-	Depressions (F16) outside of MLRA 72 & 73)
	ck (A9) ( <b>LRR F, G</b> ,	•	-	d Matrix (			Reduced V	,
	Below Dark Surfac			Dark Surfa				: Material (TF2)
-	rk Surface (A12)	, ,	Deplete	d Dark Si	urface (F7)	ı		w Dark Surface (TF12)
Sandy M	lucky Mineral (S1)		Redox I	Depressio	ns (F8)			ain in Remarks)
	lucky Peat or Peat (	` ' `	. , —	ains Depr	essions (F	16)	<sup>3</sup> Indicators of hy	drophytic vegetation and
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H)								drology must be present,
Described to 1							unless distu	urbed or problematic.
	ayer (if present):							
Type:								
•	ches):						Hydric Soil Pres	sent? Yes No
Remarks:								
No hydri	c soil indicat	tors ob	served in the	e uppe	er 12 in	ches c	of the soil pro	ofile.
HYDROLO(	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	ators (minimum of o	ne require	d; check all that appl	y)			Secondary In	dicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surface S	Soil Cracks (B6)
	ter Table (A2)		Aquatic In		es (B13)			Vegetated Concave Surface (B8)
Saturation	on (A3)		Hydrogen	Sulfide O	dor (C1)		Drainage	e Patterns (B10)
Water M	arks (B1)		Dry-Seaso	n Water <sup>-</sup>	Table (C2)		Oxidized	Rhizospheres on Living Roots (C3)
Sedimen	t Deposits (B2)		Oxidized F	Rhizosphe	eres on Liv	ing Roots	(C3) (where	e tilled)
Drift Dep	osits (B3)		(where	not tilled	)		Crayfish	Burrows (C8)
Algal Ma	t or Crust (B4)		Presence	of Reduce	ed Iron (C4	1)	Saturatio	on Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)		Thin Muck	Surface	(C7)		Geomorp	phic Position (D2)
Inundation	on Vis ble on Aerial	lmagery (B	7) Other (Exp	olain in Re	emarks)		FAC-Net	utral Test (D5)
Water-St	tained Leaves (B9)						Frost-He	ave Hummocks (D7) (LRR F)
Field Observ								
Surface Water	er Present?	'es	No Depth (in	ches):		_		
Water Table	Present? Y	'es	No <u> </u>	ches):		_		
Saturation Pr		'es	No 🔽 Depth (in	ches):		Wet	land Hydrology Pre	esent? Yes No
(includes cap		anuae m	onitoring well, aerial	nhotos s	rovious iss	noctions)	if available:	
Describe Ker	orded Dala (Siledii	ı gauge, III	ormorning well, aerial	ριτοιοδ, μι	CVIOUS IIIS	pecii0118),	, ii avaliabit.	
Remarks:								
	_			_				
No evide	ence of wetla	and hy	drology obse	rved.				

Project/Site: Rostad 2024	(	City/Coun	<sub>ty:</sub> Meaghe	er County	Sampling Date: 2024-06-25
		-	-		Sampling Point: DP02w
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): 5
Subregion (LRR): E 46					
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabl					
Are climatic / hydrologic conditions on the site typical for thi					-
Are Vegetation, Soil, or Hydrologys					
Are Vegetation, Soil, or Hydrology r					
SUMMARY OF FINDINGS – Attach site map					
Hydric Soil Present? Yes N	lo lo lo		the Sampled		No
Wetland sample point in eastern por		the sit	e.		
VEGETATION – Use scientific names of plan	its.				
Tree Stratum (Plot size: 30 ft r )	% Cover	Species		Dominance Test works  Number of Dominant Sp That Are OBL, FACW, of (excluding FAC-):	pecies
2				Total Number of Domina Species Across All Strat	ant
Sapling/Shrub Stratum (Plot size: 15 ft r )				Percent of Dominant Sp That Are OBL, FACW, o	
2.				Prevalence Index work	
3.				Total % Cover of:	
4					x 1 = 0
5					x 2 = 140 x 3 = 0
Herb Stratum (Plot size: 5 ft r		= Total C	over		$x = \frac{3}{20}$
Herb Stratum (Plot size: 3101 )  1 Juncus balticus	35	~	FACW	UPL species 0	
2. Phalaris arundinacea	25	~	FACW	Column Totals: 75	
3. Alopecurus arundinaceus	10		FACW		
4. Poa pratensis	5		FACU	Prevalence Index	
5				Hydrophytic Vegetatio	
6				<ul><li>✓ 1 - Rapid Test for H</li><li>✓ 2 - Dominance Test</li></ul>	
7				✓ 3 - Prevalence Inde	
8				<del></del>	daptations <sup>1</sup> (Provide supporting
9				data in Remarks	s or on a separate sheet)
10	7-			Problematic Hydrop	ohytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1		= Total C		<sup>1</sup> Indicators of hydric soil be present, unless distu	and wetland hydrology must rbed or problematic.
2 % Bare Ground in Herb Stratum 25		= Total C		Hydrophytic Vegetation Present? Yes	s No
PEM, dominated by FACW vegetation					

SOIL Sampling Point: DP02w

		to the dep	th needed to docur			or confirm	n the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Featur	es Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 6	10YR 4/2	100	Color (molecy				Sandy Clay	
6 - 16	10YR 4/2	88	10YR 4/4	2	C	PL / M	Sandy Clay	Saturation at 8
6 - 16			10YR 6/2	10		M	Sandy Clay	
			10111 0/2			141	Odridy Oldy	
					_			
	-	<del></del>						
	-							
			=Reduced Matrix, CS			ed Sand Gr		cation: PL=Pore Lining, M=Matrix.
-		able to all	LRRs, unless othe					for Problematic Hydric Soils <sup>3</sup> :
Histosol	oipedon (A2)			эleyea iv Redox (S	latrix (S4)			/luck (A9) ( <b>LRR I, J</b> ) Prairie Redox (A16) ( <b>LRR F, G, H</b> )
-	stic (A3)		-	d Matrix (			· <del></del>	Surface (S7) (LRR G)
	en Sulfide (A4)		Loamy	Mucky M	ineral (F1)			Plains Depressions (F16)
	d Layers (A5) (LRR I			-	Matrix (F2)		,	RR H outside of MLRA 72 & 73)
	ıck (A9) ( <b>LRR F, G,</b> l d Below Dark Surfac		<u>✓</u> Deplete		(F3) face (F6)			ed Vertic (F18) arent Material (TF2)
-	ark Surface (A12)	e (ATT)			Surface (F7	)		Shallow Dark Surface (TF12)
	lucky Mineral (S1)		,	Other	(Explain in Remarks)			
	Mucky Peat or Peat (		16)		of hydrophytic vegetation and			
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H)								d hydrology must be present, disturbed or problematic.
Restrictive I	Layer (if present):						unicss	disturbed of problematic.
	,							
Depth (in							Hydric Soil	Present? Yes V No No
Remarks:								
Denlete	d matrix in se	econd I	norizon					
Depicte	a matrix in 50	Jeona i	10112011.					
HYDROLO	GY							
	drology Indicators:							
_			d; check all that appl	v)			Seconda	ary Indicators (minimum of two required)
-	Water (A1)		Salt Crust					face Soil Cracks (B6)
	iter Table (A2)		Aquatic In	. ,	es (B13)			rsely Vegetated Concave Surface (B8)
✓ Saturation	on (A3)		Hydrogen	Sulfide C	Odor (C1)		Drai	inage Patterns (B10)
Water M	larks (B1)		Dry-Seaso	on Water	Table (C2)	)	Oxid	dized Rhizospheres on Living Roots (C3)
·	nt Deposits (B2)		Oxidized F			ing Roots		vhere tilled)
	posits (B3)		,	not tilled	,	4)		yfish Burrows (C8)
_	at or Crust (B4) posits (B5)		Presence Thin Muck		•	4)		uration Visible on Aerial Imagery (C9) morphic Position (D2)
	on Vis ble on Aerial	lmagery (B						C-Neutral Test (D5)
	tained Leaves (B9)						· <del></del>	st-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Obser	vations:							
Surface Wat	er Present? Y	'es	No V Depth (in	ches):				
Water Table			No Depth (in					
Saturation P		es 🔽	No Depth (in	ches): <u>8</u>		Wetl	and Hydrolog	y Present? Yes V No No
(includes cap Describe Re		gauge, mo	onitoring well, aerial	photos, p	revious ins	spections),	if available:	
	·	. •	-	·		,		
Remarks:								
Site is sat	urated at 8 incl	hes nas	ses the FAC-No	eutral t	est and	l is in the	e correct a	eomorphic position and so has
wetland h		, pas	JUJ GIOT AO IN	Jaciai	.550, 0110		c contect g	comorpino posición ana so nas
WCtiana n	yarology.							

Project/Site: Rostad 2024	(	City/Cou	<sub>nty:</sub> Meaghe	er County	Sampling Date: 2024-06-25
		•	•		Sampling Point: DP03u
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor				-	Slone (%): 5
Subregion (LRR): E 46					
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb				=	
Are climatic / hydrologic conditions on the site typical for this				<u></u>	
Are Vegetation, Soil, or Hydrologysi					
Are Vegetation, Soil, or Hydrologyna					
SUMMARY OF FINDINGS – Attach site map s	showing	sampl	ling point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present?         Yes			the Sampled		No <u> </u>
Remarks:	<u></u>				
Upland sample point at the south end	d of the	cita			
	J OI THE	Sile.			
VECETATION . Her existific names of plant					
VEGETATION – Use scientific names of plant		Damina		Daminanaa Taat wada	ab a at
Tree Stratum (Plot size: 30 ft r			ant Indicator s? Status	Dominance Test work  Number of Dominant Si	
1				That Are OBL, FACW,	or FAC
2				(excluding FAC-):	<u>U</u> (A)
3				Total Number of Domin	
4				Species Across All Stra	ta: <u>2</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total (	Cover	Percent of Dominant Sp That Are OBL, FACW, of	
1					
2				Prevalence Index work	ksheet: Multiply by:
3					x 1 = 0
4					x 2 = 4
5		- Total (			x 3 = 0
Herb Stratum (Plot size: 5 ft r		= Total (	Jovei		x 4 = <u>276</u>
1. Poa pratensis	45		FACU	UPL species 25	
2. Carum carvi	15		UPL	Column Totals: 96	(A) <u>405</u> (B)
3. Bromus inermis Trifolium hybridum	10		UPL	Prevalence Index	= B/A = 4.21
5. Dactylis glomerata	<u>10</u> 5	-	FACU FACU	Hydrophytic Vegetation	<u> </u>
6 Taraxacum officinale	5		FACU	1 - Rapid Test for H	Hydrophytic Vegetation
7 Phleum pratense	3		FACU	2 - Dominance Tes	t is >50%
8 Phalaris arundinacea	2		FACW	3 - Prevalence Inde	
9. Cirsium arvense	1		FACU	4 - Morphological A	Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
10					phytic Vegetation <sup>1</sup> (Explain)
30 ft r	96	= Total (	Cover		I and wetland hydrology must
Woody Vine Stratum (Plot size: 30 ft r )  1				be present, unless distu	
2.				Hydrophytic	
		= Total (	Cover	Vegetation	<b>V</b>
% Bare Ground in Herb Stratum 4				Present? Yes	s No
Remarks:					
Upland sample point dominated by F	ACU ve	egeta	tion.		

SOIL Sampling Point: DP03u

Profile Desc	ription: (Describe	to the depth	needed to docum	nent the i	ndicator	or confirn	n the absence of i	ndicators.)	
Depth	Matrix	Redo	x Feature:	s					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks	
0 - 16	10YR 3/2	100							
				-					
	-								
-									
	-								
-									
1Type: C=Ce	neestration D=Der	olotion DM-D	laduand Matrix, CC		d or Coots	d Cond C	roino <sup>2</sup> l contin	n. DI -Doro Lining M-Motr	
	ncentration, D=Dep					a Sana G		n: PL=Pore Lining, M=Matr Problematic Hydric Soils <sup>3</sup>	
-		able to all Li						-	•
Histosol			Sandy C	-				( (A9) (LRR I, J)	
	pipedon (A2)			Redox (S5				rie Redox (A16) (LRR F, G,	H)
Black His	, ,			Matrix (S				ace (S7) (LRR G)	
	n Sulfide (A4)	<b>-</b> \		Mucky Mir				s Depressions (F16) I outside of MLRA 72 & 73	
	Layers (A5) (LRR			Gleyed Ma			`	·	
	ck (A9) ( <b>LRR F, G,</b> I Below Dark Surfac			d Matrix (I Dark Surfa	,			/ertic (F18) it Material (TF2)	
	rk Surface (A12)	æ (ATT)			rface (F7)			ow Dark Surface (TF12)	
	lucky Mineral (S1)			Dark od Depressio		,		plain in Remarks)	
	lucky Peat or Peat	(S2) (I RR G			essions (F	16)		ydrophytic vegetation and	
	cky Peat or Peat (S				73 of LRR			drology must be present,	
0 0	ony i dat of i dat (o	o, ( <b>=</b> :::: )	(		0 0. 2	• • • •	-	turbed or problematic.	
Restrictive L	ayer (if present):						1	and an production	
Type:	and the processing								
· · · ·							Undria Cail Dra	namt? Van Na	<b>/</b>
	ches):						Hydric Soil Pre	esent? Yes No	
Remarks:									
Soil is m	oist. No hyd	ric soil in	dicators ob	serve	d.				
UVDDOLO	CV								
HYDROLO									
Wetland Hyd	drology Indicators:	:							
Primary Indic	ators (minimum of o	one required;	check all that apply	/)			Secondary I	ndicators (minimum of two re	equired)
Surface	Water (A1)		Salt Crust	(B11)			Surface	Soil Cracks (B6)	
High Wa	ter Table (A2)		Aquatic Inv	ertebrate	s (B13)		Sparsel	y Vegetated Concave Surfac	ce (B8)
Saturatio	on (A3)		Hydrogen	Sulfide Od	dor (C1)		Drainag	e Patterns (B10)	
	arks (B1)		Dry-Seaso				_	d Rhizospheres on Living Ro	oots (C3)
· <del></del>	it Deposits (B2)		Oxidized F		, ,		<del></del>	e tilled)	( )
	oosits (B3)			ot tilled)				Burrows (C8)	
	t or Crust (B4)		Presence	,	d Iron (C/	1)		on Visible on Aerial Imagery	(C0)
	osits (B5)		Thin Muck		•	<del>"</del> )		phic Position (D2)	(03)
	` '	Imagani (DZ)							
	on Vis ble on Aerial	imagery (B7)	Other (Exp	iain in Re	marks)			eutral Test (D5)	
	tained Leaves (B9)					1	Frost-H	eave Hummocks (D7) (LRR	F)
Field Observ									
Surface Water			Depth (inc						
Water Table	Present?	/es No	Depth (inc	ches):					
Saturation Pr	resent?	/es No	Depth (inc	ches):		Wetl	and Hydrology Pr	esent? Yes No	
(includes cap	oillary fringe)					_			
Describe Red	corded Data (stream	n gauge, moni	toring well, aerial p	photos, pr	evious ins	pections),	if available:		
Remarks:									
No ovida	anno of week	and huds	ology obse	rvod					
ino evide	ence of wetla	anu nydr	ology obse	vea.					
							· · · · · · · · · · · · · · · · · · ·		

Project/Site: Rostad 2024	(	City/Co	ounty	Meaghe	r County	Sampling	Date:	2024-	-06-25
Applicant/Owner: MDT		-	-		State: Montana				
Investigator(s): E Reynaud		Section	n, To	wnship, Rai	nge: S13 T8N R11E				
Landform (hillslope, terrace, etc.): Valley Floor					=	е	Slc	ope (%):	1
Subregion (LRR): E 46									
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb									
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	es'	No	(If no, explain in R	emarks.)			
Are Vegetation, Soil, or Hydrologys	ignificantly	disturb	ed?	Are "	Normal Circumstances" p	resent?	Yes	✓ N	o
Are Vegetation, Soil, or Hydrologyn					eded, explain any answe				
SUMMARY OF FINDINGS - Attach site map					ocations, transects	, import	tant fe	eature	s, etc.
Wetland Hydrology Present? Yes No Remarks:	o		with	e Sampled in a Wetlar	nd? Yes <u></u>	No .		<u>-</u>	
Sample point taken within an inunda		a.							
VEGETATION – Use scientific names of plant	Absolute	Domi	inant	Indicator	Dominance Test work	shoot:			
Tree Stratum (Plot size: 30 ft r )  1 2	% Cover	Spec	ies?	Status	Number of Dominant S That Are OBL, FACW, (excluding FAC-):	pecies or FAC	2		(A)
3					Total Number of Domin Species Across All Stra		2		(B)
Sapling/Shrub Stratum (Plot size: 15 ft r )	40	= Tota		er FACW	Percent of Dominant State That Are OBL, FACW,		100.0	0	(A/B)
1. Salix exigua	40				Prevalence Index wor	ksheet:			
2					Total % Cover of:			ly by:	_
4						x 1			_
5.					FACW species 130				_
F 44 7	40	= Tota	l Cov	er	FAC species 0				_
Herb Stratum (Plot size: 5 ft r  Juncus balticus	70	,	,	FACW	FACU species 0 UPL species 0		1 = <u>0</u> 5 = 0		_
2. Alopecurus arundinaceus	10			FACW	UPL species 0 Column Totals: 140		270		— (B)
3. Phalaris arundinacea	10			FACW			· <u></u>	<u>-</u>	_ (D)
4. Carex utriculata	5			OBL	Prevalence Index	•			_
5. Carex nebrascensis	5			OBL	Hydrophytic Vegetation				
6.					1 - Rapid Test for I		c Veget	tation	
7					2 - Dominance Tes				
8					3 - Prevalence Inde				
9					4 - Morphological A data in Remarks	s or on a s	eparate	nae sup e sheet)	porting
10					Problematic Hydro	phytic Veg	etation	1 (Expla	in)
Woody Vine Stratum (Plot size: 30 ft r )  1		= Tota			<sup>1</sup> Indicators of hydric soi be present, unless distu				nust
2.					Hydrophytic		_	_	_
		= Tota	I Cov	er	Vegetation	s_ 🗸	Na		
% Bare Ground in Herb Stratum	_				Present? Ye	s <u> </u>	No _		
Evidence of hydrophytic vegetation itest.	include	s a p	oos	itive ra	pid test and a p	ositive	don	ninan	ice

US Army Corps of Engineers B-31 Great Plains – Version 2.0

SOIL Sampling Point: DP03w-a

Profile Desc	ription: (Describe	e to the dep	th needed to docur	nent the	indicator	or confir	m the absence of inc	licators.)
Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type <sup>1</sup>								
			Color (moist)	%	Type <sup>1</sup>	_Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 8	10YR 3/1	100					Clay Loam	
8 - 16	10YR 5/1	60	10YR 4/6	10	<u>C</u>	M	Sandy Clay Loam	
8 - 16	10YR 3/1	30						
-								
-								
	-		-			-		
	-				<del></del>			
							·	
1								
			=Reduced Matrix, CS LRRs, unless other			d Sand G		PL=Pore Lining, M=Matrix.  coblematic Hydric Soils <sup>3</sup> :
		cable to all						•
Histosol	oipedon (A2)		Sandy ( Sandy F				1 cm Muck (A	Redox (A16) ( <b>LRR F, G, H</b> )
-	stic (A3)			d Matrix (			Dark Surface	
<u>✓</u> Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	ineral (F1)			Depressions (F16)
	d Layers (A5) ( <b>LRR</b>	•			latrix (F2)		,	utside of MLRA 72 & 73)
	ick (A9) (LRR F, G		<u>✓</u> Deplete		. ,		Reduced Ve	•
	d Below Dark Surfa ark Surface (A12)	ce (ATT)	_	Dark Surf	ace (F6) urface (F7)		Red Parent I	valenar (1F2) v Dark Surface (TF12)
	fucky Mineral (S1)			Depression	` '			in in Remarks)
2.5 cm N	Mucky Peat or Peat	(S2) ( <b>LRR</b>			essions (F	16)		rophytic vegetation and
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H)							•	ology must be present,
Destrictive	over (if present).						unless distur	bed or problematic.
	Layer (if present):							
, · ·	ches):						Hydric Soil Prese	ent? Yes 🗸 No
Remarks:							Tryuno com ricos	10310
Promine	nt redoximo	orphic c	oncentration	s com	ımon w	ithin t	the depleted r	natrix.
HYDROLO								
_	drology Indicators							
	•	one require	d; check all that appl	•			·	icators (minimum of two required)
<u>✓</u> Surface			Salt Crust					oil Cracks (B6)
	iter Table (A2)		Aquatic In					/egetated Concave Surface (B8)
✓ Saturation	on (A3) larks (B1)		✓ Hydrogen  Dry-Seaso					Patterns (B10) Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized F					
·	posits (B3)		' <del></del>	not tilled		ing rtooto	Crayfish B	,
	at or Crust (B4)		Presence			1)		Visible on Aerial Imagery (C9)
_	oosits (B5)		Thin Muck	Surface	(C7)			nic Position (D2)
Inundati	on Vis ble on Aerial	Imagery (B	7) Other (Exp	olain in R	emarks)		FAC-Neut	ral Test (D5)
Water-S	tained Leaves (B9)						Frost-Hea	ve Hummocks (D7) (LRR F)
Field Obser				_				
Surface Wat			No Depth (in			_		
Water Table			No Depth (in					
Saturation P (includes car		Yes	No Depth (in	ches): 0		Wet	land Hydrology Pres	ent? Yes V No No
		m gauge, m	onitoring well, aerial	photos, p	revious ins	pections)	, if available:	
	`	- <del>-</del> ·	- '	• •		,		
Remarks:								
Fyidence	of wetland by	drology i	ncludes soil sat	uration	surfac	e water	hvdrogen sulfi	de odor, geomorphic
	and a positive			a. a.(1011	, Janac	o water	, riyarogen sulli	ao odor, geomorphic
position, a		I ACTIVE	ונומו נכטנ.					

Project/Site: Rostad 2024	(	City/Count	<sub>y:</sub> Meaghe	er County	Sampling Date: 2024-06-25
		-	-		Sampling Point: DP03w-b
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor				-	e Slone (%): 0
Subregion (LRR): E 46					
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb					
Are climatic / hydrologic conditions on the site typical for this				<u></u>	·
Are Vegetation, Soil, or Hydrologys					
Are Vegetation, Soil, or Hydrology n					
SUMMARY OF FINDINGS – Attach site map					
<u> </u>		<u> </u>			, , ,
Hydrophytic Vegetation Present?  Yes   N  N  N  N  N  N  N  N  N  N  N  N  N		ls t	he Sampled	Area	
Hydric Soil Present?  Wetland Hydrology Present?  Yes   N	0	witl	hin a Wetlar	nd? Yes	No
Remarks:	U				
	f oito				
Wetland sample point at south end o	or site.				
VEGETATION – Use scientific names of plan					
Tree Stratum (Plot size: 30 ft r	Absolute % Cover		nt Indicator Status	Dominance Test work	
1				Number of Dominant Sp That Are OBL, FACW, of	
2.				(excluding FAC-):	<u>2</u> (A)
3.				Total Number of Domina	ant
4				Species Across All Stra	ta: <u>2</u> (B)
15 ft r		= Total Co	over	Percent of Dominant Sp	
Sapling/Shrub Stratum (Plot size: 15 ft r )				That Are OBL, FACW, o	or FAC: 100.00 (A/B)
1				Prevalence Index worl	ksheet:
3.				Total % Cover of:	Multiply by:
4					x 1 = <u>1</u>
5.					x 2 = 140
		= Total Co	over		x 3 = 0
Herb Stratum (Plot size: 5 ft r )	40		EACW	FACU species 17	
1. Juncus balticus 2. Phalaris arundinacea	<u>40</u> 20		FACW FACW	UPL species 0 Column Totals: 88	
3. Poa pratensis	15		FACU	Column Totals. Go	(A) <u>209</u> (B)
Alopecurus pratensis	10		FACW	Prevalence Index	= B/A = 2.37
5. Carex pellita	1		OBL	Hydrophytic Vegetation	on Indicators:
6. Taraxacum officinale	1		FACU	✓ 1 - Rapid Test for H	
7. Trifolium hybridum	1		FACU	✓ 2 - Dominance Tes	
8				✓ 3 - Prevalence Inde	
9					Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
10				Problematic Hydrop	ohytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r	88	= Total Co	over	<sup>1</sup> Indicators of hydric soil	l and wetland hydrology must
1				be present, unless distu	
2				Hydrophytic	
		= Total Co	over	Vegetation	<b>4</b>
% Bare Ground in Herb Stratum 12				Present? Yes	s No
Remarks:					
PEM, dominated by FACW vegetatio	n.				

SOIL Sampling Point: DP03w-b

Profile Desc	ription: (Describe	e to the de	pth needed to docu	ment the	indicator	or confir	m the absence of indicators.)	
Depth	Matrix			x Feature	1		<u>.</u>	
(inches)	Color (moist)		Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks	
0 - 8	10YR 3/1	50	10YR 4/6	10	<u> </u>	M	Sandy Clay	
0 - 8	10YR 4/2	40				-	Sandy Clay	
8 - 16	10YR 6/2	98	10YR 4/6	2	С	М	Sandy Clay Loam	
-								
-				_				
_							·	<del></del>
							· <del></del>	<del></del>
<del>-</del>					_			
			I=Reduced Matrix, C			ed Sand G		·
-		cable to al	I LRRs, unless othe				Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1) pipedon (A2)		Sandy Sandy	-			1 cm Muck (A9) (LRR I, J) Coast Prairie Redox (A16) (LRR F, G, H	,
Black Hi				d Matrix (			Coast Frame Redox (A16) (ERR F, G, H Dark Surface (S7) (ERR G)	,
	n Sulfide (A4)			,	ineral (F1)		High Plains Depressions (F16)	
	d Layers (A5) ( <b>LRR</b>	<b>F</b> )	-	-	latrix (F2)		(LRR H outside of MLRA 72 & 73)	
	ıck (A9) ( <b>LRR F, G</b>		<u>✓</u> Deplete		` '		Reduced Vertic (F18)	
-	d Below Dark Surfa	ce (A11)	<u>✓</u> Redox		` ,		Red Parent Material (TF2)	
	ark Surface (A12)				urface (F7	)	Very Shallow Dark Surface (TF12)	
	lucky Mineral (S1) /lucky Peat or Peat	(S2) (LRR	Redox G, H) High Pl	•	. ,	:16)	Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and	
	icky Peat or Peat (				73 of LRF		wetland hydrology must be present,	
	iony i out or i out (	30) ( <u>=</u>	, (			,	unless disturbed or problematic.	
Restrictive I	_ayer (if present):						·	
Type:								
Depth (in	ches):						Hydric Soil Present? Yes No	
Remarks:							1	
Denlete	d matrix and	l redov	dark surface	ohse	rved			
Depicte	a matrix and	1 I COOX	dark sarrace	ODSC	ı vca.			
HYDROLO	GV							
_	drology Indicators		محمد فحطة الحماد ماء	I. A			Consider Indicators (minimum of two reserves	
-	•	one require	ed; check all that app				Secondary Indicators (minimum of two req	<u>uirea)</u>
	Water (A1) iter Table (A2)		Salt Crust Aquatic In		oc (P13)		<ul><li>Surface Soil Cracks (B6)</li><li>Sparsely Vegetated Concave Surface</li></ul>	(DQ)
Saturation			Aquatic iii				Drainage Patterns (B10)	(60)
	arks (B1)		Dry-Seaso			١	Oxidized Rhizospheres on Living Roo	ts (C3)
· ——	nt Deposits (B2)		Oxidized I				· · · · · · · · · · · · · · · · · · ·	10 (00)
	posits (B3)			not tilled		ing receio	Crayfish Burrows (C8)	
-	at or Crust (B4)		Presence			4)	Saturation Visible on Aerial Imagery (	C9)
Iron Dep			Thin Mucl			-,	Geomorphic Position (D2)	,
-	on Vis ble on Aerial	I Imagery (E					FAC-Neutral Test (D5)	
·	tained Leaves (B9)	• • •	, ,		,		Frost-Heave Hummocks (D7) (LRR F	.)
Field Obser	vations:							
Surface Wat	er Present?	Yes	No Depth (in	ches):				
Water Table			No Depth (in					
Saturation P	resent?	Yes 🔽	No Depth (in	ches): 0		Wet	tland Hydrology Present? Yes No _	
(includes cap	oillary fringe)		onitoring wall carial	nhotoo n	rovious in	nootiona)	if available	
Describe Re	corded Data (Streat	ııı yauye, m	onitoring well, aerial	μποιος, β	revious ins	spections)	y, ii avallable.	
Remarks:								
			•	e corre	ect geor	norphic	position and passes the FAC-Neutra	il .
test, prov	ing wetland hy	/drology	•					

Project/Site: Rostad 2024	(	City/Cou	unty: _	Meaghe	r County	Sampling Date: 2024	4-06-25
	_	•			State: Montana	Sampling Point: DP0	4u
Investigator(s): McEldowney							
Landform (hillslope, terrace, etc.): Valley Floor		Local re	elief (d	concave, o	convex, none): Convex	Slope (%	o): <u>5</u>
Subregion (LRR): E 46	Lat: 46.	46052	21		Long: -110.295407	Datum: N	AD 83
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabl							
Are climatic / hydrologic conditions on the site typical for thi	s time of yea	ar? Yes	, <u> </u>	No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrologys	significantly	disturbe	ed?	Are "	Normal Circumstances" p	present? Yes	No
Are Vegetation, Soil, or Hydrology r	naturally pro	blematio	c?	(If ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samp	ling	point l	ocations, transects	, important featur	es, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	lo			Sampled a Wetlar		No	
Upland sample point in the east side	middle	port	tion	of the	e site.		
VEGETATION – Use scientific names of plan	its.						
Tree Stratum (Plot size: 30 ft r )	Absolute % Cover	Specie	es?	Status	Number of Dominant S That Are OBL, FACW,	pecies	
2.					(excluding FAC-):	0	_ (A)
3					Total Number of Domin		(5)
4					Species Across All Stra	ata: <u>1</u>	_ (B)
Sapling/Shrub Stratum (Plot size: 15 ft r )					Percent of Dominant S That Are OBL, FACW,		_ (A/B)
2.					Prevalence Index wor		
3					_	Multiply by:	
4					OBL species 0 FACW species 5	x 1 = <u>0</u>	
5						x 3 = 0	
Herb Stratum (Plot size: 5 ft r )		= Total	Cove	r		x 4 = 40	
1. Bromus inermis	75	~	ι	JPL	UPL species 75		<del></del>
2. Poa pratensis	10		F	ACU	Column Totals: 90		(B)
3. Poa palustris	5		F	ACW			
4					Prevalence Index		
5					Hydrophytic Vegetation 1 - Rapid Test for H		
6					2 - Dominance Tes		
7					3 - Prevalence Inde		
8					4 - Morphological A		upportina
9					data in Remarks	s or on a separate shee	t)
10	~~	= Total	Covo		Problematic Hydro	phytic Vegetation <sup>1</sup> (Exp	lain)
Woody Vine Stratum (Plot size: 30 ft r )  1					<sup>1</sup> Indicators of hydric soi be present, unless dist		/ must
2			Cove		Hydrophytic Vegetation Present? Ye	s No	
Remarks:					•		
Upland sample point dominated by s	smooth	brom	ne.				

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SOIL Sampling Point: DP04u

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

(inches) Color (moist) % Color (moist) % Type¹ Loc² Texture Remarks  0 - 14 10YR 3/2 100 Clay Loam Soil is saturated.  14 - 16 10YR 4/2 98 10YR 4/6 2 C M Sandy Clay	
14 - 16  10YR 4/2  98  10YR 4/6  2  C  M  Sandy Clay	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.  2 Location: PL=Pore Lining, M=Matrix.  Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	 
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	 
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histic Epipedon (A2) Sandy Redox (S5) Coast Prairie Redox (A16) (LRR F, G, H	)
Black Histic (A3)  Stripped Matrix (S6)  Dark Surface (S7) (LRR G)	, 
Hydrogen Sulfide (A4)  Loamy Mucky Mineral (F1)  High Plains Depressions (F16)	
Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73)	
1 cm Muck (A9) ( <b>LRR F, G, H</b> ) Depleted Matrix (F3) Reduced Vertic (F18)	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Red Parent Material (TF2)	
Thick Dark Surface (A12) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12)	
Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks)	
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16)  5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present,	
unless disturbed or problematic.	
Restrictive Layer (if present):	
Type:	
Depth (inches): Hydric Soil Present? Yes No	<b>~</b>
Remarks:	
No hydric soil indicators observed.	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)  Secondary Indicators (minimum of two required)	uired)
Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6)	
High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface	(B8)
Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10)	(20)
	s (C3)
Sediment Deposits (B2)  Oxidized Rhizospheres on Living Roots (C3)  (where tilled)	()
Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8)	
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (Cartesian Control of Cartesian Cartesia	29)
Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2)	,
Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks) FAC-Neutral Test (D5)	
Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F	)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes V No Depth (inches): 1 Wetland Hydrology Present? Yes No No	~
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	
Remarks:	nah
	ugh,

Project/Site: Rostad 2024	(	City/Co	ounty:	Meaghe	er County	Sampling	Date:	2024-0	06-25
		-	-		State: Montana				
Investigator(s): R Baumgarten							_		
Landform (hillslope, terrace, etc.): Valley Floor						e	Slo	pe (%):	0
Subregion (LRR): E 46									
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb									
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	es •	No	(If no, explain in F	Remarks.)			
Are Vegetation, Soil, or Hydrologys							Yes	No	)
Are Vegetation, Soil, or Hydrologyn									
SUMMARY OF FINDINGS – Attach site map	showing	samı	pling	g point l	ocations, transects	s, import	tant fe	atures	s, etc.
Hydric Soil Present? Yes No	o			e Sampled n a Wetlar		, No _		-	
Wetland sample point located near the I		of the	e so	utheas	t boundary. PEM,	depres	ssiona	al.	
VEGETATION – Use scientific names of plan									
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u> )  1 2		Spec	ies?	Status	Dominance Test work  Number of Dominant S  That Are OBL, FACW, (excluding FAC-):	pecies or FAC	1		(A)
3. 4.					Total Number of Domir Species Across All Stra		2		(B)
Sapling/Shrub Stratum (Plot size: 15 ft r		= Tota	l Cov	er	Percent of Dominant S That Are OBL, FACW,		50.00		(A/B)
1					Prevalence Index wor	ksheet:			
2					Total % Cover of:		Multipl	v bv:	
3						x 1			
4					FACW species 45				
5		= Tota	L Cov	 er	FAC species 0				
Herb Stratum (Plot size: 5 ft r		- 10ta	11 OOV	Ci		x 4		3	_
1. Alopecurus arundinaceus	45			FACW	UPL species 0				_
2. Poa pratensis	30			FACU	Column Totals: 89	(A)	260	)	_ (B)
3. Elymus repens	10			FACU	Prevalence Index	c = B/A =	2.92		
4. Eleocharis palustris	2 2			OBL	Hydrophytic Vegetati				
5. Trifolium hybridum	· <del></del>			FACU	1 - Rapid Test for			ation	
6					2 - Dominance Tes				
7					✓ 3 - Prevalence Ind	ex is ≤3.0 <sup>1</sup>			
8					4 - Morphological	Adaptation	s¹ (Prov	ide supp	orting
9					data in Remark		•		
10.	~~	= Tota			Problematic Hydro	phytic Veg	getation'	(Explair	ו)
Woody Vine Stratum (Plot size: 30 ft r )  1					<sup>1</sup> Indicators of hydric so be present, unless dist				ıust
2.					Hydrophytic				
		= Tota	I Cov	er	Vegetation Present? Ye	s 🗸	No		
% Bare Ground in Herb Stratum 11  Remarks:					i resent:				
	• • •		. •	_					
Prevalence index requirement met w					ultiple soil and l	nydrolo	ogy		

US Army Corps of Engineers B-37 Great Plains – Version 2.0

SOIL Sampling Point: DP04w

Profile Desc	cription: (Describe	e to the de	pth needed to docu	ment the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 12	10YR 3/1	90	N 2.5/0	10	<u>D</u>	М	Silty Clay Loam	
12 - 16	10YR 4/1	98	10YR 6/6	2	С	М	Sandy Clay Loam	Sulfidic odor observed.
-								
-								
			_					
							<del></del>	
							<u> </u>	
<del></del>								
		•	I=Reduced Matrix, C			ed Sand G		eation: PL=Pore Lining, M=Matrix.
_		cable to al	I LRRs, unless othe					for Problematic Hydric Soils <sup>3</sup> :
Histosol	oipedon (A2)		Sandy	Gleyed IVI Redox (S				Muck (A9) ( <b>LRR I, J</b> ) Prairie Redox (A16) ( <b>LRR F, G, H</b> )
-	stic (A3)			d Matrix (				urface (S7) (LRR G)
	en Sulfide (A4)			,	ineral (F1)			lains Depressions (F16)
Stratified	d Layers (A5) ( <b>LRR</b>	<b>F</b> )	Loamy	Gleyed M	latrix (F2)		(LR	R H outside of MLRA 72 & 73)
	ıck (A9) ( <b>LRR F, G</b>			d Matrix				ed Vertic (F18)
-	d Below Dark Surfa	ce (A11)	·	Dark Surf				arent Material (TF2) hallow Dark Surface (TF12)
	ark Surface (A12) Nucky Mineral (S1)			Depression	urface (F7)	1		Explain in Remarks)
-	Mucky Peat or Peat	(S2) (LRR			ressions (F	16)		of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (	S3) ( <b>LRR F</b>	) (ML	.RA 72 &	73 of LRR	<b>H</b> )	wetland	hydrology must be present,
							unless	disturbed or problematic.
_	Layer (if present):							
Type:								
	ches):						Hydric Soil	Present? Yes No
Remarks:								
Sulfidic	odor at 12" a	and de <sub>l</sub>	oleted below	dark s	surface	provi	ide hydric	soil indicators.
HYDROLO	GY							
Wetland Hy	drology Indicators	s:						
Primary India	cators (minimum of	one require	ed; check all that app	ly)			<u>Seconda</u>	ry Indicators (minimum of two required)
<u>✓</u> Surface			Salt Crust					ace Soil Cracks (B6)
	ater Table (A2)		Aquatic In	vertebrat	es (B13)			rsely Vegetated Concave Surface (B8)
<u>✓</u> Saturation	, ,		<u> </u> Hydrogen					nage Patterns (B10)
	larks (B1)				Table (C2)			lized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized I			ing Roots		there tilled)
	oosits (B3) at or Crust (B4)		(where Presence	not tilled of Reduc	•	1)	-	rfish Burrows (C8)  Iration Visible on Aerial Imagery (C9)
_	posits (B5)		Thin Muck			•)		morphic Position (D2)
-	on Vis ble on Aeria	l Imagery (E						-Neutral Test (D5)
	tained Leaves (B9)	• • •	,		,			t-Heave Hummocks (D7) ( <b>LRR F</b> )
Field Obser	vations:							
Surface Wat	er Present?	Yes	No Depth (in	ches): 1				
Water Table			No Depth (in					
Saturation P		Yes	No Depth (in	iches): 0		Wet	land Hydrology	y Present? Yes No
(includes cap Describe Re		m gauge, m	onitoring well, aerial	photos, p	revious ins	pections)	, if available:	
	,	<b>5 5</b> /	<i>y</i> , -	. ,,		/		
Remarks:								
Evidono	o of multiple	nrima	ry indicators	forw	atland!	avdral	logy	
Evidenc	e or munipie	pillia	ry indicators	IOI WE	stialiu i	iyuro	ogy.	

Project/Site: Rostad 2024	(	City/Co	ounty:	Meaghe	r County	Sampling Date	e: 2024-06	-25
Applicant/Owner: MDT		-	-		State: Montana			
Investigator(s): R Baumgarten		Section	n, Tov	wnship, Rai	nge: S12 T8N R11E			
Landform (hillslope, terrace, etc.): Valley Floor							Slope (%): 0	
Subregion (LRR): E 46	Lat: 46.	4618	02	,	Long: -110.2954	 D:	atum: NAD 8	33
Soil Map Unit Name: 854B - Varney-Coyoteflats com								
Are climatic / hydrologic conditions on the site typical for this						· ·		
Are Vegetation, Soil, or Hydrology si	-				Normal Circumstances" p		✓ No	
Are Vegetation, Soil, or Hydrology na	-				eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map s								etc.
Hydrophytic Vegetation Present? Yes No	· ·		lo th	e Sampled	Aron			
Hydric Soil Present? Yes No	, <i>'</i>			-		No	•	
Wetland Hydrology Present? Yes No			WILLIII	ii a wellai	103	\\		
Remarks:								
Upland sample point located near no	rtheast	cer	nter	of the	site.			
VEGETATION – Use scientific names of plant	•							
VEGETATION – Ose scientific frames of plant	Absolute	Domi	inant	Indicator	Dominance Test work	rshoot:		
Tree Stratum (Plot size: 30 ft r )	% Cover				Number of Dominant S			
1					That Are OBL, FACW,	•		
2					(excluding FAC-):	<u> </u>	(A	<b>A</b> )
3					Total Number of Domin	_	(5)	
4					Species Across All Stra	ıta: <u>2</u>	(B	5)
Sapling/Shrub Stratum (Plot size: 15 ft r )	;	= Tota	ıl Cov	er	Percent of Dominant S That Are OBL, FACW,		0 (A	/B)
1					Prevalence Index wor	ksheet		
2					Total % Cover of:		tiply by:	
3						x 1 = 0		
4		-			FACW species 0			
5			ı Cov		FAC species 1	x 3 = <u>3</u>	3	
Herb Stratum (Plot size: 5 ft r		– 10ta	ii COV	CI	FACU species 43	x 4 = <u>1</u>	172	
1. Bromus inermis	50			UPL	UPL species 50			
2. Poa pratensis	40			FACU	Column Totals: 94	(A) <u></u>	125 (	B)
3. Cirsium arvense	3			FACU	Prevalence Index	$r = R/\Delta = 4.52$	2	
4. Potentilla gracilis	1			FAC	Hydrophytic Vegetation			
5					1 - Rapid Test for I		getation	
6					2 - Dominance Tes		5	
7					3 - Prevalence Inde			
8					4 - Morphological A	Adaptations <sup>1</sup> (P	rovide suppor	ting
9					data in Remark			
10	O 4	= Tota	l Cov		Problematic Hydro	phytic Vegetation	on' (Explain)	
Woody Vine Stratum (Plot size: 30 ft r )  1					<sup>1</sup> Indicators of hydric so be present, unless dist			t
2.					Hydrophytic			
					Vegetation		<b>/</b>	
% Bare Ground in Herb Stratum 6  Remarks:					Present? Ye	sNo		
					,	1.14		
No hydrophytic vegetation indicators grass.	met. [	om	ınat	ted by	smooth brome a	and Kentu	icky blue	<b>)</b>

US Army Corps of Engineers B-39 Great Plains – Version 2.0

SOIL Sampling Point: DP05u

Profile Desc	ription: (Describe	to the depth	needed to docun	nent the i	ndicator	or confirn	n the absence of ind	icators.)	
Depth	Matrix			k Features	<u> </u>				
(inches)	Color (moist)	<u> </u>	Color (moist)	<u></u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0 - 6	10YR 3/2	100					Silty Clay Loam		
6 - 16	10YR 4/2	100					Silty Clay Loam		
									_
-									
-									
	ncentration, D=Dep					d Sand G		PL=Pore Lining, M=	•
-	ndicators: (Applic	able to all LF						oblematic Hydric S	ioils":
Histosol			Sandy G	-			1 cm Muck (A		
	ipedon (A2)		-	Redox (S5)				Redox (A16) (LRR	F, G, H)
Black His	` '			Matrix (S				(S7) (LRR G)	
	n Sulfide (A4)	<b>-</b> \	-	Mucky Min				Depressions (F16)	0.70\
	Layers (A5) (LRR l ck (A9) (LRR F, G,		-	Gleyed Ma d Matrix (F			(LRR H o Reduced Ver	utside of MLRA 72	& 73)
	l Below Dark Surfac			ark Surfa				ис (F16) //aterial (TF2)	
	rk Surface (A12)	C (A11)		d Dark Su	` ,	ı		Dark Surface (TF12	2)
	ucky Mineral (S1)			epression				in in Remarks)	-,
	lucky Peat or Peat (	(S2) ( <b>LRR G</b> ,		ins Depre	. ,	16)		rophytic vegetation a	and
	cky Peat or Peat (S			RA 72 & 7			-	ology must be prese	
							unless distur	bed or problematic.	
Restrictive L	ayer (if present):								
Туре:									
Depth (inc	:hes):						Hydric Soil Prese	ent? Yes	No
Remarks:									
NI					ı				
No evide	ence of hydri	ic soil ind	dicators obs	servea	•				
HYDROLO	GY								
Wetland Hyd	Irology Indicators:								
Primary Indic	ators (minimum of c	one required;	check all that apply	/)			Secondary Ind	icators (minimum of	two required)
	Water (A1)	,	Salt Crust				-	oil Cracks (B6)	<del></del>
	ter Table (A2)		Aquatic Inv		s (B13)			egetated Concave S	Surface (B8)
Saturation	, ,		Hydrogen		, ,			Patterns (B10)	(= 1)
	arks (B1)		Dry-Seaso				=	Rhizospheres on Livi	na Roots (C3)
· <del></del>	t Deposits (B2)		Oxidized R		, ,			•	
	osits (B3)		(where r					urrows (C8)	
	t or Crust (B4)		Presence of		d Iron (C4	1)	<del></del>	Visible on Aerial Ima	agery (C9)
	osits (B5)		Thin Muck		•	• /		ic Position (D2)	ugu.y (00)
	on Vis ble on Aerial	Imagery (B7)	Other (Exp					ral Test (D5)	
	ained Leaves (B9)							ve Hummocks (D7)	(LRR F)
Field Observ								(-1)	(
Surface Water		es No	Depth (inc	hes).					
Water Table			Depth (inc						
							and Uvdualass Des-	ont? Vac	No. V
Saturation Pr (includes cap		es No	Depth (inc	nes):		_ vveti	and Hydrology Pres	entr res	NU
	corded Data (stream	n gauge, moni	toring well, aerial p	hotos, pre	evious ins	pections),	if available:		
Remarks:									
No evide	ence of wetla	and hydr	ology obse	rved.					

Project/Site: Rostad 2024	(	City/Count	<sub>y:</sub> Meaghe	er County	Sampling Date: 2024-06-25
	_			State: Montana	Sampling Point: DP05w
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor		Local relie	ef (concave,	convex, none): Concave	e Slope (%): 0
Subregion (LRR): E 46	Lat: 46.	461808		Long: -110.295541	Datum: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes _	✓ No	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly of	disturbed?	Are "	'Normal Circumstances" p	oresent? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally pro	blematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplir	ng point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes No  Yes No  No  No  No  No  No  Yes No  No	0		he Sampled hin a Wetlar		No
PEM, flat wetland type in the east ce	entral po	ortion	of the si	te.	
VEGETATION – Use scientific names of plan	ts.				
Tree Stratum (Plot size: 30 ft r	Absolute % Cover		t Indicator	Dominance Test work	
1				Number of Dominant Sp That Are OBL, FACW, of	or FAC
2.				(excluding FAC-):	<u>1</u> (A)
3				Total Number of Domin	
4				Species Across All Stra	ta: <u>1</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r )				Percent of Dominant Sp That Are OBL, FACW, of	
2.				Prevalence Index wor	ksheet:
3.					Multiply by:
4					x 1 = 0
5					x 2 = 140
5 ft r		= Total Co	over		x 3 = 0 x 4 = 20
Herb Stratum (Plot size: 5 ft r)  1. Alopecurus arundinaceus	65	~	FACW	UPL species 0	
2 Phalaris arundinacea	5		FACW	Column Totals: 75	
3. Poa pratensis	5	1	FACU		
4.				Prevalence Index	
5				Hydrophytic Vegetation	
6				<ul><li>✓ 1 - Rapid Test for F</li><li>✓ 2 - Dominance Tes</li></ul>	
7				✓ 2 - Dominance Tes	
8	·			<del></del>	Adaptations <sup>1</sup> (Provide supporting
9					s or on a separate sheet)
10	7-			Problematic Hydrop	phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1		= Total Co		<sup>1</sup> Indicators of hydric soi be present, unless distu	l and wetland hydrology must urbed or problematic.
2 % Bare Ground in Herb Stratum 25		- Total Co		Hydrophytic Vegetation Present? Yes	s No
PEM, Monoculture of Garrison creep					

US Army Corps of Engineers B-41 Great Plains – Version 2.0

SOIL Sampling Point: DP05w

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)		Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 6	10YR 3/1	100					Clay Loam	
6 - 10	10YR 4/2	98	10YR 4/6	2	<u>C</u>	М	Sandy Clay Loam	Saturation observed at 6
10 - 16	10YR 6/1	97	10YR 4/6	3	С	М	Sandy Clay	
-								
-								· · · · · · · · · · · · · · · · · · ·
-								
				•				
	-							
1 0 0							. 21	
			=Reduced Matrix, CS LRRs, unless other			d Sand G		cation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
Histosol		cable to all	Sandy (					fuck (A9) (LRR I, J)
l —	oipedon (A2)			Redox (S				Prairie Redox (A16) ( <b>LRR F, G, H</b> )
-	stic (A3)			d Matrix (				Surface (S7) (LRR G)
	en Sulfide (A4)				neral (F1)		_	lains Depressions (F16)
	d Layers (A5) (LRR	,			atrix (F2)		`	R H outside of MLRA 72 & 73)
	ick (A9) ( <b>LRR F, G,</b> d Below Dark Surfa		<u>✓</u> Deplete	d Matrix ( Dark Surf				ed Vertic (F18) arent Material (TF2)
-	ark Surface (A12)	ce (ATT)			urface (F7)	ı		hallow Dark Surface (TF12)
	Mucky Mineral (S1)			Depressio				(Explain in Remarks)
	Mucky Peat or Peat				essions (F			of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	RA 72 &	73 of LRR	<b>H</b> )		d hydrology must be present,
Postrictive I	Layer (if present):						unless	disturbed or problematic.
Type:	Layer (ii present).							
	ches):						Hydric Soil	Present? Yes _ V No
Remarks:							1.7	
	d matrix in di	aatar a	boomin the		and an	مأحاط ام	d borizon	_
Deblete	u matrix mui	Cator o	bserved in th	ie sec	onu ai	ia triir	u nonzon:	<b>5.</b>
HYDROLO	GV							
	drology Indicators		d; check all that appl				Casanda	and Indicators (minimum of two required)
-	•	one require	<u>d, check all that appl</u> Salt Crust					ary Indicators (minimum of two required) face Soil Cracks (B6)
	Water (A1) ater Table (A2)		Aquatic Inv		e (R13)			rsely Vegetated Concave Surface (B8)
<u>✓</u> Saturation			Hydrogen					nage Patterns (B10)
	larks (B1)		Dry-Seaso					dized Rhizospheres on Living Roots (C3)
· ——	nt Deposits (B2)		Oxidized F				·	where tilled)
	posits (B3)			not tilled				yfish Burrows (C8)
Algal Ma	at or Crust (B4)		Presence	of Reduc	ed Iron (C4	1)	Satu	uration Visible on Aerial Imagery (C9)
-	oosits (B5)		Thin Muck	Surface	(C7)			morphic Position (D2)
· ——	on Vis ble on Aerial	Imagery (B	7) Other (Exp	olain in R	emarks)			C-Neutral Test (D5)
	tained Leaves (B9)						Fros	st-Heave Hummocks (D7) (LRR F)
Field Obser								
Surface Wat			No Depth (inc					
Water Table			No Depth (inc				- ا - سام المسا	V. Dragont2 Vot V
Saturation P (includes car		res	No Depth (inc	cnes): <u>U</u>		wet	iand Hydrolog	y Present? Yes V No No
		n gauge, m	onitoring well, aerial p	ohotos, p	revious ins	pections)	, if available:	
Remarks:								
Saturated	l at 6 inches ar	nd is in th	ne correct geom	orphic	position	n. Redo	x found in u	pper 12 inches of soil profile.
			J	•	-			•

Project/Site: Rostad 2024		City/Cour	<sub>nty:</sub> Meaghe	r County	Sampling Date: 2024-06-25
			-		Sampling Point: DP06u
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor		Local reli	ief (concave,	convex, none): Convex	Slope (%): 5
Subregion (LRR): E 46	Lat: 46.	462536	3	Long: -110.293512	Datum: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats cor					
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes_	<b>✓</b> No_	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrologys	significantly	disturbed	? Are "	'Normal Circumstances" p	oresent? Yes No
Are Vegetation, Soil, or Hydrology r	naturally pro	blematic?	? (If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	sampli	ing point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	o		the Sampled		No <u> </u>
Upland sample point in the southeas	st portic	n of t	he site.		
VEGETATION – Use scientific names of plan	ts.				
Tree Stratum (Plot size: 30 ft r			nt Indicator 3? Status	Dominance Test work  Number of Dominant Sp	
1				That Are OBL, FACW, (excluding FAC-):	or FAC (A)
3				Total Number of Domin Species Across All Stra	
4		= Total C	^over	·	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Percent of Dominant Sp That Are OBL, FACW, o	
2				Prevalence Index wor	ksheet:
3.				_	Multiply by:
4					x 1 = 0
5					x = 0
		= Total C	Cover	FAC species 0  FACU species 16	x 3 = 0
Herb Stratum (Plot size: 5 ft r  1. Bromus inermis	65	~	UPL	UPL species 65	
2. Poa pratensis	15		FACU	Column Totals: 81	<del>-</del>
Trifolium hybridum	- <del>10</del>		FACU		
4.				Prevalence Index	
5				Hydrophytic Vegetation	
6.				1 - Rapid Test for H	
7				2 - Dominance Tes	
8				3 - Prevalence Inde	
9				data in Remarks	Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
10.				Problematic Hydro	phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )		= Total C		<sup>1</sup> Indicators of hydric soi be present, unless distu	l and wetland hydrology must
1 2				Hydrophytic	,
% Bare Ground in Herb Stratum 19		= Total C	Cover	Vegetation Present? Yes	s No
Remarks:			<u> </u>		
Upland sample point dominated by s	mooth	brom	e.		

US Army Corps of Engineers B-43 Great Plains – Version 2.0

SOIL Sampling Point: DP06u

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

Depth	Matrix			x Feature	S			
(inches)	Color (moist)	<u> </u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 13	10YR 3/1	100					Sandy Clay	
13 - 15	10YR 3/1	98 10	YR 4/6	2	С	М	Sandy Clay	
			•					
-								
	-				. —			
				-				
<sup>1</sup> Type: C=Co	oncentration, D=De	pletion, RM=Re	duced Matrix, CS	=Covere	d or Coate	ed Sand Gr	rains. <sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.
	Indicators: (Appli							Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy C	Sleyed Ma	atrix (S4)		1 cm Muck	(A9) ( <b>LRR I, J</b> )
	oipedon (A2)			Redox (S5	. ,			rie Redox (A16) (LRR F, G, H)
Black Hi			-	Matrix (S				ice (S7) (LRR G)
Hydroge	en Sulfide (A4)			•	neral (F1)			s Depressions (F16)
	d Layers (A5) (LRR	F)	-	Gleyed Ma			-	outside of MLRA 72 & 73)
1 cm Mu	ıck (A9) ( <b>LRR F, G</b> ,	H)	Deplete	d Matrix (	F3)		Reduced \	/ertic (F18)
Depleted	d Below Dark Surface	ce (A11)	Redox [	ark Surfa	ace (F6)		Red Paren	t Material (TF2)
Thick Da	ark Surface (A12)		Deplete	d Dark Su	ırface (F7	)	Very Shalle	ow Dark Surface (TF12)
Sandy M	lucky Mineral (S1)		Redox [	Depressio	ns (F8)			olain in Remarks)
2.5 cm N	Mucky Peat or Peat	(S2) ( <b>LRR G</b> , H	l) High Pla	ins Depre	essions (F	16)	<sup>3</sup> Indicators of h	ydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	RA 72 & 1	73 of LRF	RH)	wetland hy	drology must be present,
							unless dist	urbed or problematic.
Restrictive I	Layer (if present):							
Type:			=					
Depth (inc	ches):		<u> </u>				Hydric Soil Pre	sent? Yes No
Remarks:							I	
o :::								
Soil is m	oist. No evid	dence of r	iyarıc soils	obse	rvea.			
HYDROLO	GY							
	drology Indicators							
_				۸				
-	cators (minimum of	one requirea; ci	neck all that apply	/)			0	adia taun (adialarum af tura an adia di
' <del></del>	Water (A1)						<del></del>	ndicators (minimum of two required)
	iter Table (A2)		Salt Crust	(B11)			Surface	Soil Cracks (B6)
Saturation			Aquatic Inv	(B11) vertebrate			Surface Sparsely	Soil Cracks (B6) y Vegetated Concave Surface (B8)
	on (A3)		Aquatic Inv	(B11) vertebrate Sulfide O	dor (C1)		Surface Sparsely Drainag	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10)
Water M			Aquatic Inv	(B11) vertebrate Sulfide O	dor (C1)	)	Surface Sparsely Drainag	Soil Cracks (B6) y Vegetated Concave Surface (B8)
	on (A3)		Aquatic Inv	(B11) vertebrate Sulfide O n Water	dor (C1) Γable (C2		Surface Sparsely Drainag Oxidized	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10)
Sedimer	on (A3) larks (B1)		Aquatic Inv Hydrogen Dry-Seaso Oxidized F	(B11) vertebrate Sulfide O n Water	dor (C1) Γable (C2 res on Liv		Surface Sparsely Drainag Oxidized (C3) (where	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3)
Sedimer Drift Dep	on (A3) larks (B1) nt Deposits (B2)		Aquatic Inv Hydrogen Dry-Seaso Oxidized F	(B11) vertebrate Sulfide O n Water T thizosphe	dor (C1) Fable (C2 res on Liv	ving Roots	Surface Sparsely Drainag Oxidized (C3) (wher	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled)
Sedimer Drift Dep Algal Ma	on (A3) larks (B1) nt Deposits (B2) posits (B3)		Aquatic Inv Hydrogen Dry-Seaso Oxidized F	(B11) vertebrate Sulfide Or n Water This chizosphe not tilled)	dor (C1) Fable (C2 res on Lived Iron (C	ving Roots	Surface Sparsely Drainag Oxidized (C3) (where Crayfish Saturation	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) a Burrows (C8)
Sedimer Drift Dep Algal Ma	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	Imagery (B7)	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r	(B11) vertebrate Sulfide Or n Water Thisosphe not tilled) of Reduce Surface (	dor (C1) Fable (C2 Fres on Lived Iron (C	ving Roots	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturatic Geomor	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9)
Sedimer Drift Dep Algal Ma Iron Dep Inundation	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	Imagery (B7)	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of	(B11) vertebrate Sulfide Or n Water Thisosphe not tilled) of Reduce Surface (	dor (C1) Fable (C2 Fres on Lived Iron (C	ving Roots	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturatic Geomor FAC-Ne	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2)
Sedimer Drift Dep Algal Ma Iron Dep Inundation	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9)	Imagery (B7)	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of	(B11) vertebrate Sulfide Or n Water Thisosphe not tilled) of Reduce Surface (	dor (C1) Fable (C2 Fres on Lived Iron (C	ving Roots	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturatic Geomor FAC-Ne	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) a Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) eutral Test (D5)
Sedimer Drift Dep Algal Ma Iron Dep Inundation Water-S	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations:		Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence o Thin Muck Other (Exp	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( olain in Re	dor (C1) Fable (C2 Fres on Lived Iron (C (C7) Fremarks)	ring Roots	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturatic Geomor FAC-Ne	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) a Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) eutral Test (D5)
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Water-S Field Observ Surface Water	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present?	Yes No	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( plain in Re	dor (C1) Fable (C2 res on Liv ed Iron (C (C7) emarks)	ring Roots	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturatic Geomor FAC-Ne	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) a Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) eutral Test (D5)
Sedimer Drift Dep Algal Ma Iron Dep Inundation Water-S Field Observ Surface Water Water Table	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present?	Yes No	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( olain in Re ches): ches):	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ring Roots 4)	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Water-S Field Observ Surface Water Water Table Saturation Pr (includes cap	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present?	Yes No Yes No Yes No	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp  Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( olain in Re ches): ches): ches):	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) a Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) eutral Test (D5)
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Water-S Field Observ Surface Water Water Table Saturation Pr (includes cap	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present?	Yes No Yes No Yes No	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp  Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( olain in Re ches): ches): ches):	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)
Sedimer Drift Dep Algal Ma Iron Dep Inundatio Water-S Field Observ Surface Water Water Table Saturation Pr (includes cap	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present?	Yes No Yes No Yes No	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp  Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( olain in Re ches): ches): ches):	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)
Sedimer Drift Dep Algal Ma Iron Dep Inundation Water-S Field Observ Surface Water Water Table Saturation Pr (includes cap Describe Rec	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present?	Yes No Yes No Yes No	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp  Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( olain in Re ches): ches): ches):	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)
Sedimer Drift Dep Algal Ma Iron Dep Inundatic Water-S Field Obser Surface Wate Water Table Saturation Pr (includes cap Describe Rec	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present? present? present? corded Data (stream	Yes No Yes No Yes No n gauge, monito	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence o Thin Muck Other (Exp  Depth (inc Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( plain in Re ches): ches): photos, pr	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)
Sedimer Drift Dep Algal Ma Iron Dep Inundatic Water-S Field Obser Surface Wate Water Table Saturation Pr (includes cap Describe Rec	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present?	Yes No Yes No Yes No n gauge, monito	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence o Thin Muck Other (Exp  Depth (inc Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( plain in Re ches): ches): photos, pr	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)
Sedimer Drift Dep Algal Ma Iron Dep Inundatic Water-S Field Obser Surface Wate Water Table Saturation Pr (includes cap Describe Rec	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Vis ble on Aerial tained Leaves (B9) vations: er Present? Present? present? present? corded Data (stream	Yes No Yes No Yes No n gauge, monito	Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence o Thin Muck Other (Exp  Depth (inc Depth (inc	(B11) vertebrate Sulfide O n Water T thizosphe not tilled) of Reduce Surface ( plain in Re ches): ches): photos, pr	dor (C1) Fable (C2 Fres on Lived Iron (C FC7) Fremarks)	ving Roots 4) Wetl	Surface Sparsely Drainag Oxidized (C3) (wher Crayfish Saturati Geomor FAC-Ne Frost-He	Soil Cracks (B6) y Vegetated Concave Surface (B8) e Patterns (B10) d Rhizospheres on Living Roots (C3) e tilled) n Burrows (C8) on Visible on Aerial Imagery (C9) rphic Position (D2) rutral Test (D5) eave Hummocks (D7) (LRR F)

Project/Site: Rostad 2024	(	City/Coun	<sub>nty:</sub> Meaghe	er County	Sampling Date: 2024-06-25
			-		Sampling Point: DP06w
Investigator(s): R Baumgarten					
Landform (hillslope, terrace, etc.): Valley Floor				=	Slope (%): 0
Subregion (LRR): E 46					
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
Are climatic / hydrologic conditions on the site typical for this					<u>-                                    </u>
Are Vegetation, Soil, or Hydrologys					
Are Vegetation, Soil, or Hydrology n					
SUMMARY OF FINDINGS – Attach site map					
,					<u>·                                      </u>
	0		the Sampled		
Wetland Hydrology Present? Yes N	0	Wi	thin a Wetlar	id? Yes	No
Remarks:				-	-
Wetland sample point located near e	ast cer	nter of	f the site	. PEM, depressi	onal.
				<i>,</i> .	
VEGETATION – Use scientific names of plan	ts.				
			nt Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size: 30 ft r )			? Status	Number of Dominant S	•
1				That Are OBL, FACW, (excluding FAC-):	or FAC(A)
2					
3				Total Number of Domin Species Across All Stra	_
7.		= Total C	cover	·	、 ,
Sapling/Shrub Stratum (Plot size: 15 ft r )		rotal o	00001	Percent of Dominant Sp That Are OBL, FACW,	
1				Prevalence Index wor	kshoot:
2					Multiply by:
3					x 1 = 5
4					x 2 = 110
5		= Total C	^over	FAC species 0	x 3 = <u>0</u>
Herb Stratum (Plot size: 5 ft r )		- Total C	ovei		x 4 = <u>160</u>
1. Poa pratensis	40		FACU	UPL species 0	
2. Juncus balticus	30		FACW	Column Totals: 100	(A) <u>275</u> (B)
3. Phalaris arundinacea Carex nebrascensis	<u>25</u> 5		FACW	Prevalence Index	= B/A = 2.75
"-			OBL	Hydrophytic Vegetation	
5				1 - Rapid Test for H	Hydrophytic Vegetation
6				✓ 2 - Dominance Tes	st is >50%
8.				✓ 3 - Prevalence Inde	ex is ≤3.0 <sup>1</sup>
9					Adaptations <sup>1</sup> (Provide supporting s or on a separate sheet)
10					phytic Vegetation <sup>1</sup> (Explain)
	400	= Total C	Cover		
Woody Vine Stratum (Plot size: 30 ft r )  1				'Indicators of hydric soi be present, unless distu	il and wetland hydrology must urbed or problematic.
2				Hydrophytic	
		= Total C	Cover	Vegetation	. <b>V</b> N.
% Bare Ground in Herb Stratum 0	_ <del>_</del>			Present? Ye	s No
Remarks.					
Dominance and prevalence indicator	s met f	or hy	drophytic	c vegetation.	

US Army Corps of Engineers B-45 Great Plains – Version 2.0

SOIL Sampling Point: DP06w

Profile Desc	ription: (Describe	to the dep	oth needed to docur	nent the	indicator	or confir	m the absence of in	dicators.)
Depth	Matrix			x Feature	_	. 2		
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type'	_Loc <sup>2</sup>	Texture	Remarks
0 - 2	10YR 2/2	100		· <del></del>			Sandy Clay	
2 - 16	10YR 5/2	95	10YR 4/6	5	<u> </u>	М	Clay Loam	
-							- <u> </u>	
-								
-								
_								
	-				·		· -	
	-	<del>-</del>					·	
1- 0.0							21 "	
			=Reduced Matrix, CS LRRs, unless other			ed Sand G		n: PL=Pore Lining, M=Matrix.  Problematic Hydric Soils <sup>3</sup> :
Histosol		ouble to un	Sandy (				1 cm Muck	•
	oipedon (A2)			Redox (S				ie Redox (A16) ( <b>LRR F, G, H</b> )
	istic (A3)		-	d Matrix (				ce (S7) ( <b>LRR G</b> )
	en Sulfide (A4)				neral (F1)		<del></del> •	Depressions (F16)
	d Layers (A5) (LRR				atrix (F2)		•	outside of MLRA 72 & 73)
	ick (A9) ( <b>LRR F, G,</b> d Below Dark Surfa		<u>✓</u> Deplete	d Matrix ( Dark Surf			Reduced V	ertic (F18) Material (TF2)
-	ark Surface (A12)	ce (ATT)			urface (F7)	)		w Dark Surface (TF12)
	Mucky Mineral (S1)			Depressio				ain in Remarks)
	Mucky Peat or Peat	. , .	· · · —		essions (F		-	drophytic vegetation and
5 cm Mu	icky Peat or Peat (S	33) ( <b>LRR F</b> )	) (ML	RA 72 &	73 of LRR	<b>H</b> )	-	Irology must be present,
Postrictive	Layer (if present):						uniess disti	urbed or problematic.
Type:	Layer (ii present).							
	ches):						Hydric Soil Pres	sent? Yes V No
Remarks:							1.,	
	anlationa ah		lin accord by	- ri <b>-</b>	indiaa	+	anlated mate	
Redox d	epietions of	servec	l in second h	JIIZOII	indica	ite a u	epieted mati	IX.
HYDROLO	GV							
	drology Indicators		ed; check all that appl	w)			Socondary In	dicators (minimum of two required)
	Water (A1)	one require	sa, check all that appl Salt Crust				-	Soil Cracks (B6)
	ater Table (A2)		Aquatic In		es (B13)			Vegetated Concave Surface (B8)
Saturation			Hydrogen					e Patterns (B10)
	larks (B1)		Dry-Seaso				=	Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized F					e tilled)
Drift Dep	posits (B3)		(where i	not tilled	)		Crayfish	Burrows (C8)
Algal Ma	at or Crust (B4)		Presence			1)		n Visible on Aerial Imagery (C9)
-	oosits (B5)		Thin Muck					phic Position (D2)
	on Vis ble on Aerial	Imagery (E	37) Other (Exp	olain in R	emarks)			utral Test (D5)
	tained Leaves (B9)						Frost-He	ave Hummocks (D7) (LRR F)
Field Obser								
Surface Wat			No Depth (in					
Water Table			No Depth (in				donal Usednal - ··· -	nonta Van V
Saturation P (includes car		Yes _ •	No Depth (in	cnes): <u>11</u>		_ wet	land Hydrology Pre	esent? Yes V No No
		n gauge, m	onitoring well, aerial ¡	ohotos, p	revious ins	pections)	, if available:	
Remarks:								
Saturation	n provides prin	nary hyd	rology indicator	. Geom	orphic i	oositior	and FAC-N are	e additional secondary
indicators	•	, ,	<u> </u>		. '			,

Project/Site: Rostad 2024		City/Co	ounty	: Meaghe	r County	Sampling	Date: 2024	-06-25	
Applicant/Owner: MDT					State: Montana	Sampling	Point: DP07	'u	
Investigator(s): R Baumgarten	Section, Township, Range: S12 T8N R11E								
					convex, none): Linear		Slope (%)	<u>:</u> 2	
Subregion (LRR): E 46									
Soil Map Unit Name: 854B - Varney-Coyoteflats co									
Are climatic / hydrologic conditions on the site typical for th									
Are Vegetation, Soil, or Hydrology	-				Normal Circumstances" p		es 🗸 N	Jn	
Are Vegetation, Soil, or Hydrology					eded, explain any answe				
SUMMARY OF FINDINGS – Attach site map				•			•	es, etc.	
Hydrophytic Vegetation Present? Yes 1	No		lo th	a Campled	Aron				
Hydric Soil Present? Yes !	No V			ie Sampled iin a Wetlan		No_	<b>~</b>		
Hydrophytic Vegetation Present? Yes !  Hydric Soil Present? Yes !  Wetland Hydrology Present? Yes !	No		****	a rrona.					
Upland sample point located near s	outheas	t co	rne	r of the	site.				
VEGETATION – Use scientific names of plan	240								
VEGETATION - Use scientific flames of plan	Absolute	Dom	inant	Indicator	Dominance Test work	sheet			
Tree Stratum (Plot size: 30 ft r	% Cover				Number of Dominant S				
1					That Are OBL, FACW, (	or FAC	0	<b>(\</b> \)	
2					(excluding FAC-):	-		(A)	
3					Total Number of Domin Species Across All Stra		2	(B)	
4						_		_ (D)	
Sapling/Shrub Stratum (Plot size: 15 ft r					Percent of Dominant Sp That Are OBL, FACW,		0.00	(A/B)	
1 2					Prevalence Index wor	ksheet:			
3.					Total % Cover of:		Multiply by:		
4.					•	x 1			
5.					FACW species 17				
		= Tota	al Co	ver	FAC species 0				
Herb Stratum (Plot size: 5 ft r	40		,	UPL		x 4 x 5			
1. Bromus inermis 2. Poa pratensis	<del></del>			FACU	UPL species 50 Column Totals: 97			(B)	
3. Juncus balticus	15			FACW	Column rolais.	(A)		(D)	
4. Carum carvi	- <del>10</del>			UPL	Prevalence Index	= B/A = _	4.16	_	
5. Phleum pratense	5			FACU	Hydrophytic Vegetation	n Indicato	ors:		
6. Carex praegracilis	2			FACW	1 - Rapid Test for H	-lydrophytic	Vegetation		
7.					2 - Dominance Tes				
8.					3 - Prevalence Inde		4		
9					4 - Morphological A data in Remarks	daptations	s' (Provide su <sub>l</sub> enarate sheet	pporting )	
10					Problematic Hydro				
Woody Vine Stratum (Plot size: 30 ft r	97	= Tota	al Co	ver	<sup>1</sup> Indicators of hydric soi be present, unless distu	l and wetla	nd hydrology		
1						bca or pro	obicinatio.		
2					Hydrophytic Vegetation				
% Bare Ground in Herb Stratum 3		= Tota	al Co	ver		s	No		
Remarks:					<u>I</u>				
No indicators met for hydrophytic v	enetatio	n F	)On	ninated	hy smooth bron	ne and	Kentuck	(V	
	cgctatic	/II. L	<i>-</i>	mateu	by Sillouth biol	ne and	KCHICK	\ y	
blue grass.									

US Army Corps of Engineers B-47 Great Plains – Version 2.0

SOIL Sampling Point: DP07u

Profile Desc	ription: (Describe	to the depth	n needed to docu	ment the	indicator	or confire	m the absence of i	indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	<u> %</u> _	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 16	10YR 3/2	98	10YR 4/6		С	М	Sandy Clay Loam	
-								
	-							
	-						· <del></del>	
	-			-			· <del></del>	-
				_		-	. <u></u>	
<sup>1</sup> Type: C=Co	oncentration, D=Dep	oletion, RM=F	Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	Grains. <sup>2</sup> Locatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applic	able to all L	RRs, unless othe	rwise not	ed.)		Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy	Gleyed Ma	atrix (S4)		1 cm Mucl	k (A9) ( <b>LRR I, J</b> )
Histic Ep	pipedon (A2)		Sandy	Redox (S5	5)			irie Redox (A16) (LRR F, G, H)
Black His				d Matrix (S	,			ace (S7) (LRR G)
	n Sulfide (A4)		-	Mucky Mi				s Depressions (F16)
	Layers (A5) (LRR	,	-	Gleyed M			,	l outside of MLRA 72 & 73)
	ck (A9) (LRR F, G,			ed Matrix (			Reduced \	` ,
	l Below Dark Surfac ark Surface (A12)	e (ATT)	_	Dark Surfa ed Dark Sเ	` '	`		nt Material (TF2) low Dark Surface (TF12)
	lucky Mineral (S1)			Depressio	•	)		plain in Remarks)
	lucky Peat or Peat (	(S2) ( <b>LRR G</b> .		ains Depr	` ,	16)		nydrophytic vegetation and
	cky Peat or Peat (S	`	·	RA 72 &				drology must be present,
_	,	, ,	,			,	-	turbed or problematic.
Restrictive L	ayer (if present):							
Type:								
Depth (inc	ches):						Hydric Soil Pre	esent? Yes No
Remarks:								
Redox o	bserved but	did not	satisfy crite	ria red	nuired	for hy	dric soil indi	icators
redux o	boci ved bat	ala Hot	Satisfy Crite	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	quiica	101 119		icators.
HYDROLO	CV.							
_	drology Indicators:		-hlll 4h -4	L. A			0	
-	ators (minimum of c	one requirea;						ndicators (minimum of two required)
	Water (A1)		Salt Crust		(D.40)			Soil Cracks (B6)
_	ter Table (A2)		Aquatic In					y Vegetated Concave Surface (B8)
Saturatio			Hydrogen				_	ge Patterns (B10)
·	arks (B1)		Dry-Seaso					d Rhizospheres on Living Roots (C3)
' <del></del>	t Deposits (B2)		Oxidized			ing Roots		re tilled)
	oosits (B3)		•	not tilled)		4)	<del></del> ,	n Burrows (C8)
	t or Crust (B4)		Presence			4)		ion Visible on Aerial Imagery (C9)
	osits (B5)	l (D.7)	Thin Mucl					rphic Position (D2)
	on Vis ble on Aerial	imagery (B7)	Other (Ex	piain in Re	emarks)			eutral Test (D5)
	tained Leaves (B9)					1	FIOSI-FI	eave Hummocks (D7) (LRR F)
Field Observ		/ N	- V Danith (in	-1 > -				
Surface Water			o Depth (in					
Water Table			o Depth (in					
Saturation Pr (includes cap		res N	o V Depth (in	ches):		Wet	iand Hydrology Pr	resent? Yes No
	corded Data (stream	n gauge, mor	nitoring well, aerial	photos, pr	evious ins	spections)	, if available:	
	`	- <del>-</del>	- '	• •		,		
Remarks:								
No ovida	ance of woth	and byd	rology obso	rvad				
INO EVIUE	ence of wetla	and nyu	i didgy duse	ı veu.				

Project/Site: Rostad 2024	(	City/County	,: Meaghe	er County	Sampling Date: 2024-06-25
		-			Sampling Point: DP07w
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): 10
Subregion (LRR): E 46	Lat: 46.	463414		Long: -110.291673	Datum: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	✓ No _	(If no, explain in R	lemarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly of	disturbed?	Are "	'Normal Circumstances" p	oresent? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally prol	blematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes   No  No  No  No  No  No  No  No  No  N	o		ne Sampled nin a Wetlar		No
PEM, Slope wetland at east end of si	te.				
VEGETATION – Use scientific names of plant	ts.				
Tree Stratum (Plot size: 30 ft r		Dominant		Dominance Test work	
1	% Cover			Number of Dominant Sport That Are OBL, FACW, or	•
2.				(excluding FAC-):	<u>2</u> (A)
3				Total Number of Domin	
4				Species Across All Stra	ata: <u>3</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r )		= Total Co		Percent of Dominant Sp That Are OBL, FACW, of	
1				Prevalence Index wor	ksheet:
3.					Multiply by:
4					x 1 = 20
5					x 2 = 40
5 ft v		= Total Co	ver		x 3 = 0 $x 4 = 200$
Herb Stratum (Plot size: 5 ft r  1. Poa pratensis	45	~	FACU	FACU species 50 UPL species 0	
2 Carex nebrascensis	20	<u> </u>	OBL	Column Totals: 90	
3 Juncus balticus	20		FACW		
4. Phleum pratense	5		FACU	Prevalence Index	
5				Hydrophytic Vegetation	
6				1 - Rapid Test for F	
7				<ul><li>✓ 2 - Dominance Tes</li><li>✓ 3 - Prevalence Inde</li></ul>	
8					ex is \$3.0  Adaptations <sup>1</sup> (Provide supporting
9					s or on a separate sheet)
10	~~			Problematic Hydro	phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1		= Total Co		<sup>1</sup> Indicators of hydric soi be present, unless distu	il and wetland hydrology must urbed or problematic.
% Bare Ground in Herb Stratum 10		= Total Co		Hydrophytic Vegetation Present? Ye	s No
PEM, dominance test passed as indic				vegetation.	

SOIL Sampling Point: DP07w

	•	to the dep				or confi	rm the absence of ind	icators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	S Type <sup>1</sup>	Loc <sup>2</sup>	 Texture	Remarks
0 - 10	10YR 3/1	98	10YR 4/6	2	C	M	Sandy Clay Loam	romano
10 - 15	10YR 4/2	95	10YR 4/4	- <del>-</del> 5	<u> </u>	M	Sandy Clay	
10 - 13	101K 4/2	_ 95	101144/4			IVI	Salidy Clay	
				_		-		
-								
-								
<sup>1</sup> Type: C=Ce	oncentration. D=De	oletion. RM	=Reduced Matrix, C	S=Covere	d or Coat	ed Sand	Grains. <sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
			LRRs, unless othe			ou ounu		oblematic Hydric Soils <sup>3</sup> :
Histosol			Sandy				1 cm Muck (A	(A9) (LRR I, J)
Histic Ep	oipedon (A2)		Sandy	Redox (S	5)		Coast Prairie	Redox (A16) (LRR F, G, H)
Black Hi	` '			d Matrix (	,		Dark Surface	
	en Sulfide (A4)	<b>-</b> \		Mucky Mi	. ,	1	_	Depressions (F16)
	d Layers (A5) ( <b>LRR</b> uck (A9) ( <b>LRR F, G,</b>			Gleyed M ed Matrix (	, ,		Reduced Ver	utside of MLRA 72 & 73)
	d Below Dark Surfac		✓ Redox				Red Parent N	` '
Thick Da	ark Surface (A12)		Deplete	ed Dark Si	ırface (F7	<b>'</b> )		Dark Surface (TF12)
	Mucky Mineral (S1)			Depression	. ,			n in Remarks)
	Mucky Peat or Peat ucky Peat or Peat (S			lains Depr <b>₋RA 72 &amp;</b>		•		rophytic vegetation and plogy must be present,
5 CITI IVIL	icky real of real (S	55) ( <b>LKK F</b> )	(IVIL	-KA 12 &	/3 01 LKI	ХΠ)		ped or problematic.
Restrictive I	Layer (if present):							,
Type:								
Depth (in	ches):						Hydric Soil Prese	nt? Yes <u>′</u> No
Remarks:								
Redox d	ark surface	found a	at this data p	oint				
I TOUGH U	ark sarrass	ioana c	at timo data p	Oiric.				
HYDROLO	GY							
	drology Indicators	•						
			d; check all that app	lv)			Secondary Indi	cators (minimum of two required)
	Water (A1)		Salt Crust					oil Cracks (B6)
	ater Table (A2)		Aquatic In		es (B13)			egetated Concave Surface (B8)
Saturation			Hydrogen				Drainage F	= : : :
Water M	larks (B1)		Dry-Seaso	on Water <sup>-</sup>	Table (C2	)	Oxidized R	thizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2)		Oxidized	Rhizosphe	eres on Liv	ving Root	ts (C3) (where t	illed)
Drift Dep				not tilled)			<del></del> •	urrows (C8)
_	at or Crust (B4)		Presence		•	4)		Visible on Aerial Imagery (C9)
Iron Dep			Thin Mucl					ic Position (D2)
	on Vis ble on Aerial	Imagery (B	7) Other (Ex	plain in Re	emarks)		FAC-Neutr	
Field Obser	tained Leaves (B9)						F105t-Heav	ve Hummocks (D7) (LRR F)
Surface Wat		/ec	No Depth (in	iches).				
Water Table			No Depth (in					
Saturation P			No Pepth (in				atland Hydrology Pres	ent? Yes V No No
(includes car	oillary fringe)						,	- NO
Describe Re	corded Data (strean	n gauge, m	onitoring well, aerial	photos, pi	evious in	spections	s), if available:	
Remarks:								
	. 1. 1						*	
Geomorp	onic position a	and FAC	-neutral test	provid	e seco	ndary	indicators for w	etland hydrology.

Project/Site: Rostad 2024	(	City/Cour	<sub>nty:</sub> Meaghe	r County	Sampling Date: 2024-06-25
Applicant/Owner: MDT				State: Montana	Sampling Point: DP08u
Investigator(s): McEldowney		Section,	Township, Rai	nge: S12 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): 15
Subregion (LRR): E 46	Lat: 46.	463923	3	Long: -110.292325	Datum: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes	✓ No_	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly of	disturbed	l? Are "	Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally prol	olematic	? (If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	sampl	ing point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes N	o 🗸		the Commissi	Avon	
Hydric Soil Present? Yes N	o		the Sampled ithin a Wetlan		No
Wetland Hydrology Present? Yes N	o <u> </u>	•	itiliii a vvetiai	iu: 165	
Remarks:					
Upland sample point in the northeas	t portio	n of t	he site.		
VEGETATION – Use scientific names of plan	ts.				
		Domina	ant Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size: 30 ft r	% Cover	Species	s? Status	Number of Dominant Sp	pecies
1				That Are OBL, FACW, (excluding FAC-):	or FAC 1 (A)
2				(excluding r AC-).	(A)
3				Total Number of Domini Species Across All Stra	_
4					
Sapling/Shrub Stratum (Plot size: 15 ft r )		= rotarc	over	Percent of Dominant Sp That Are OBL, FACW, of	
1.					(*=*,
2				Prevalence Index worl	
3				Total % Cover of: OBL species 0	<u>Multiply by:</u> x 1 = 0
4					x 2 = 70
5					x 3 = 0
Herb Stratum (Plot size: 5 ft r		= Total C	Cover		x 4 = 260
1. Elymus trachycaulus	60	•	FACU	UPL species 0	
2. Phalaris arundinacea	35	<b>'</b>	FACW	Column Totals: 100	(A) <u>330</u> (B)
3. Poa pratensis	5		FACU	Prevalence Index	D/A 3 30
4				Hydrophytic Vegetation	
5				1 - Rapid Test for H	
6				2 - Dominance Tes	
7				3 - Prevalence Inde	
8					adaptations <sup>1</sup> (Provide supporting
9					s or on a separate sheet)
10	400	= Total C		Problematic Hydror	ohytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1				<sup>1</sup> Indicators of hydric soil be present, unless distu	l and wetland hydrology must irbed or problematic.
2.				Hydrophytic	
_				Vegetation	s No
% Bare Ground in Herb Stratum 0				Present? Yes	> NU
Remarks:					
Upland sample point dominated by s	lender	whea	tgrass ar	nd the invasive r	eed canary grass.

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SOIL Sampling Point: DP08u

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

Depth	Matrix		Redox Features			
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 16	10YR 3/1	100		:	Sandy Clay	Soil is moist.
	_					
-						
-						
¹Type: C=C	oncentration D=Dec	oletion PM=Pe	duced Matrix, CS=Covered or Coate	nd Sand Grai	ine <sup>2</sup> l o	cation: PL=Pore Lining, M=Matrix.
			Rs, unless otherwise noted.)	u Sanu Gra		for Problematic Hydric Soils <sup>3</sup> :
-		able to all Livi				•
Histosol			Sandy Gleyed Matrix (S4)			Muck (A9) ( <b>LRR I, J</b> )
-	oipedon (A2)		Sandy Redox (S5)			Prairie Redox (A16) (LRR F, G, H)
_	stic (A3)		Stripped Matrix (S6)			Surface (S7) (LRR G)
Hydroge	en Sulfide (A4)		Loamy Mucky Mineral (F1)		High F	Plains Depressions (F16)
Stratified	d Layers (A5) ( <b>LRR</b>	F)	Loamy Gleyed Matrix (F2)		(LF	RR H outside of MLRA 72 & 73)
1 cm Mu	ıck (A9) ( <b>LRR F, G,</b>	H)	Depleted Matrix (F3)		Reduc	ced Vertic (F18)
Depleted	d Below Dark Surfac	ce (A11)	Redox Dark Surface (F6)		Red P	arent Material (TF2)
Thick Da	ark Surface (A12)		Depleted Dark Surface (F7)	)	Very S	Shallow Dark Surface (TF12)
Sandy M	Mucky Mineral (S1)		Redox Depressions (F8)		Other	(Explain in Remarks)
2.5 cm N	Mucky Peat or Peat	(S2) ( <b>LRR G, H</b>	) High Plains Depressions (F <sup>2</sup>	16)	<sup>3</sup> Indicators	of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) (LRR F)	(MLRA 72 & 73 of LRR	: <b>H</b> )	wetlan	d hydrology must be present,
					unless	s disturbed or problematic.
Restrictive I	Layer (if present):					·
Type:	, , ,					
	-l\·		_		Uhadaia Cail	December Voc. No. V
Depth (inc	cries)		_		Hydric Soil	Present? Yes No
Remarks:						
No bydr	ic soil indica	tare abea	ryod			
NO Hydr		tors obse	i ved.			
<b>HYDROLO</b>	GY					
Wetland Hy	drology Indicators	•				
_			and all that apply)		Cocond	and Indicators (minimum of two required)
	cators (minimum of	one required, ci				ary Indicators (minimum of two required)
	Water (A1)		Salt Crust (B11)		·	face Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic Invertebrates (B13)		Spa	rsely Vegetated Concave Surface (B8)
Saturation	on (A3)		Hydrogen Sulfide Odor (C1)		Dra	inage Patterns (B10)
Water M	larks (B1)		Dry-Season Water Table (C2)		Oxio	dized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized Rhizospheres on Livi	ina Roots (C	C3) (w	vhere tilled)
·	posits (B3)		(where not tilled)		,	yfish Burrows (C8)
	at or Crust (B4)		Presence of Reduced Iron (C4	1\		uration Visible on Aerial Imagery (C9)
	` '			+)		
	oosits (B5)		Thin Muck Surface (C7)			omorphic Position (D2)
Inundation	on Vis ble on Aerial	Imagery (B7)	Other (Explain in Remarks)		FAC	C-Neutral Test (D5)
Water-S	tained Leaves (B9)				Fros	st-Heave Hummocks (D7) (LRR F)
Field Obser	vations:					
Surface Water	er Present?	/es No	Depth (inches):			
Water Table	Present?	res No	Depth (inches):			
Saturation P			Depth (inches):		nd Hudrala-	y Present? Yes No
(includes cap		res NO	Deptil (iliches).	_   Wellai	na nyarolog	y Fresent? Tes NO
Describe Re		n dalide monito	oring well, aerial photos, previous insp	pections), if	available:	
	corded Data (strean	i gauge, mome		. ,,		
	corded Data (strean	r gauge, monite				
Domestics	corded Data (strean	r gauge, monite				
Remarks:	corded Data (strean	r gauge, morne				
			observed. Data point is 4 fe	et higher	r in elevat	ion than its wetland pair.
				et higher	r in elevat	ion than its wetland pair.
				et higher	r in elevat	ion than its wetland pair.

Project/Site: Rostad 2024	(	City/Count	<sub>y:</sub> Meaghe	er County	Sampling Date: 2024-06-25
	_	•		State: Montana	Sampling Point: DP08w
Investigator(s): R Baumgarten					
Landform (hillslope, terrace, etc.): Valley Floor				-	e Slope (%): 1
Subregion (LRR): E 46					
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
Are climatic / hydrologic conditions on the site typical for this					<u> </u>
Are Vegetation, Soil, or Hydrologys					_
Are Vegetation, Soil, or Hydrologyn					
SUMMARY OF FINDINGS – Attach site map	showing	samplii	ng point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes N.  Yes N.	0		he Sampled hin a Wetlar		No
Wetland sample point located near r	orthea	st corr	ner of th	e site. PEM, slop	pe.
VEGETATION – Use scientific names of plan	ts.				
Tree Stratum (Plot size: _30 ft r)			t Indicator	Dominance Test work	sheet:
1	% Cover			Number of Dominant Sp That Are OBL, FACW, of	•
2.				(excluding FAC-):	3 (A)
3.				Total Number of Domin	
4				Species Across All Stra	ta: <u>3</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r				Percent of Dominant Sp That Are OBL, FACW, of	
1				Prevalence Index wor	ksheet:
3.					Multiply by:
4					x 1 = 0
5				*	x 2 = 200
List of the State		= Total Co	over		x 3 = 0 x 4 = 0
Herb Stratum (Plot size: 5 ft r )  1. Poa palustris	45	~	FACW	UPL species 0	
2 Phalaris arundinacea	35	~	FACW	Column Totals: 100	
3. Alopecurus arundinaceus	20	~	FACW		
4				Prevalence Index	<del></del>
5				Hydrophytic Vegetatio	
6				<ul><li>✓ 1 - Rapid Test for F</li><li>✓ 2 - Dominance Tes</li></ul>	
7				✓ 3 - Prevalence Inde	
8				<del></del>	Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks	s or on a separate sheet)
10	400	= Total Co		Problematic Hydrop	phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1				<sup>1</sup> Indicators of hydric soi be present, unless distu	l and wetland hydrology must urbed or problematic.
2		= Total Co	over	Hydrophytic Vegetation Present? Yes	s No
Remarks:					
Dominance test passed as indicator	ot hydr	ophyti	c veget	ation.	

SOIL Sampling Point: DP08w

	•	to the dep	otn needed to docum			or commi	i the absence	or indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature: %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 2	10YR 3/1	100					Clay Loam	
2 - 16	10YR 5/1	95	N 2.5/0	5		М	Silty Clay	
	1011(3/1		14 2.5/0	<del>-</del>		141	Only Olay	<u> </u>
-								
-								
1Type: C=Co	ncentration D=Der	letion RM	=Reduced Matrix, CS	=Covered	d or Coate	d Sand Gr	rains <sup>2</sup> l oc	ation: PL=Pore Lining, M=Matrix.
			LRRs, unless other			u Garia Gi		for Problematic Hydric Soils <sup>3</sup> :
Histosol				Sleyed Ma				luck (A9) (LRR I, J)
	ipedon (A2)		·	Redox (S5				Prairie Redox (A16) (LRR F, G, H)
Black His	stic (A3)		Stripped	Matrix (S	36)			urface (S7) (LRR G)
	n Sulfide (A4)			-	neral (F1)		_	ains Depressions (F16)
	Layers (A5) (LRR			Gleyed Ma	, ,		,	R H outside of MLRA 72 & 73)
	ck (A9) ( <b>LRR F, G,</b> Below Dark Surfac		<u>✓</u> Deplete	o Matrix (1 Dark Surfa	,			ed Vertic (F18) rent Material (TF2)
	rk Surface (A12)	C (A11)	_		rface (F7)	ı		nallow Dark Surface (TF12)
Sandy M	ucky Mineral (S1)			Depressio	` '		-	Explain in Remarks)
2.5 cm M	lucky Peat or Peat (	(S2) ( <b>LRR</b>	G, H) High Pla	ins Depre	essions (F	16)	<sup>3</sup> Indicators of	of hydrophytic vegetation and
5 cm Mu	cky Peat or Peat (S	3) ( <b>LRR F</b> )	) (ML	RA 72 & 7	73 of LRR	<b>H</b> )		hydrology must be present,
Dantuintius I	(if						unless	disturbed or problematic.
	ayer (if present):							
Type:	In a a No						Hardela Call	D
Depth (inc	:hes):						Hydric Soil	Present? Yes No
	d matrix obs	erved a	as hydric soil	indica	tor.			
HYDROLO	GY							
Wetland Hyd	Irology Indicators:							
-			ed; check all that apply	<b>/</b> )			Seconda	ry Indicators (minimum of two required)
✓ Surface \	Water (A1)		Salt Crust	(B11)			Surfa	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic Inv	ertebrate	s (B13)		Spar	sely Vegetated Concave Surface (B8)
✓ Saturation	n (A3)		Hydrogen	Sulfide O	dor (C1)			nage Patterns (B10)
Water Ma	arks (B1)		Dry-Seaso	n Water T	able (C2)		Oxid	ized Rhizospheres on Living Roots (C3)
Sedimen	t Deposits (B2)		Oxidized R	hizosphe	res on Liv	ing Roots	(C3) (w	here tilled)
Drift Dep	osits (B3)		(where r	ot tilled)				fish Burrows (C8)
_	t or Crust (B4)		Presence			1)		ration Visible on Aerial Imagery (C9)
	osits (B5)		Thin Muck					morphic Position (D2)
	on Vis ble on Aerial	Imagery (E	37) Other (Exp	lain in Re	marks)		<del></del>	-Neutral Test (D5)
	ained Leaves (B9)						Fros	t-Heave Hummocks (D7) (LRR F)
Field Observ		/aa <b>/</b>	No. Dente "	shock 1				
Surface Water			No Depth (inc			-		
Water Table		_	No Depth (inc				- ا - سام ما المسم	Draggart 2 Van V
Saturation Pr (includes cap		es <u> </u>	No Depth (inc	cnes): <u>U</u>		weti	and Hydrology	Present? Yes No No
		gauge, m	onitoring well, aerial p	ohotos, pr	evious ins	pections),	if available:	
Domarka								
Remarks:  Multiple i	ndicators obs	served	for wetland hy	drolog	y. Surf	ace wa	ter very clo	ose to sample point.
				_				

Project/Site: Rostad 2024	(	City/Cou	<sub>nty:</sub> Meaghe	er County	Sampling Date: 2	024-06-25
Applicant/Owner: MDT		-	-	State: Montana		
Investigator(s): McEldowney						
Landform (hillslope, terrace, etc.): Valley Floor					e Slop	e (%): 3
Subregion (LRR): E 46						
Soil Map Unit Name: 854B - Varney-Coyoteflats cor						
Are climatic / hydrologic conditions on the site typical for this					·	
Are Vegetation, Soil, or Hydrologys						No
Are Vegetation, Soil, or Hydrology r						
SUMMARY OF FINDINGS – Attach site map						ntures, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	o		the Sampled		No	
Upland data point roughly 1.5 feet higher in embankment.	elevatio	n com <sub>l</sub>	pared to it	s wetland pair. Loca	ated on the co	nstructed
VEGETATION – Use scientific names of plan	ts.					
Tree Stratum (Plot size: 30 ft r )	% Cover	Specie		Dominance Test work  Number of Dominant S That Are OBL, FACW, (excluding FAC-):	pecies or FAC	(A)
2	<u> </u>			Total Number of Domin Species Across All Stra	_	
Sapling/Shrub Stratum (Plot size: 15 ft r )			Cover	Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
2.				Prevalence Index wor		
3				Total % Cover of:		
4				OBL species 0 FACW species 5		
5					x 2 = 10 x 3 = 0	
Herb Stratum (Plot size: 5 ft r )		= Total (	Cover		x 4 = 220	
1. Elymus trachycaulus	55	~	FACU	UPL species 40		
2. Bromus inermis	40	~	UPL	Column Totals: 100	(A) 430	
3. Phalaris arundinacea	5		FACW	Prevalence Index	= B/A = 4.30	
4				Hydrophytic Vegetation		
5				1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde	et is >50%	tion
9.				4 - Morphological A	Adaptations <sup>1</sup> (Provides or on a separate s	de supporting sheet)
10	400			Problematic Hydro	phytic Vegetation <sup>1</sup> (	Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1.		= Total (		<sup>1</sup> Indicators of hydric soi be present, unless distu		
2 % Bare Ground in Herb Stratum			Cover	Hydrophytic Vegetation Present? Ye	s No	<u>,                                    </u>
Remarks: Upland grass community.						

SOIL Sampling Point: DP09u

	ription: (Describe	to the depth				or commit	i uie abseiice	or murcators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 16	10YR 3/2	100	,,	·			Sandy Clay Loam	Gravelly
								<del> </del>
								<u> </u>
-								
-								
¹Type: C=Co	ncentration, D=Dep	aletion PM=P4	aduced Matrix CS	S=Covered	l or Coate	d Sand Gr	raine <sup>2</sup> l or	cation: PL=Pore Lining, M=Matrix.
	ndicators: (Applic					u Sanu Si		for Problematic Hydric Soils <sup>3</sup> :
Histosol				Gleyed Ma				fluck (A9) (LRR I, J)
· <del></del>	ipedon (A2)			Redox (S5)	. ,			Prairie Redox (A16) ( <b>LRR F, G, H</b> )
Black His	stic (A3)		Stripped	d Matrix (S	6)		Dark S	surface (S7) (LRR G)
	n Sulfide (A4)		-	Mucky Min			_	lains Depressions (F16)
	Layers (A5) (LRR			Gleyed Ma			,	R H outside of MLRA 72 & 73)
	ck (A9) ( <b>LRR F, G,</b> l Below Dark Surfac			d Matrix (F Dark Surfa	,			ed Vertic (F18) arent Material (TF2)
	rk Surface (A12)	O (7111)		d Dark Su	` '			hallow Dark Surface (TF12)
Sandy M	ucky Mineral (S1)		Redox	Depressior	ns (F8)			Explain in Remarks)
	lucky Peat or Peat (			ains Depre				of hydrophytic vegetation and
5 cm Mu	cky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	.RA 72 & 7	3 of LRR	H)		d hydrology must be present,
Postrictivo I	ayer (if present):						unless	disturbed or problematic.
	ayer (ii present).							
Type:	shoo):		_				Hudria Cail	Procent? Voc. No.
	:hes):		<u> </u>				Hydric Soil	Present? Yes No
Remarks:								
No hydri	c soil indicat	tors obse	erved. Soil i	is dry.				
HYDROLO	GY							
Wetland Hyd	Irology Indicators:							
-	ators (minimum of o		check all that appl	v)			Seconda	ary Indicators (minimum of two required)
	Water (A1)		Salt Crust	•				ace Soil Cracks (B6)
	ter Table (A2)		Aquatic In	` '	s (B13)			rsely Vegetated Concave Surface (B8)
Saturatio	, ,		Hydrogen	Sulfide Oc	dor (C1)			nage Patterns (B10)
Water Ma	arks (B1)		Dry-Seaso	on Water T	able (C2)		Oxio	dized Rhizospheres on Living Roots (C3)
Sedimen	t Deposits (B2)		Oxidized F	Rhizospher	res on Livi	ng Roots	(C3) (w	here tilled)
Drift Dep	osits (B3)		(where	not tilled)			Cra	fish Burrows (C8)
	t or Crust (B4)		Presence			.)		ration Visible on Aerial Imagery (C9)
-	osits (B5)		Thin Muck					morphic Position (D2)
	on Vis ble on Aerial	lmagery (B7)	Other (Exp	olain in Re	marks)			c-Neutral Test (D5)
	ained Leaves (B9)					<u> </u>	Fros	st-Heave Hummocks (D7) (LRR F)
Field Observ		,	<b>V</b> 5 4 6					
Surface Water			Depth (in					
Water Table			Depth (in			l l		
Saturation Pr (includes cap		es No	Depth (in	ches):		_   Wetia	and Hydrolog	y Present? Yes No
	corded Data (stream	gauge, monit	oring well, aerial	photos, pre	evious ins	pections),	if available:	
Remarks:								
No ovida	ance of wetle	and bydr	ology obco	ryod				
ino evide	ence of wetla	and mydro	ology obse	i ved.				

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad 2024	(	City/Co	unty:	Meaghe	er County	Samplin	g Date: 2	2024-06-25
		-	-		State: Montana		-	
• •					nge: S12 T8N R11E		_	
Landform (hillslope, terrace, etc.): Valley Floor						e	Slop	e (%): 2
Subregion (LRR): <u>E 46</u> Lat: <u>46.463716</u> Long: <u>-110.293652</u> Datum: <u>NAD 83</u>								
Soil Map Unit Name: 854B - Varney-Coyoteflats con								
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	s_•	No	(If no, explain in R	lemarks.)		
Are Vegetation, Soil, or Hydrologys								No
Are Vegetation, Soil, or Hydrologyn								
SUMMARY OF FINDINGS – Attach site map	showing	samp	oling	g point l	ocations, transects	, impor	tant fea	atures, etc.
Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes V Yes No	o	,		e Sampled n a Wetlar		No		
Sample point taken next to an inunda		еа.						
VEGETATION – Use scientific names of plant	Absolute	Domir	ant	Indicator	Dominance Test work	rohooti		
1	% Cover	Speci	es?	Status	Number of Dominant S That Are OBL, FACW, (excluding FAC-):	pecies	2	(A)
2								(^)
3					Total Number of Domir Species Across All Stra		2	(B)
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total	Cov	er	Percent of Dominant S That Are OBL, FACW,		100.00	(A/B)
1. Salix exigua	10			FACW				(,,,,,
2					Prevalence Index wor Total % Cover of:		Multiply	bv:
3						x		by.
4					FACW species 85			
5					· · · · · · · · · · · · · · · · · · ·		3 = 0	
Herb Stratum (Plot size: 5 ft r	10	= Total	Cov	er		^		
1 Phalaris arundinacea	70	~		FACW	UPL species 0			
2. Eleocharis palustris	10			OBL	Column Totals: 100		200	(B)
3. Alopecurus arundinaceus	5			FACW				(
4. Elymus repens	5			FACU	Prevalence Index			
5.					Hydrophytic Vegetation			
6.					✓ 1 - Rapid Test for I			tion
7					<u>✓</u> 2 - Dominance Tes			
8					✓ 3 - Prevalence Ind			
9					4 - Morphological / data in Remark	Adaptation s or on a	ns' (Provid separate :	de supporting sheet)
10					Problematic Hydro		•	•
Woody Vine Stratum (Plot size: 30 ft r )	90	= Total	Cov	er	<sup>1</sup> Indicators of hydric so	il and wet	land hydro	ology must
1					be present, unless dist	arbed or p	problemat	IC.
2					Hydrophytic			
% Bare Ground in Herb Stratum 10		= Total	Cov	er	Vegetation Ye	s/	No	
Remarks:								
Evidence of hydrophytic vegetation i		•	osi	itive ra	pid test, a posit	ive do	minar	ice test,

US Army Corps of Engineers B-57 Great Plains – Version 2.0

SOIL Sampling Point: DP09w

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confire	m the absence of in	dicators.)
Depth	Matrix			ox Feature	es			
(inches)	Color (moist)		Color (moist)	%	Type'	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0 - 5	10YR 5/1	90	N 3/0	10	<u>D</u>	M	Sandy Clay	
5 - 16	10YR 5/2	100					Sandy Clay Loam	
-								
-								
_				_	_			
					_			
					_			
	-						·	
			Reduced Matrix, C			ed Sand G		: PL=Pore Lining, M=Matrix.
		cable to all	LRRs, unless othe					Problematic Hydric Soils <sup>3</sup> :
Histosol	` '		Sandy	-			1 cm Muck	(A9) ( <b>LRR I, J</b> ) ie Redox (A16) ( <b>LRR F, G, H</b> )
Black Hi	oipedon (A2)			Redox (Sad Matrix (				ce (S7) (LRR G)
	n Sulfide (A4)			•	ineral (F1)			Depressions (F16)
	Layers (A5) (LRR	F)		-	latrix (F2)		_	outside of MLRA 72 & 73)
1 cm Mu	ıck (A9) ( <b>LRR F, G</b> ,	H)	<u></u> ✓ Deplete	ed Matrix	(F3)		Reduced Ve	ertic (F18)
	Below Dark Surfa	ce (A11)		Dark Surf	` '			Material (TF2)
	ark Surface (A12)  Mucky Mineral (S1)			ed Dark S Depression	urface (F7	)		w Dark Surface (TF12) ain in Remarks)
	lucky Milleral (ST) /lucky Peat or Peat	(S2) (I RR (	_	•	ressions (F	16)		drophytic vegetation and
	icky Peat or Peat (S		· · — •		73 of LRF	•		rology must be present,
							unless distu	irbed or problematic.
Restrictive I	_ayer (if present):							
Type:								_
Depth (inc	ches):		<del></del>				Hydric Soil Pres	sent? Yes V No No
Remarks:								
Distinct	redoximorp	hic depl	etions comr	non w	ithin d	eplete	d matrix.	
						-		
HYDROLO	GY							
	drology Indicators							
-			d; check all that app	lv)			Secondary In	dicators (minimum of two required)
<u>✓</u> Surface	•	one required	Salt Crus					Soil Cracks (B6)
	iter Table (A2)		Aquatic Ir		es (B13)			Vegetated Concave Surface (B8)
✓ Saturation	` ,		Hydrogen				-	Patterns (B10)
Water M			Dry-Seas			)		Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized				(C3) (where	tilled)
	oosits (B3)		(where	not tilled	)		Crayfish	Burrows (C8)
Algal Ma	at or Crust (B4)		Presence	of Reduc	ed Iron (C	4)		n Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)		Thin Muc	k Surface	(C7)			phic Position (D2)
	on Vis ble on Aerial	Imagery (B7	7) Other (Ex	plain in R	emarks)			ıtral Test (D5)
	tained Leaves (B9)						Frost-He	ave Hummocks (D7) (LRR F)
Field Obser		.,		4				
Surface Water			No Depth (ir					
Water Table			No Depth (ir					
Saturation P		Yes I	No Depth (ir	nches): 0		Wet	land Hydrology Pre	sent? Yes V No No
(includes cap Describe Re		n gauge, mo	nitoring well, aerial	photos, p	revious ins	pections),	, if available:	
	•	,	<b>3</b> / ·	. , , ,		. /		
Remarks:								
Fyidence	of wetland hve	drology in	ncludes soil sat	turation	gurfac	e water	deomorphic p	osition, and a positive
FAC-Neut	_	ar ology II	ioidaes sull sal	ai atioi	i, Juitau	C Walei	, geomorphic p	osidon, and a positive

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad 2024	(	City/Cou	<sub>ınty:</sub> Mea	gher County	Sampling Date: 2024-06-25	
				State: Montana	Sampling Point: DP10u	
	Section, Township, Range: S12 T8N R11E					
	Local relief (concave, convex, none): Linear Slope (%): 1					
Subregion (LRR): E 46	Lat: 46.	46315	7	Long: -110.295992	Datum: NAD 83	
Soil Map Unit Name: 854B - Varney-Coyoteflats cor						
Are climatic / hydrologic conditions on the site typical for thi	s time of yea	ar? Yes	s_ <b>-/</b> 1	No (If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrologys						
Are Vegetation, Soil, or Hydrology r						
SUMMARY OF FINDINGS – Attach site map	showing	samp	ling poi	nt locations, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	lo		s the Sam vithin a W		No	
Upland point taken near northern bo VEGETATION – Use scientific names of plan		site.				
VEGETATION – Ose scientific fiames of plan		Domin	ant Indica	tor Dominance Test work	shoot:	
Tree Stratum (Plot size: 30 ft r )  1	% Cover	Specie	es? Statu		pecies	
2				Total Number of Domin Species Across All Stra	_	
Sapling/Shrub Stratum (Plot size: 15 ft r )				Percent of Dominant Sp That Are OBL, FACW,		
2.				Prevalence Index wor	ksheet:	
3.					Multiply by:	
4.					x 1 = 0	
5					x 2 = 0	
E ##		= Total	Cover		x 3 = 0 x 4 = 324	
Herb Stratum (Plot size: 5 ft r )  1. Elymus repens	50	~	FACI			
2. Elymus trachycaulus	30		FACI	Of E species		
3. Bromus inermis	10		UPL			
4. Poa pratensis	1		FAC			
5				Hydrophytic Vegetation		
6				1 - Rapid Test for H		
7				3 - Prevalence Inde		
8					Adaptations <sup>1</sup> (Provide supporting	
9				— data in Remarks	s or on a separate sheet)	
10	0.4			— Problematic Hydro	phytic Vegetation <sup>1</sup> (Explain)	
Woody Vine Stratum (Plot size: 30 ft r )  1.		= Total		<sup>1</sup> Indicators of hydric soi be present, unless distu	l and wetland hydrology must urbed or problematic.	
2 % Bare Ground in Herb Stratum 9		= Total	Cover	Hydrophytic Vegetation Present? Ye	s No	
Remarks:  Upland point dominated by FACU ve						

SOIL Sampling Point: DP10u

Profile Desc	ription: (Describe	to the depth ne	eded to docur	nent the in	ndicator o	or confirm	the absence	of indicators.)
Depth	Matrix			x Features			_	
(inches)	Color (moist)		olor (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 8	10YR 4/2	100					Loamy Sand	Refusal at 8
-								
-								
	-	_ ·						
	oncentration, D=Dep					d Sand Gr		ation: PL=Pore Lining, M=Matrix.
Hydric Soil I	Indicators: (Applic	able to all LRRs	s, unless other	wise note	ed.)		Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histosol	` '		Sandy C	-	. ,			luck (A9) ( <b>LRR I, J</b> )
	pipedon (A2)		Sandy F					Prairie Redox (A16) (LRR F, G, H)
Black Hi	` '		Stripped	•	,			urface (S7) (LRR G)
	n Sulfide (A4) d Layers (A5) ( <b>LRR I</b>	<b>=</b> \		Mucky Min	. ,		<b>—</b> ·	lains Depressions (F16) R H outside of MLRA 72 & 73)
	ick (A9) ( <b>LRR F, G,</b> I	•		Gleyed Ma d Matrix (F			`	ed Vertic (F18)
	d Below Dark Surfac	•		Dark Surfa				arent Material (TF2)
-	ark Surface (A12)	( )		d Dark Sui				hallow Dark Surface (TF12)
	lucky Mineral (S1)			Depression				Explain in Remarks)
2.5 cm N	Mucky Peat or Peat (	(S2) ( <b>LRR G, H</b> )		ins Depre		16)	<sup>3</sup> Indicators	of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	RA 72 & 7	3 of LRR	H)	wetland	hydrology must be present,
							unless	disturbed or problematic.
_	_ayer (if present):							
Type:		_						
	ches):						Hydric Soil	Present? Yes No
Remarks:								
No hydri	ic soil indicat	tors obser	ved. Refu	sal at 8	3" dep	th due	to cobbl	es in substrate.
_								
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	cators (minimum of c	one required; che	eck all that apply	y)			Seconda	ry Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surfa	ace Soil Cracks (B6)
	iter Table (A2)		Aquatic Inv		s (B13)			rsely Vegetated Concave Surface (B8)
Saturation	on (A3)		Hydrogen	Sulfide Od	or (C1)			nage Patterns (B10)
Water M	arks (B1)		Dry-Seaso	n Water T	able (C2)		Oxid	lized Rhizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2)		Oxidized F	Rhizospher	es on Livi	ng Roots	(C3) ( <b>w</b>	here tilled)
Drift Dep	oosits (B3)		(where r	not tilled)			Cray	rfish Burrows (C8)
Algal Ma	at or Crust (B4)		Presence	of Reduce	d Iron (C4	)	Satu	ration Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)		Thin Muck	Surface (0	27)		Geo	morphic Position (D2)
Inundation	on Vis ble on Aerial I	Imagery (B7)	Other (Exp	lain in Rei	marks)		FAC	-Neutral Test (D5)
Water-S	tained Leaves (B9)						Fros	t-Heave Hummocks (D7) (LRR F)
Field Observ	vations:							
Surface Water	er Present? Y	'es No _	Depth (inc	ches):		_		
Water Table	Present? Y	'es No _	Depth (inc	ches):		_		
Saturation Pr		'es No	✓ Depth (inc	ches):		Wetla	and Hydrology	/ Present? Yes No
(includes cap	oillary fringe) corded Data (stream	aguas monitori	na well serial:	hotos see	wious inc	noctions)	if available:	
Describe K60	orueu Dala (Slieam	ı yauye, monilon	ng well, aerial [	niolos, pre	vious IIIS	p <del>e</del> uliuris),	ıı avallabit.	
Remarks:								
	_		_	_				
No evide	ence of wetla	and hydrol	ogy obse	rved.				

# WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad 2024	(	City/County	. Meaghe	er County	Sampling Date: 2024-06-25
	_			State: Montana	Sampling Point: DP10w
Investigator(s): McEldowney					
Landform (hillslope, terrace, etc.): Valley Floor				=	e Slope (%): 0
Subregion (LRR): E 46					
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes	✓ No _	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly of	disturbed?	Are "	'Normal Circumstances" p	oresent? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally pro	blematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present?  Hydric Soil Present?  Wetland Hydrology Present?  Remarks:  Yes   N  N  N  N	0		ne Sampled iin a Wetlar		No
PEM, located in the northwest portion	n of the	e site.			
VEGETATION – Use scientific names of plan	ts.				
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant		Dominance Test work	
1				Number of Dominant Sp That Are OBL, FACW, of	
2.				(excluding FAC-):	<u>1</u> (A)
3				Total Number of Domin	
4				Species Across All Stra	ta: <u>1</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r )		= Total Co		Percent of Dominant Sp That Are OBL, FACW, o	
2.				Prevalence Index work	ksheet:
3					Multiply by:
4					x 1 = 0 x 2 = 100
5					x 3 = 0
Herb Stratum (Plot size: 5 ft r )		= Total Co	ver		x 4 = 48
1. Phalaris arundinacea	50	~	FACW	UPL species 0	
2. Poa pratensis	10		FACU	Column Totals: 62	(A) <u>148</u> (B)
3. Melilotus officinalis	1		FACU	Prevalence Index	- P/A - 2.38
4. Taraxacum officinale	1		FACU	Hydrophytic Vegetation	<del></del>
5				✓ 1 - Rapid Test for H	
6				✓ 2 - Dominance Tes	
7				✓ 3 - Prevalence Inde	
8					Adaptations <sup>1</sup> (Provide supporting
9					s or on a separate sheet)
	~~	= Total Co	ver	Problematic Hydrop	phytic Vegetation <sup>1</sup> (Explain)
Woody Vine Stratum (Plot size: 30 ft r )  1				<sup>1</sup> Indicators of hydric soil be present, unless distu	l and wetland hydrology must urbed or problematic.
2		= Total Cov	/er	Hydrophytic Vegetation Present? Yes	s No
Remarks:				<u></u>	
Sample point is dominated by reed of	anary g	grass.			

SOIL Sampling Point: DP10w

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the	indicator	or confir	m the absence	of indicators.)			
Depth	Matrix			x Feature							
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		Remarks			
0 - 12	10YR 3/1	98	10YR 4/6	2	<u> </u>	PL	Sandy Clay	Sulfidic odor at 11-12 inches.			
12 - 16	2.5Y 5/2	97	10YR 4/4	3	<u>C</u>	М	Sandy Clay				
-											
-											
						-	·				
			=Reduced Matrix, CS LRRs, unless other			ed Sand G		ation: PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :			
Histosol		Sable to all	Sandy 0					luck (A9) (LRR I, J)			
·	oipedon (A2)		Sandy F	-				Prairie Redox (A16) ( <b>LRR F, G, H</b> )			
Black Hi			Stripped					urface (S7) (LRR G)			
<u>✓</u> Hydroge	n Sulfide (A4)		Loamy N	Mucky Mi	neral (F1)			lains Depressions (F16)			
	d Layers (A5) ( <b>LRR</b>				latrix (F2)		`	R H outside of MLRA 72 & 73)			
	ick (A9) (LRR F, G,			d Matrix				ed Vertic (F18)			
-	d Below Dark Surfac ark Surface (A12)	ce (ATT)	<u>✓</u> Redox Deplete		ace (F6) urface (F7)	١		arent Material (TF2) hallow Dark Surface (TF12)			
	fucky Mineral (S1)		Redox [			,		Explain in Remarks)			
	Mucky Peat or Peat	(S2) ( <b>LRR</b> (			essions (F	16)		of hydrophytic vegetation and			
5 cm Mu	icky Peat or Peat (S	3) ( <b>LRR F</b> )	(ML	RA 72 &	73 of LRR	<b>H</b> )	wetland hydrology must be present,				
Postriotivo I	_ayer (if present):						unless	disturbed or problematic.			
Type:	Layer (II present).										
, , <u> </u>	ches):						Hydric Soil	Present? Yes No			
Remarks:							Tiyane oon	1103CHC: 103 NO			
		. :		المحاجات	: D			indicates Ocilia sociat			
Sumaic	aor aetectea	in lowe	r portion of fir	st nor	izon. Re	eaox a	ark surrace	e indicator. Soil is moist.			
HYDROLO											
_	drology Indicators										
	•	one require	d; check all that apply					ry Indicators (minimum of two required)			
	Water (A1)		Salt Crust		(0.40)			ace Soil Cracks (B6)			
_	iter Table (A2)		Aquatic Inv	ertebrate	es (B13)			rsely Vegetated Concave Surface (B8)			
Saturation	arks (B1)		Dry-Seaso					nage Patterns (B10) lized Rhizospheres on Living Roots (C3)			
	nt Deposits (B2)		Oxidized R					here tilled)			
	posits (B3)		(where r			ing receis		rfish Burrows (C8)			
	at or Crust (B4)		Presence		•	1)		ration Visible on Aerial Imagery (C9)			
	oosits (B5)		Thin Muck					morphic Position (D2)			
Inundation	on Vis ble on Aerial	Imagery (B	7) Other (Exp	lain in R	emarks)		FAC	-Neutral Test (D5)			
Water-S	tained Leaves (B9)						Fros	t-Heave Hummocks (D7) (LRR F)			
Field Obser			,								
Surface Water			No Depth (inc								
Water Table			No Depth (inc								
Saturation Projection		Yes	No Depth (inc	ches):		Wet	land Hydrology	Present? Yes No			
(includes cap Describe Re		n gauge, mo	onitoring well, aerial p	ohotos, p	revious ins	pections)	, if available:				
	,		- · ·	•		,					
Remarks:											
Drimary	and second	arv indi	cators obser	vod f	or ovid	anca i	of watland	Lhydrology			
Filliary	and Second	ary IIIUI	cators obser	v <del>c</del> u i	JI EVIU	CIICE (	oi wellallu	i ffydfology.			

#### MDT Montana Wetland Assessment Form (revised March 2008)

8. Wetland size:

9. Assessment area (AA):

**1. Project Name:** Rostad Ranch **2. MDT Project #:** STPX 002 (749) **Control #:** 9680000

3. Evaluation Date: 06/25/2024 4. Evaluator(s): R Baumgarten 5. Wetlands/Site #(s): Rostad Mitigation Site

6. Wetland Location(s): i. Legal: T8N,R11E,12 ;T8N,R11E,13 Latitude/Longitude:

ii. Approx. Stationing or Mileposts:

iii. Watershed: 10

Watershed Name, County: Musselshell, Meagher

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

1. Wetlands potentially affected by MDT project

2. Mitigation wetlands; pre-construction

3. X Mitigation wetlands; post-construction

**4.** Other:

#### 10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	EM	E	SI	6
D	EM	E	SI	14
S	EM	E	SI	77
S	SS	NA	SI	3

Abbreviations: (see manual for definitions)

HGM Classes: Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF); Cowardin Classes: Rock Bottom (RB), Unconsolidated bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)

29.040 acres (measured)

29.040 acres (measured)

Modifiers: Excavated (E), Impounded (I), Diked (D), Partly Drained

(PD), Farmed (F), Artificial (A)

Water Regimes: Permanent / Perennial (PP), Seasonal / Intermittent (SI), Temporary / Ephemeral (TE)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions) COMMON

#### 12. General condition of AA:

 i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (ANVS) list)

	Predominant conditions adjacent to (within 500 feet of) AA						
Conditions within AA	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.				
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	low disturbance	moderate disturbance				
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance				
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	high disturbance				

Comments: (types of disturbance, intensity, season, etc.): Rangeland surrounds the site to the West, South, and East and is bordered by a lightly used county road to the North.

- ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Canada thistle (Cirsium arvense) and Hounds tongue (Cynoglossum officinale)
- iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA was historically drained and heavily grazed by cattle. A drainage ditch bisected the property prior to construction of the mitigation wetland. Historic and existing wetlands were expanded through construction activities with the goal of establishing or re-establishing emergent and scrub-shrub wetland. Surrounding land use includes transportation corridors (county road, historic railroad berm), and agriculture (hay production and cattle grazing). The south fork of the Musselshell River is located to the north of the mitigation site.
- 13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA		Is current management existence of additiona	Modified Rating	
>= 3 (or 2 if 1 is forested) classes	Н	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	М	< NO	YES>	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: Emergent and scrub-shrub vegetation classes present.

#### **SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT**

#### 14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species) Grizzly Bear(S) Monarch Butterfly(S)

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
Functional Points and Rating	1H	.9H	.8M	.7M	.3L	.1L	0L

Sources for documented use (e.g. observations, records, etc): USFWS IPaC Report (2024), MTNHP Environmental Summary Report for Lat 46.461326 and Long -110.296089 (2024).

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Secondary habitat (list species) Primary or critical habitat (list species)

Bobolink(D) - S2S3

Long-billed curlew(D) - S2S3

Incidental habitat (list species)

Downingia laeta(D) - S2S3

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	doc/primary	sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None
S1 Species: Functional Points and Rating	1H	.8H	.7M	.6M	.2L	.1L	0L
<b>S2 and S3 Species:</b> Functional Points and Rating	.9H	.7M	.6M	.5M	.2L	.1L	0L

Sources for documented use (e.g. observations, records, etc): Observations of Downingia laeta in wetland during 2013-15 site visits. Bobolinks observed at the site in 2024. Long-billed curlew suspected based off MTNHP Environmental Summary Report for Lat 46.461326 and Long -110.296089 (2024) and

documented by MDT.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):	Minimal (based on any of the following [check]):
observations of abundant wildlife #s or high species diversity (during any period) abundant wildlife sign such as scat, tracks, nest structures, game trails, etc. presence of extremely limiting habitat features not available in the surrounding area interviews with local biologists with knowledge of the AA	few or no wildlife observations during peak use periods little to no wildlife sign sparse adjacent upland food sources interviews with local biologists with knowledge of the AA
Moderate (based on any of the following [check]):	
X observations of scattered wildlife groups or individuals or relatively few species during	g peak periods
X common occurrence of wildlife sign such as scat, tracks, nest structures, game trails,	etc.
adequate adjacent upland food sources	
interviews with local biologists with knowledge of the AA	

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)		High					Moderate								Low					
Class cover distribution (all vegetated classes)					Uneven			Even			Uneven				Even					
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	E	Е	Е	Н	Е	Е	Н	Н	Е	Н	Н	М	Е	Н	М	М	Е	Н	М	М
<b>Moderate</b> disturbance at AA (see #12i)	Н	Н	Н	Н	Н	Н	Н	М	Н	Н	М	М	Н	М	М	L	Н	М	L	L
High disturbance at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)		Wildlife habitat fe	eatures rating (ii)	
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Site used by deer, antelope, coyotes and various bird species. Active Sandhill Crane nesting observed in wetland in 2016, 2018, Comments: 2019, and 2022 (observed by MDT) and 2024.

**14D. General Fish Habitat Rating:** (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark **X NA** and proceed to 14E.)

Type of Fishery: Cold Water (CW) \_\_\_ Warm Water (WW) \_\_ Use the CW or WW guidelines in the user manual to complete the matrix

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water		Dorr	manant	/ Doror	onial		Seasonal / Intermittent							Tomporary / Enhamaral						
in AA		Permanent / Perennial					Jeasonai / Illellilllelli							Temporary / Ephemeral						
Aquatic hiding / resting / escape cover	Opt	imal	Adeo	luate	Po	oor	Opt	imal	Adeo	quate	Po	or	Opt	imal	Adeo	quate	Po	oor		
Thermal cover optimal / suboptimal	0	Ø	0	Ø	0	S	0	S	0	S	0	Ø	0	S	0	S	0	Ø		
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L		
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L		
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L		
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L		

Sources used for identifying fish sp. potentially found in AA:

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat?

If yes, reduce score in i above by 0.1.

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? If yes, add 0.1 to the adjusted score in i or iia.

iii. Final Score and Rating: NA Comments: AA does not support perennial water to provide fish habitat.

**14E. Flood Attenuation:** (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark **X NA** and proceed to 14F.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	0 ,	entrenche stream typ			ely entrend stream type		Entrenched-A, F, G stream types			
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L	

**Entrenchment ratio (ER) estimation** – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

/ =
Flood-prone Bankfull Entrenchment ratio width width (ER)

2 x Bankfull Depth

Bankfull Depth

Bankfull Depth

SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 – 2.2	Entrenched ER = 1.0 – 1.4						
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type				
	****			•		•				

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?
 Comments: No flooding occurs via in-channel or overbank flow.

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, **NA** and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>:	5 acre fe	et	1.11	to 5 acre	feet	<=	1 acre fo	oot
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond >= 5 out of 10 years	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

**Comments:** Depressional areas, especially the excavated cell in the northeast corner of the site, and portions of slope wetlands maintain water seasonally/intermittently. Adaptive management in 2017 resulted in an increased score for this function.

**14G. Sediment/Nutrient/Toxicant Retention and Removal:** (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, **NA** and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H=high, M=moderate, or L=low])

			P 1 1	***	147 ( )	MDEOUG		LCTMD	
Sediment, nutrient, and toxicant input	AA receives or surrounding land use with Waterbody on MDEQ list of waterbodies in need of								
levels within AA	potential to	deliver levels	s of sediment	s, nutrients,	developmen	t for "probable of	causes" related	to sediment,	
	or compour are n sedimentat	nds at levels ot substantia ion, sources	such that oth Illy impaired. of nutrients on ohication pres	er functions Minor or toxicants,	nutrients, or t use with po nutrients, o substantially	toxicants or AA otential to delive r compounds so impaired. Majo	receives or sur er high levels of uch that other for or sedimentation ns of eutrophica	rounding land sediments, unctions are n, sources of	
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	′0%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes No Yes N				
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.3L	.2L		
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M .3L .2L .1				

Comments: More than 80 percent of the wetland are vegetated. A restricted outlet is located in a depressional area as a constructed overflow channel.

**14H Sediment/Shoreline Stabilization:** (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, **NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

O/ Cover of wellered atreambank on	Dunation	-fftdi t td									
% Cover of <u>wetland</u> streambank or	Duration of surface water adjacent to rooted vegetation										
shoreline by species with stability ratings of >=6 (see <b>Appendix F</b> ).	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral								
>= 65%	1H	.9Н	.7M								
35-64%	.7M	.6M	.5M								
35%	.3L	.2L	.1L								

Comments: The lateral ditch is considered a manmade channel and flows seasonal/intermittent, when water is turned on at the site. The vegetation along this ditch is dominated by reed canary grass and has a stability rating of 9. The standing water adjacent to embankments is seasonal/intermittent. The vegetation in these areas is dominated by reed canary grass, common spike rush, manna grass, and cattail communities.

#### 14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

		• • •		
	General Fish Habitat	General V	Wildlife Habitat Rating	g (14C.iii.)
	Rating (14D.iii.)	E/H	M	L
	E/H	Н	Н	M
ĺ	M	Н	M	M
ľ	L	M	M	L
	N/A	Н	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14!.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

Α		Vegetat	ed comp	onent >	5 acres		'	Vegetate	ed comp	onent 1	-5 acres	;		8H .6M .6M .4M				< 1 acre		
В	Hi	gh	Mode	erate	Lo	)W	Hi	gh	Mode	erate	Lo	)W	Hi	gh	Mode	erate	Lo	w		
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L		
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L		
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L		

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) Vegetated Upland Buffer (VUB): Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference?

X If yes, add 0.1 to the score in ii above.

iv. Final Score and Rating: 0.80H Comments: Moderate biological activity, qualifying upland buffer exists.

i. Discharge Indicators				ii	i. Recharge	Indicators						
X The AA is a slope wetland							ent without u	nderlying imp	eding laver			
X Springs or seeps are known	or observed	I				ontains inlet but no outlet						
X Vegetation growing during do				s	Stream is a kr	nown 'losing'	stream; disc	harge volume	decreases			
X Wetland occurs at the toe of		_			Other:	-		-				
AA permanently flooded duri	ng drought ¡	periods										
Wetland contains an outlet, b	out no inlet											
X Shallow water table and the	site is satura	ated to the sur	face									
Other:												
ii. Rating (use the information from i	and ii ahove	and the table	helow to arr	ive at [circle]	the functions	al noints and	rating)					
	and ii above				tlands FROI			7				
					THAT IS RE							
			<u>G</u>	<u>ROUNDWA1</u>	ER SYSTEM	<u>1</u>						
Criteria		P/P		S/I	Т		None	1				
Groundwater Discharge or Recha	rge	1H		.7M	.4M		.1L					
Insufficient Data/Information			-	N//	A	-						
Comments: Seasonal/intermittent wa	ater regime	within the AA.										
4K. Uniqueness:												
. Rating (working from top to bottom,	use the ma	trix below to a	rrive at [circle	e] the function	nal points an	d rating)						
,	1			<del> </del>	t contain pre							
	AA contair	ns fen, bog, w re (>80 yr-old)	arm springs		and structur			ot contain preves es or associat				
Replacement potential		o <b>r</b> plant associ			high <b>or</b> conta		71	al diversity (#1				
		S1" by the MT		association	on listed as " MTNHP	S2" by the		moderate	0,10.011			
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant			
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L			
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L			
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L			
Comments: PEM & PSS wetland are	e common ir	n the area. Str	uctural divers	sity and distu	rbance are m	noderate.	<u>.</u>					
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
4L. Recreation/Education Potentia							d V NA -		41			
. Is the AA a known or potential rec		(i	i res conun	iue with the e	evaluation, ii	ino then mai	K NA a	na proceed ic	uie			
overall summary and rating p	• ,	Educational/	aciontific atua	du. Con	aumativa raa	. Y Non o	anaumntiva	root				
i. Check categories that apply to the	ne AA:	_Educational/s	scientine stud		sumptive rec	., <u> </u>	onsumptive	iec.,				
		Other :										
ii. Rating:						-	.,	1 5	7			
Known or Potential Recreation or Ed							Known	Potential	4			
Public ownership or public easem					requirea)		.2H	.15H	4			
Private ownership with general pu Private or public ownership witho					n for nublic	200000	.15H .1M	.1M .05L	4			
Comments: Currently no recreation/				ig perillissic	on for public	access	. I IVI	.03L	_			
James James To reorgation	Saucation 0	coard at the Si										
General Site Notes												

#### FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Rostad Mitigation Site

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.10	1	2.90	
B. MT Natural Heritage Program Species Habitat	Н	0.90	1	26.14	*
C. General Wildlife Habitat	М	0.50	1	14.52	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	Н	0.90	1	26.14	*
G. Sediment/Nutrient/Toxicant Removal	Н	1.00	1	29.04	
H. Sediment/Shoreline Stabilization	Н	0.90	1	26.14	
I. Production Export/Food Chain Support	Н	0.80	1	23.23	
J. Groundwater Discharge/Recharge	М	0.70	1	20.33	*
K. Uniqueness	L	0.30	1	8.71	
L. Recreation/Education Potential (bonus points)	NA				
Totals:		6.10	9.00	177.15	
Percent of Possible Score		-	68%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)
Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; or
Score of 1 functional point for Uniqueness; <b>or</b>
Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; <b>or</b>
Percent of possible score > 80% (round to nearest whole #).
Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)
Score of 1 functional point for MT Natural Heritage Program Species Habitat; or
Score of .9 or 1 functional point for General Wildlife Habitat; <b>or</b>
Score of .9 or 1 functional point for General Fish Habitat; <b>or</b>
"High" to "Exceptional" ratings for <b>both</b> General Wildlife Habitat <b>and</b> General Fish/Aquatic Habitat; <b>or</b>
Score of .9 functional point for Uniqueness; <b>or</b>
Percent of possible score > 65% (round to nearest whole #).
Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
X "Low" rating for Uniqueness; and
Vegetated wetland component 1 acre (do not include upland vegetated buffer); and
Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: Category II Wetland.

Scientific Names	Common Names	GP Indicator Status <sup>(1)</sup>
Achillea millefolium	Common Yarrow	FACU
Agropyron cristatum	Crested Wheatgrass	UPL
Agrostis stolonifera	Spreading Bent	FACW
Algae, green	Algae, green	NL
Alopecurus arundinaceus	Creeping-Meadow Foxtail	FACW
Alopecurus pratensis	Field Meadow-Foxtail	FACW
Amaranthus retroflexus	Red-Root	FACU
Ambrosia acanthicarpa	Flat-spine Ragweed	UPL
Artemisia ludoviciana	White Sagebrush	UPL
Aster sp.	Aster	UPL
Bassia scoparia	Mexican-Fireweed	FACU
Beckmannia syzigachne	American Slough Grass	OBL
Berteroa incana	Hoary False-alyssum	UPL
Bromus arvensis	Field Brome	FACU
Bromus carinatus	California Brome	UPL
Bromus inermis	Smooth Brome	UPL
Camelina microcarpa	Little-Pod False Flax	UPL
Cardaria draba	Whitetop	UPL
Carex nebrascensis	Nebraska Sedge	OBL
Carex pellita	Woolly Sedge	OBL
Carex praegracilis	Clustered Field Sedge	FACW
Carex stipata	Stalk-Grain Sedge	OBL
Carex utriculata	Northwest Territory Sedge	OBL
Carum carvi	Caraway	UPL
Centaurea stoebe	Spotted Knapweed	UPL
Chenopodium album	Lamb's-Quarters	FACU
Chenopodium sp.	Goosefoot	UPL
Cicuta douglasii	Western Water-Hemlock	OBL
Cirsium arvense	Canadian Thistle	FACU
Convolvulus arvensis	Field Bindweed	UPL
Cynoglossum officinale	Gypsy-Flower	FACU
Cyrtorhyncha cymbalaria	Alkali Buttercup	OBL
Dactylis glomerata	Orchard Grass	FACU
Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia sophia	Herb Sophia	UPL
Downingia laeta	Great Basin Calico-Flower	OBL
Eleocharis palustris	Common Spike-Rush	OBL
Thinopyrum intermedium	Intermediate Wheatgrass	UPL
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum arvense	Field Horsetail	FAC
Equisetum laevigatum	Smooth Scouring-Rush	FAC
Glyceria grandis	American Manna Grass	OBL

FACU   Helianthus annuus   Common Sunflower   FACU   Helianthus annuus   Common Sunflower   FACU   Hippuris vulgaris   Common Mare's-Tail   OBL   Hordeum jubatum   Fox-Tail Barley   FACW   Juncus articulatus   Joint-Leaf Rush   OBL   Juncus balticus   Baltic Rush   FACW   Juncus bufonius   Toad Rush   OBL   Juncus longistylis   Llong-Style Rush   FACW   Juncus longistylis   Llong-Style Rush   FACW   Juncus longistylis   Llong-Style Rush   FACW   Lactuca serricola   Prickly Lettuce   FAC   Lepidium densiflorum   Miner's Pepperwort   FAC   Medicago sativa   Alfalfa   UPL   Meliliotus albus   White Sweetclover   UPL   Meliliotus albus   White Sweetclover   FACU   Mentha arvensis   American Wild Mint   FACW   Pascopyrum smithii   Western-Wheat Grass   FACU   Phalaris arundinacea   Reed Canary Grass   FACW   Phleum pratense   Common Timothy   FACC   Poa palustris   Fowl Blue Grass   FACW   Polypogon monspeliensis   Kentucky Blue Grass   FACW   Populus angustifolia   Narrow-Leaf Cottonwood   FACW   Populus angustifolia   Narrow-Leaf Cottonwood   FACW   Populus termuloides   Quaking Aspen   FAC   PACW   Potentilla anserina   Silverweed   FACW   Potentilla anserina   Silverweed   FACW   PACW	Objective administra	Tavid Manage Crass	ODI
Helfanthus annuus Common Sunflower Hippuris vulgaris Common Mare's-Tail OBL Hordeum jubatum Fox-Tail Barley FACW Juncus articulatus Juncus balticus Baltic Rush Juncus bufonius Toad Rush OBL Juncus longistylis Llong-Style Rush Lactuca serriola Prickly Lettuce FAC Lepidium densiflorum Miner's Pepperwort Melilotus albus White Sweetclover Melilotus albus White Sweetclover Melilotus officinalis Yellow Sweet-Clover FACU Mentha arvensis American Wild Mint FACW Pascopyrum smithii Western-Wheat Grass FACU Phalaris arundinacea Reed Canary Grass FACU Phelum pratense Common Timothy FACU Plantago major Great Plantain FAC Poa palustris Fowl Blue Grass FACU Polypogon monspeliensis Annual Rabbit's-Foot Grass FACW Populus termuloides Quaking Aspen FAC Potentilla anserina Silverweed FACW Potentilla gracilis Graceful Cinquefoil FAC Rumex occidentalis Western Dock OBL Salix exigua Narrow-Leaf Willow FACW Schedonorus pratensis Meadow False Rye Grass FACU Schoenoplectus acutus Hardstem Bulrush OBL Sinapis arvensis Field Sow-Thistle FAC Symphyotrichum ericoides Western American-Aster FACU Tragopogon dubius FACU Trifolium arvense Rabbit-foot Clover UPL Trifolium arvense Rabbit-foot Clover UPL Trifolium arvense	Glyceria striata	Fowl Manna Grass	OBL
Hippuris vulgaris Common Mare's-Tail OBL Hordeum jubatum Fox-Tail Barley FACW Juncus articulatus Joint-Leaf Rush OBL Juncus balticus Baltic Rush FACW Juncus butonius Toad Rush OBL Juncus longistylis Llong-Style Rush FACW Lactuca serrical Prickly Lettuce FAC Lepidium densiflorum Miner's Pepperwort FAC Medicago sativa Alfalfa UPL Melliotus afficinalis Yellow Sweetclover UPL Melliotus officinalis Yellow Sweetclover FACU Mentha arvensis American Wild Mint FACW Pascopyrum smithii Western-Wheat Grass FACU Phalaris arundinacea Reed Canary Grass FACW Phieum pratense Common Timothy FACU Plantago major Great Plantain FAC Poa palustris Fowl Blue Grass FACW Populus angustifolia Narrow-Leaf Cottonwood FACW Populus balsamifera Balsam Poplar FACW Populus tremuloides Quaking Aspen FAC Potentilla gracilis Graceful Cinquefoil FAC Ranunculis acris Tall Buttercup FACW Rumex occidentalis Western Dock OBL Salix exigua Narrow-Leaf Willow FACW Schedonorus pratensis Meadow False Rye Grass FACU Schoenoplectus acutus Hardstern Bulrush OBL Sinapis arvensis Field Sow-Thistle FAC Symphyotrichum ascendens Western American-Aster FACU Tanacetum vulgare Common Tansy FACU Trifolium arvense Rabbit-foot Clover UPL			
Hordeum jubatum Fox-Tail Barley FACW Juncus articulatus Joint-Leaf Rush OBL Juncus bultonius Baltic Rush OBL Juncus bultonius Toad Rush OBL Juncus longistylis Llong-Style Rush FACW Lactuca serriola Prickly Lettuce FAC Lepidium densiflorum Miner's Pepperwort FAC Medicago sativa Alfalfa UPL Melilotus albus White Sweetclover UPL Melilotus officinalis Yellow Sweet-Clover FACU Mentha arvensis American Wild Mint FACW Pascopyrum smithii Western-Wheat Grass FACU Phalaris arundinacea Reed Canary Grass FACU Phelum pratense Common Timothy FACU Poa palustris Fowl Blue Grass FACU Polypogon monspeliensis Annual Rabbit's-Foot Grass FACW Populus angustifolia Narrow-Leaf Cottonwood FACW Populus tremuloides Quaking Aspen FAC Potentilla anserina Silverweed FACW Potentilla gracilis Graceful Cinquefoil FAC Ranunculis acris Tall Buttercup FACW Rumex crispus Curly Dock FAC Rumex crispus Western Dock OBL Salix exigua Narrow-Leaf Willow FACU Schedonorus pratensis Meadow False Rye Grass FACW Schedonorus pratensis Meadow False Rye Grass FACU Schedonorus pratensis Field Sow-Thistle FAC Sonchus arvensis Field Sow-Thistle FAC Somphyotrichum ericoides White Heath American-Aster FACU Thaspi arvense Field Pennycress FACU Thaspi arvense Field Pennycress FACU Tragopogon dubius Meadow Goat's-beard UPL			
Juncus articulatus Joint-Leaf Rush Juncus balticus Baltic Rush Juncus bufonius Toad Rush Juncus longistylis Llong-Style Rush Lactuca serriola Prickly Lettuce FAC Lepidium densiflorum Miner's Pepperwort Medicago sativa Melilotus albus White Sweetclover Melilotus officinalis Yellow Sweet-Clover Mentha arvensis American Wild Mint Paccopyrum smithii Western-Wheat Grass FACU Phalaris arundinacea Reed Canary Grass FACW Phelum pratense Common Timothy FACU Plantago major Great Plantain FAC Poa palustris Fowl Blue Grass FACW Populus angustifolia Narrow-Leaf Cottonwood FACW Populus tremuloides Quaking Aspen Potentilla gracilis Graceful Cinquefoil FAC Rumex crispus Curly Dock FAC Rumex crispus Western Dock Scheenoplectus acutus Hardstern Bulrush OBL Sinapis arvensis FACU FACU Polypogon monspelensis Meadow False Rye Grass FACW Potentilla gracilis Graceful Cinquefoil FAC Rumex crispus Curly Dock FAC Rumex crispus Curly Dock FAC Rumex occidentalis Western Dock OBL Salix exigua Narrow-Leaf Willow FACW Schedonorus pratensis Meadow False Rye Grass FACU Schedonorus pratensis Western Dock OBL Sinapis arvensis Wild Mustard UPL Solidago gigantea Late Goldenrod FAC Symphyotrichum ascendens Western American-Aster FACU Tanacetum vulgare Common Tansy FACU Tanacetum vulgare FACU Tingopogon dubius FACU Tragopogon dubius FACU Tragopogon dubius FACU Tragopogon dubius FACU Trifolium arvense Rabbit-foot Clover UPL			
Juncus balticus  Baltic Rush  Juncus bufonius  Toad Rush  OBL  Juncus longistylis  Liong-Style Rush  FACW  Lactuca serriola  Prickly Lettuce  FAC  Lepidium densiflorum  Miner's Pepperwort  Medicago sativa  Alfalfa  UPL  Melilotus albus  Mentha arvensis  American Wild Mint  Pascopyrum smithii  Western-Wheat Grass  FACU  Phalaris arundinacea  Reed Canary Grass  FACW  Phelum pratense  Common Timothy  FACU  Plantago major  Great Plantain  FAC  Poa palustris  Fowl Blue Grass  FACU  Populus angustifolia  Narrow-Leaf Cottonwood  FACW  Populus termuloides  Quaking Aspen  FAC  Potentilla anserina  Silverweed  FACW  Potentilla gracilis  Graceful Cinquefoil  FAC  Ramunculis acris  Tall Buttercup  FACW  Rumex occidentalis  Western Dock  Salix exigua  Narrow-Leaf Willow  Scheedonorus pratensis  Meadow False Rye Grass  FACU  Schoenoplectus acutus  Hardstem Bulrush  OBL  Sinapis arvensis  Wild Mustard  UPL  Solidago gigantea  Late Goldenrod  FACU  Trifolium arvense  Rabbit-foot Clover  UPL  Trifolium arvense  Rabbit-foot Clover  UPL  Trifolium arvense  Rabbit-foot Clover  UPL  Trifolium arvense	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
Juncus bufonius Toad Rush OBL  Juncus longistylis Llong-Style Rush FACW  Lactuca serriola Prickly Lettuce FAC  Lepidium densiflorum Miner's Pepperwort FAC  Medicago sativa Alfalfa UPL  Melilotus albus White Sweetclover UPL  Melilotus officinalis Yellow Sweet-Clover FACU  Mentha arvensis American Wild Mint FACW  Pascopyrum smithii Western-Wheat Grass FACU  Phalaris arundinacea Reed Canary Grass FACW  Phleum pratense Common Timothy FACU  Plantago major Great Plantain FAC  Poa palustris Fowl Blue Grass FACW  Poa pratensis Kentucky Blue Grass FACW  Populus angustifolia Narrow-Leaf Cottonwood FACW  Populus angustifolia Narrow-Leaf Cottonwood FACW  Populus teremuloides Quaking Aspen FAC  Potentilla anserina Silverweed FACW  Potentilla gracilis Graceful Cinquefoil FAC  Ranunculis acris Tall Buttercup FACW  Rumex crispus Curly Dock FAC  Rumex occidentalis Western Dock OBL  Salix exigua Narrow-Leaf Willow FACW  Schedonorus pratensis Meadow False Rye Grass FACU  Schoenoplectus acutus Hardstem Bulrush OBL  Sinapis arvensis Wild Mustard UPL  Solidago gigantea Late Goldenrod FAC  Symphyotrichum ascendens Western American-Aster FACU  Symphyotrichum ascendens Western American-Aster FACU  Tanacetum vulgare Common Tansy FACU  Tragopogon dubius Meadow Goat's-beard UPL  Trifolium arvense Rabbit-foot Clover UPL			
Juncus longistylis         Llong-Style Rush         FACW           Lactuca serriola         Prickly Lettuce         FAC           Lepidium densiflorum         Miner's Pepperwort         FAC           Medicago sativa         Alfalfa         UPL           Melilotus albus         White Sweetclover         UPL           Melilotus officinalis         Yellow Sweet-Clover         FACU           Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Polaris grass         FACW         FACW           Poa pratensis	Juncus balticus		
Lactuca serriola         Prickly Lettuce         FAC           Lepidium densiflorum         Miner's Pepperwort         FAC           Medicago sativa         Alfalfa         UPL           Melilotus albus         White Sweetclover         UPL           Melilotus officinalis         Yellow Sweet-Clover         FACU           Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phelum pratense         Common Timothy         FACU           Phleum pratense         Common Timothy         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phelum pratense         Common Timothy         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phelum pratense         Common Timothy         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Polantago major         Great Plantain         FAC           Poal pratensis         Kentucky Blue Grass         FACU           Polantago major         Great Plantain         FACW           Polypogon monspeliensis         Annual Rabbit	Juncus bufonius	Toad Rush	
Lepidium densiflorum         Miner's Pepperwort         FAC           Medicago sativa         Alfalfa         UPL           Meliotus albus         White Sweetclover         UPL           Meliotus officinalis         Yellow Sweet-Clover         FACU           Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phalaris arundinacea         Read Canary Grass         FACW           Polarisis         FacW         FacW           Poa palustris         Fowl Blue Grass         FACW           Poa palustris         Foot Blue Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus balsamifera </td <td>Juncus longistylis</td> <td>Llong-Style Rush</td> <td>FACW</td>	Juncus longistylis	Llong-Style Rush	FACW
Medicago sativa         Alfalfa         UPL           Melilotus albus         White Sweetclover         UPL           Melilotus officinalis         Yellow Sweet-Clover         FACU           Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phaleum pratense         Common Timothy         FACU           Phaleum pratense         Common Timothy         FACU           Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Poal pratensis         Kentucky Blue Grass         FACW           Poa pratensis         Annual Rabbit's-Foot Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Race Curly angustifolia         FACW	Lactuca serriola	-	FAC
Melilotus albus         White Sweetclover         UPL           Melilotus officinalis         Yellow Sweet-Clover         FACU           Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phleum pratense         Common Timothy         FACU           Pallaris         FACU         FACW           Poal graditis         Facull Brates         FACW           Poal pratensis         Kentucky Blue Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus termuloides         Quaking Aspen         FAC           Potentilla anserina         Silverwed         FACW </td <td>Lepidium densiflorum</td> <td>Miner's Pepperwort</td> <td>FAC</td>	Lepidium densiflorum	Miner's Pepperwort	FAC
Melilotus officinalis         Yellow Sweet-Clover         FACU           Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phleum pratense         Common Timothy         FACU           Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus tremuloides         Quaking Aspen         FAC           Populus tremuloides         Quaking Aspen         FAC           Potentilla anserina         Silverweed         FACW           Potentilla gracilis         Graceful Cinquefoil         FAC           Ramurculis acris         Tall Buttercup         FACW           Rumex crispus         Curly Dock         FAC           Rumex crispus <t< td=""><td>Medicago sativa</td><td>Alfalfa</td><td>UPL</td></t<>	Medicago sativa	Alfalfa	UPL
Mentha arvensis         American Wild Mint         FACW           Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phleum pratense         Common Timothy         FACU           Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Poulus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus tremuloides         Quaking Aspen         FACW           Populus tremuloides         Quaking Aspen         FAC           Potentilla anserina         Silverweed         FACW           Potentilla gracilis         Graceful Cinquefoil         FAC           Ramnculis acris         Tall Buttercup         FACW           Rumex crispus         Curly Dock         FAC           Rumex crispus         Curly Dock	Melilotus albus	White Sweetclover	UPL
Pascopyrum smithii         Western-Wheat Grass         FACU           Phalaris arundinacea         Reed Canary Grass         FACW           Phleum pratense         Common Timothy         FACU           Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus tremuloides         Quaking Aspen         FAC           Populus tremuloides         Quaking Aspen         FAC           Potentilla anserina         Silverweed         FACW           Potentilla gracilis         Graceful Cinquefoil         FAC           Ranunculis acris         Tall Buttercup         FACW           Rumex crispus         Curly Dock         FAC           Rumex crispus         Curly Dock         FAC           Rumex occidentalis         Western Dock         OBL           Salix exigua         Narrow-Leaf Willow <td>Melilotus officinalis</td> <td>Yellow Sweet-Clover</td> <td>FACU</td>	Melilotus officinalis	Yellow Sweet-Clover	FACU
Phalaris arundinacea         Reed Canary Grass         FACW           Phleum pratense         Common Timothy         FACU           Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus balsamifera         Balsam Poplar         FACW           Populus tremuloides         Quaking Aspen         FAC           Populus tremuloides         Quaking Aspen         FACW           Potentilla anserina         Silverweed         FACW           Potentilla gracillis         Graceful Cinquefoil         FAC           Ranunculis acris         Tall Buttercup         FACW           Rumex crispus         Curly Dock         FAC           Rumex crispus         Curly Dock         FAC           Rumex crispus         Narrow-Leaf Willow         FACW           Salix exigua         Narrow-Leaf Willow         FACW           Schedonorus pratensis         Meadow False Ry	Mentha arvensis	American Wild Mint	FACW
Phleum pratense         Common Timothy         FACU           Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACW           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus balsamifera         Balsam Poplar         FACW           Populus tremuloides         Quaking Aspen         FACW           Populus tremuloides         Quaking Aspen         FACW           Potentilla anserina         Silverweed         FACW           Potentilla gracillis         Graceful Cinquefoil         FAC           Romuculis acris         Tall Buttercup         FACW           Rumex crispus         Curly Dock         FAC           Rumex crispus         Curly Dock         FAC           Rumex crispus         Narrow-Leaf Willow         FACW           Salix exigua         Narrow-Leaf Willow         FACW           Schedonorus pratensis         Meadow False Rye Grass         FACU           Schoenoplectus acutus         Hardstem	Pascopyrum smithii	Western-Wheat Grass	FACU
Plantago major         Great Plantain         FAC           Poa palustris         Fowl Blue Grass         FACW           Poa pratensis         Kentucky Blue Grass         FACU           Polypogon monspeliensis         Annual Rabbit's-Foot Grass         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus angustifolia         Narrow-Leaf Cottonwood         FACW           Populus tremuloides         Quaking Aspen         FAC           Populus tremuloides         Quaking Aspen         FAC           Potentilla anserina         Silverweed         FACW           Potentilla gracilis         Graceful Cinquefoil         FAC           Rotentilla gracilis         Graceful Cinquefoil         FAC           Rumex crispus         Curly Dock         FAC           Rumex crispus         Curly Dock         FAC           Rumex crispus         Curly Dock         FAC           Rumex crispus         Western Dock         OBL           Salix exigua         Narrow-Leaf Willow         FACW           Schedonorus pratensis         Meadow False Rye Grass         FACU           Schoenoplectus acutus         Hardstem Bulrush         OBL           Sinapis arvensis         Wild Mustard	Phalaris arundinacea	Reed Canary Grass	FACW
Poa palustrisFowl Blue GrassFACWPoa pratensisKentucky Blue GrassFACUPolypogon monspeliensisAnnual Rabbit's-Foot GrassFACWPopulus angustifoliaNarrow-Leaf CottonwoodFACWPopulus balsamiferaBalsam PoplarFACWPopulus tremuloidesQuaking AspenFACPotentilla anserinaSilverweedFACWPotentilla gracilisGraceful CinquefoilFACRanunculis acrisTall ButtercupFACWRumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Phleum pratense	Common Timothy	FACU
Poa pratensisKentucky Blue GrassFACUPolypogon monspeliensisAnnual Rabbit's-Foot GrassFACWPopulus angustifoliaNarrow-Leaf CottonwoodFACWPopulus balsamiferaBalsam PoplarFACWPopulus tremuloidesQuaking AspenFACPotentilla anserinaSilverweedFACWPotentilla gracilisGraceful CinquefoilFACRanunculis acrisTall ButtercupFACWRumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Plantago major	Great Plantain	FAC
Polypogon monspeliensisAnnual Rabbit's-Foot GrassFACWPopulus angustifoliaNarrow-Leaf CottonwoodFACWPopulus balsamiferaBalsam PoplarFACWPopulus tremuloidesQuaking AspenFACPotentilla anserinaSilverweedFACWPotentilla gracilisGraceful CinquefoilFACRanunculis acrisTall ButtercupFACWRumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Poa palustris	Fowl Blue Grass	FACW
Populus angustifoliaNarrow-Leaf CottonwoodFACWPopulus balsamiferaBalsam PoplarFACWPopulus tremuloidesQuaking AspenFACPotentilla anserinaSilverweedFACWPotentilla gracilisGraceful CinquefoilFACRanunculis acrisTall ButtercupFACWRumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Poa pratensis	Kentucky Blue Grass	FACU
Populus balsamiferaBalsam PoplarFACWPopulus tremuloidesQuaking AspenFACPotentilla anserinaSilverweedFACWPotentilla gracilisGraceful CinquefoilFACRanunculis acrisTall ButtercupFACWRumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Polypogon monspeliensis	Annual Rabbit's-Foot Grass	FACW
Populus tremuloidesQuaking AspenFACPotentilla anserinaSilverweedFACWPotentilla gracilisGraceful CinquefoilFACRanunculis acrisTall ButtercupFACWRumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Populus angustifolia	Narrow-Leaf Cottonwood	FACW
Potentilla anserina Silverweed FACW Potentilla gracilis Graceful Cinquefoil FAC Ranunculis acris Tall Buttercup FACW Rumex crispus Curly Dock FAC Rumex occidentalis Western Dock OBL Salix exigua Narrow-Leaf Willow FACW Schedonorus pratensis Meadow False Rye Grass FACU Schoenoplectus acutus Hardstem Bulrush OBL Sinapis arvensis Wild Mustard UPL Solidago gigantea Late Goldenrod FAC Sonchus arvensis Field Sow-Thistle FAC Symphyotrichum ascendens Western American-Aster FACU Symphyotrichum ericoides White Heath American-Aster FACU Tanacetum vulgare Common Tansy FACU Tragopogon dubius FACU Tragopogon dubius Meadow Goat's-beard UPL Trifolium arvense Rabbit-foot Clover UPL	Populus balsamifera	Balsam Poplar	FACW
Potentilla gracilis Graceful Cinquefoil FAC Ranunculis acris Tall Buttercup FACW Rumex crispus Curly Dock FAC Rumex occidentalis Western Dock OBL Salix exigua Narrow-Leaf Willow FACW Schedonorus pratensis Meadow False Rye Grass FACU Schoenoplectus acutus Hardstem Bulrush OBL Sinapis arvensis Wild Mustard UPL Solidago gigantea Late Goldenrod FAC Sonchus arvensis Field Sow-Thistle FAC Symphyotrichum ascendens Western American-Aster FACU Symphyotrichum ericoides White Heath American-Aster FACU Tanacetum vulgare Common Tansy FACU Taraxacum officinale Common Dandelion FACU Thlaspi arvense Field Pennycress FACU Tragopogon dubius Meadow Goat's-beard UPL Trifolium arvense Rabbit-foot Clover UPL	Populus tremuloides	Quaking Aspen	FAC
Ranunculis acris Tall Buttercup FACW Rumex crispus Curly Dock FAC Rumex occidentalis Western Dock OBL Salix exigua Narrow-Leaf Willow FACW Schedonorus pratensis Meadow False Rye Grass FACU Schoenoplectus acutus Hardstem Bulrush OBL Sinapis arvensis Wild Mustard UPL Solidago gigantea Late Goldenrod FAC Sonchus arvensis Field Sow-Thistle FAC Symphyotrichum ascendens Western American-Aster FACU Symphyotrichum ericoides White Heath American-Aster FACU Tanacetum vulgare Common Tansy FACU Taraxacum officinale Common Dandelion FACU Tragopogon dubius Meadow Goat's-beard UPL Trifolium arvense Rabbit-foot Clover UPL	Potentilla anserina	Silverweed	FACW
Rumex crispusCurly DockFACRumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Potentilla gracilis	Graceful Cinquefoil	FAC
Rumex occidentalisWestern DockOBLSalix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Ranunculis acris	Tall Buttercup	FACW
Salix exiguaNarrow-Leaf WillowFACWSchedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Rumex crispus	Curly Dock	FAC
Schedonorus pratensisMeadow False Rye GrassFACUSchoenoplectus acutusHardstem BulrushOBLSinapis arvensisWild MustardUPLSolidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Rumex occidentalis	Western Dock	OBL
Schoenoplectus acutus Hardstem Bulrush OBL  Sinapis arvensis Wild Mustard UPL  Solidago gigantea Late Goldenrod FAC  Sonchus arvensis Field Sow-Thistle FAC  Symphyotrichum ascendens Western American-Aster FACU  Symphyotrichum ericoides White Heath American-Aster FACU  Tanacetum vulgare Common Tansy FACU  Taraxacum officinale Common Dandelion FACU  Thlaspi arvense Field Pennycress FACU  Tragopogon dubius Meadow Goat's-beard UPL  Trifolium arvense Rabbit-foot Clover UPL	Salix exigua	Narrow-Leaf Willow	FACW
Sinapis arvensis Wild Mustard UPL Solidago gigantea Late Goldenrod FAC Sonchus arvensis Field Sow-Thistle Symphyotrichum ascendens Western American-Aster FACU Symphyotrichum ericoides White Heath American-Aster FACU Tanacetum vulgare Common Tansy FACU Taraxacum officinale Common Dandelion FACU Thlaspi arvense Field Pennycress FACU Tragopogon dubius Meadow Goat's-beard UPL Trifolium arvense Rabbit-foot Clover UPL	Schedonorus pratensis	Meadow False Rye Grass	FACU
Solidago giganteaLate GoldenrodFACSonchus arvensisField Sow-ThistleFACSymphyotrichum ascendensWestern American-AsterFACUSymphyotrichum ericoidesWhite Heath American-AsterFACUTanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Schoenoplectus acutus	Hardstem Bulrush	OBL
Sonchus arvensis       Field Sow-Thistle       FAC         Symphyotrichum ascendens       Western American-Aster       FACU         Symphyotrichum ericoides       White Heath American-Aster       FACU         Tanacetum vulgare       Common Tansy       FACU         Taraxacum officinale       Common Dandelion       FACU         Thlaspi arvense       Field Pennycress       FACU         Tragopogon dubius       Meadow Goat's-beard       UPL         Trifolium arvense       Rabbit-foot Clover       UPL	Sinapis arvensis	Wild Mustard	UPL
Sonchus arvensis       Field Sow-Thistle       FAC         Symphyotrichum ascendens       Western American-Aster       FACU         Symphyotrichum ericoides       White Heath American-Aster       FACU         Tanacetum vulgare       Common Tansy       FACU         Taraxacum officinale       Common Dandelion       FACU         Thlaspi arvense       Field Pennycress       FACU         Tragopogon dubius       Meadow Goat's-beard       UPL         Trifolium arvense       Rabbit-foot Clover       UPL	Solidago gigantea	Late Goldenrod	FAC
Symphyotrichum ericoides       White Heath American-Aster       FACU         Tanacetum vulgare       Common Tansy       FACU         Taraxacum officinale       Common Dandelion       FACU         Thlaspi arvense       Field Pennycress       FACU         Tragopogon dubius       Meadow Goat's-beard       UPL         Trifolium arvense       Rabbit-foot Clover       UPL	Sonchus arvensis	Field Sow-Thistle	FAC
Symphyotrichum ericoides       White Heath American-Aster       FACU         Tanacetum vulgare       Common Tansy       FACU         Taraxacum officinale       Common Dandelion       FACU         Thlaspi arvense       Field Pennycress       FACU         Tragopogon dubius       Meadow Goat's-beard       UPL         Trifolium arvense       Rabbit-foot Clover       UPL	Symphyotrichum ascendens	Western American-Aster	FACU
Tanacetum vulgareCommon TansyFACUTaraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL		White Heath American-Aster	FACU
Taraxacum officinaleCommon DandelionFACUThlaspi arvenseField PennycressFACUTragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL		Common Tansy	FACU
Tragopogon dubius     Meadow Goat's-beard     UPL       Trifolium arvense     Rabbit-foot Clover     UPL	•	·	FACU
Tragopogon dubiusMeadow Goat's-beardUPLTrifolium arvenseRabbit-foot CloverUPL	Thlaspi arvense	Field Pennycress	FACU
Trifolium arvense Rabbit-foot Clover UPL		•	UPL
	· · ·		
problem proble	Trifolium hybridum	Aslsike Clover	FACU
Trifolium pratense Red Clover FACU	·		
Trifolium repens White Clover FACU	•		

Triglochin maritima	Seaside Arrow-Grass	OBL
Typha angustifolia	Narrow-Leaf Cat-tail	OBL
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Veronica peregrina	Neckweed	FACW

<sup>&</sup>lt;sup>1</sup>2020 NWPL (USACE 2020)

New species identified in 2024 are **bolded**.

# APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana



Photo Point 1 – Panorama; Location: Northeast Corner; Bearing 200 degrees; Year 2013



Photo Point 1 – Panorama; Location: Northeast Corner; Bearing 200 degrees; Year 2024



Photo Point 2 – Panorama; Location: East Fence Corner; Bearing 125 degrees; Year 2013



Photo Point 2 – Panorama; Location: East Fence Corner; Bearing 125 degrees; Year 2024



Photo Point 3 – Panorama; Location: East Fence Line; Bearing 280 degrees; Year 2013



Photo Point 3 – Panorama; Location: East Fence Line; Bearing 280 degrees; Year 2024



Photo Point 4 – Panorama; Location: SE Fence Corner; Bearing 240 degrees; Year 2013



Photo Point 4 – Panorama; Location: SE Fence Corner; Bearing 240 degrees; Year 2024



Photo Point 5 – Panorama; Location: SW Fence Corner; Bearing 200 degrees; Year 2013



Photo Point 5 – Panorama; Location: SW Fence Corner; Bearing 200 degrees; Year 2024



Photo Point 7 – Panorama; Location: West Fence Corner; Bearing 90 degrees; Year 2013



Incomplete panorama in 2024

Photo Point 7 – Panorama; Location: West Fence Corner; Bearing 90 degrees; Year 2024



**Photo Point 6** Bearing: 30 degrees

Location: West Fence Line Year: 2013



**Photo Point 6** Bearing: 30 degrees

Location: West Fence Line Year: 2024



**Photo Point 6** Bearing: 100 degrees

Location: West Fence Line Year: 2013



**Photo Point 6** Bearing: 100 degrees

Location: West Fence Line Year: 2024



**Photo Point 8** Bearing: 90 degrees

Location: West Central

**Photo Point 8** Year: 2017 Bearing: 90 degrees



**Location:** West Central



Photo Point 9 Location: Bearing: 240 degrees Year: 2017

Location: East Fence Line



Photo Point 9 Location: Bearing: 240 degrees Year: 2024

Location: East Fence Line



Photo Point 10 Bearing: 80 degrees

**Location**: West Central **Year**: 2017



Photo Point 10 Bearing: 80 degrees

**Location**: West Central **Year**: 2024

## **Rostad Ranch: Transect Photographs**



**Transect 1: Start** Bearing: 290 degrees



Year: 2013



**Transect 1: Start** Bearing: 290 degrees



Year: 2024

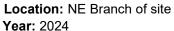


Transect 1: End Bearing: 110 degrees

Location: NE Branch of site Year: 2013



Transect 1: End Bearing: 110 degrees





**Transect 2: Start** Bearing: 130 degrees

**Location:** North Central Year: 2013



**Transect 2: Start** Bearing: 130 degrees

Location: North Central

## **Rostad Ranch: Transect Photographs**



Transect 2: End Bearing: 310 degrees

Location: North Central



**Transect 2: End** Bearing: 310 degrees

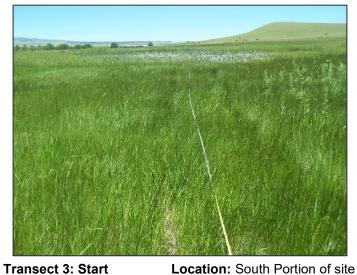
Location: North Central

Year: 2024



**Transect 3: Start** Bearing: 30 degrees

Location: South Portion of site Year: 2013



**Transect 3: Start** Bearing: 30 degrees Year: 2024



**Transect 3: End** Bearing 30: degrees

Location: South Portion of site Year: 2013



**Transect 3: End** Bearing: 30: degrees

Location: South Portion of site Year: 2024

# **Rostad Ranch: Transect Photographs**



**Transect 4: Start** Bearing: 0 degrees

Location: Northwest Portion Year: 2017



**Transect 4: Start** Bearing: 0 degrees

Location: Northwest Portion Year: 2024



Transect 4: End Bearing: 180 degrees

**Location:** Northwest Portion

Transect 4: End Year: 2017 Bearing: 180 degrees



Location: Northwest Portion



Data Point: DP01w

**Location:** Near NW middle of site. Veg CT 16. **Year:** 2024



Data Point: DP01u

Location: Near NW middle of site. Veg CT 08. Year: 2024



Data Point: DP02w

Location: Middle of W boundary. Veg CT 10. Year: 2024



Data Point: DP02u

Location: Middle of W boundary. Veg CT 08. Year: 2024



Data Point: DP03w-a (PSS)

Location: Near S corner of site. Veg CT 03. Year: 2024



Data Point: DP03w-b (PEM)

Location: Near S corner of site. Veg CT 10. Year: 2024



Data Point: DP03u

Location: Near S corner of site. Veg CT 08. Year: 2024



Data Point: DP04w

Location: Middle of SE boundary. Veg CT 02. Year: 2024



Data Point: DP04u

Location: Middle of SE boundary. Veg CT 08. Year: 2024



Data Point: DP05w

**Location:** NE center of site. Veg CT 10.



Year: 2024

Data Point: DP05u

**Location:** NE center of site. Veg CT 08.



Year: 2024



Data Point: DP06w

Location: Near E center of site. Veg CT 02.



Data Point: DP06u

Location: Near E center of site. Veg CT 08. Year: 2024



Data Point: DP07w

Location: Near SE corner of site. Veg CT 02. Year: 2024



Data Point: DP07u

Location: Near SE corner of site. Veg CT 08. Year: 2024



Data Point: DP08w

Location: Near NE corner of site. Veg CT 07. Year: 2024



Data Point: DP08u

Location: Near NE corner of site. Veg CT 08. Year: 2024



Data Point: DP09w

Location: Along N boundary. Veg CT 07 Year: 2024



Data Point: DP09u

Location: Along N boundary. Veg CT 08. Year: 2024



Data Point: DP10w

Location: Middle of N boundary. Veg CT 07. Year: 2024



Data Point: DP10u

Location: Middle of N boundary. Veg CT 08. Year: 2024