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: 2023

Years Monitored: 11th year of monitoring

Corps Permit Number: NWO-2006-90851-MTB

Monitoring Conducted By: Confluence Consulting Inc.

Dates Monitoring Was Conducted: June 27, 2023

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.

Site Location:

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):

Activity: N/A Date: N/A

Specific recommendations for any additional corrective actions: Weed treatment occurred in the fall of 2023 and will continue in 2024 so that the site may continue to meet

this performance criteria.

Anticipated Wetland Credit Acres: 27.40

Wetland Credit Acres Generated to Date: 30.53

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 2023.
Wetland Hydrology	Soil saturation is present for at least 12.5 percent of the growing season.	Y	Irrigation water was turned onto the site from May 1 st -June 6 th (36 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 11 th 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 was present at the mitigation site in 2023. 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.	Y	Upland buffers within the site exhibited greater than 50 percent aerial cover of desirable (non-weed) species in 2023.
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 2023.
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 2023 is 29.5-acres, which includes 2.59-acres of preservation wetlands at the mitigation site. This is a slight increase of 0.02 acres from 2022. The dominant wetland type at the mitigation site is palustrine emergent (PEM), and palustrine scrub-shrub (PSS) habitat is present in the preservation wetland areas in the south end of the site, and in the north central area where volunteer willows (*Salix* spp.) have established. In 2017, adaptive management strategies were implemented to increase the amount of inundation in some areas of the site. However, no open water areas were observed during the June 2023 monitoring event. Despite the lack of open water areas, 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 2023, with two new species observed in 2023. A comprehensive species list is included in Appendix B (Table B-1).

One upland type (UT) and 8 wetland type (WT) vegetation communities were identified and mapped at the mitigation site in 2023 (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. Upland type 8 was updated to include Trifolium spp. as codominant species, consistent with 2021 vegetation community types. 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 2023, WT 17 (*Glyceria grandis / Eleocharis palustris*) was created to document current conditions. The following vegetation community types were identified in 2023:

- 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

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 2023, with an estimate of one percent absolute cover of noxious weed 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. The number of Canada thistle (*Cirsium arvense*) infestations decreased and ranged from trace to moderate. Spotted knapweed (*Centaurea stoebe*) was observed at two locations in trace patches.

Vegetation cover was measured along four transects in 2023 (Figure A-2, 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. Wetland habitat increased one percent from 2022, and the total number of species recorded along the transect increased by one. Consistent with trends observed in 2022, total vegetative cover continues to increase slightly along this transect.

Table 2. Data Summary for T-1 From 2018 Through 2023 at the Rostad Ranch Wetland

Mitigation Site.

Monitoring Year	2018	2019	2020	2021	2022	2023
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	5	6	6	5	4
Hydrophytic Vegetation Communities Along Transect	4	4	4	4	3	3
Total Vegetative Species	26	23	22	22	25	26
Total Hydrophytic Species	11	10	8	8	11	10
Total Upland Species	15	13	14	14	14	16
Estimated % Total Vegetative Cover	95	95	95	95	96	97
Estimated % Unvegetated	5	5	5	5	4	3
% Transect Length Comprising Hydrophytic Vegetation Communities	62	62	61	61	66	67
% Transect Length Comprising Upland Vegetation Communities	38	38	39	39	34	33
% 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 and WT 10. Ninety-three percent of the transect crossed wetland habitat in 2023, which is a one percent increase from 2022. Total vegetative cover has remained constant at 95 percent from 2016 to 2023. Remapping of vegetation community boundaries in 2023 decreased the number of community transitions along the transect from 5 to 3.

Table 3. Data Summary for T-2 From 2018 Through 2023 at the Rostad Ranch Wetland

Mitigation Site.

Monitoring Year	2018	2019	2021	2022	2023
Transect Length (feet)	453	453	453	453	453
Vegetation Community Transitions along Transect	3	3	6	5	3
Vegetation Communities along Transect	3	3	3	3	3
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2
Total Vegetative Species	16	16	19	21	22
Total Hydrophytic Species	7	9	8	8	7
Total Upland Species	9	7	11	13	15
Estimated % Total Vegetative Cover	95	95	95	95	95
Estimated % Unvegetated	5	5	5	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	76	78	93	92	93
% Transect Length Comprising Upland Vegetation Communities	24	22	7	8	7
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprising Mudflat	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, and WT 15. The total number of species observed in 2023 remained consistent from 2022, and total vegetative cover increased by one percent.

Table 4. Data Summary for T-3 From 2018 Through 2023 at the Rostad Ranch Wetland Mitigation Site.

Monitoring Year	2018	2019	2020	2021	2022	2023
Transect Length (feet)	320	320	320	320	320	320
Vegetation Community Transitions along Transect	3	3	3	3	3	3
Vegetation Communities along Transect	3	3	3	3	3	3
Hydrophytic Vegetation Communities Along Transect	3	3	3	3	3	3
Total Vegetative Species	23	21	22	19	20	20
Total Hydrophytic Species	16	16	16	12	12	10
Total Upland Species	7	5	6	7	8	10
Estimated % Total Vegetative Cover	85	85	90	90	92	93
Estimated % Unvegetated	15	15	10	10	8	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. Wetland habitat along the transect increased by one percent in 2023. Total vegetative cover increased from eighty-seven percent to 93 percent in 2023.

Table 5. Data Summary for T-4 From 2018 Through 2023 at the Rostad Ranch Wetland Mitigation Site

Monitoring Year	2018	2019	2020	2021	2022	2023
Transect Length (feet)	412	412	412	412	412	412
Vegetation Community Transitions along Transect	3	3	4	2	2	2
Vegetation Communities along Transect	2	2	3	2	2	2
Hydrophytic Vegetation Communities Along Transect	1	1	1	1	1	1
Total Vegetative Species	16	14	17	15	17	20
Total Hydrophytic Species	3	5	4	3	5	5
Total Upland Species	13	9	13	12	12	15
Estimated % Total Vegetative Cover	80	80	80	85	87	93
Estimated % Unvegetated	20	20	20	15	13	7
% Transect Length Comprising Hydrophytic Vegetation Communities	12	21	8	10	23	24
% Transect Length Comprising Upland Vegetation Communities	88	79	92	90	77	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 2023 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. 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 May 1, 2023 and maintained a flow volume of approximately 1.45 cubic foot per second (cfs). Due to heavy rains, irrigation was turned off at the site on June 1, 2023. 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 2023 by the diversion of irrigation water across the site. During June monitoring event, no open water areas were observed at the mitigation site. Standing water was observed in the cattail marsh in the south portion of the site up to 8" deep. This was the only area of inundation observed. One groundwater monitoring well remains at the site and is monitored monthly by the US Geological Survey (USGS). On June 27, 2023 the well measured 4.71 feet to the water table below land surface.

Photographs – Photographs were taken in 2023 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.

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

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 2023a). Wetland soil pits exhibited several hydric soil indicators including loamy mucky mineral, 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 – Twenty-nine bird species were documented at the site during the 2023 monitoring event, including bobolinks (*Dolichonyx oryzivorus*), an S2/S3 rated species. The bobolinks were observed foraging, nesting, and loafing. Tree swallows were observed around two bird boxes at the southeast corner of the site, although the rest of the bird boxes were unoccupied. In addition to avian observations, boreal chorus frogs (*Pseudacris maculata*), Columbia spotted frogs (*Rana luteiventris*), white-tailed deer (*Odocoileus virginianus*), and antelope (*Antilocapra americana*) 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. Sediment/Shoreline Stabilization was rated N/A in the 2023 MWAM as a reflection of no open water at the site, decreasing the number of points possible from 9 to 8. The 2023 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 (2018-2023).

Function and Value Parameters from the Montana Wetland Assessment Method	2018 ^(a)	2019 ^(a)	2020 ^(a)	2021 ^(b)	2022 ^(b)	2023 ^(b)
Listed/Proposed T&E	Low	Low	Low	Low	Low	Low
Species Habitat	(0)	(0)	(0)	(0)	(0.1)	(0.1)
MTNHP Species Habitat	High (0.9)	High (0.9)	High (0.9)	High (0.9)	High (0.9)	High (0.9)
General Wildlife Habitat	Mod	Mod	Mod	Low	Mod	Mod
	(0.5)	(0.5)	(0.5)	(0.3)	(0.5)	(0.5)
General Fish/Aquatic Habitat	NA	NA	NA	NA	NA	NA
Flood Attenuation	NA	NA	NA	NA	NA	NA
Short- and Long-Term	Mod	Mod	High	High	High	High
Surface Water Storage	(0.6)	(0.6)	(0.9)	(0.9)	(0.9)	(0.9)
Sediment/Nutrient/Toxicant	High	High	High	High	High	High
Removal	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Sediment/Shoreline	High	High	High	High	High	NA
Stabilization	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)	
Production Export/Food Chain Support	High	High	High	Mod	Mod	Mod
	(0.8)	(0.8)	(0.8)	(0.6)	(0.8)	(0.8)
Groundwater Discharge/Recharge	Mod	Mod	Mod	Mod	Mod	Mod
	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)
Uniqueness	Low	Low	Low	Low	Low	Low
	(0.3)	(0.3)	(0.3)	(0.2)	(0.3)	(0.3)
Recreation/Education Potential (bonus points)	Low	Low	Low	Low	Low	Low
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Actual Points/Possible Points	5.75/9	5.75/9	6.05/9	5.55/9	6.15/9	5.25/8
% of Possible Score Achieved	63.9%	63.9%	67.2%	61.7%	68.3%	66%
Overall Category	Ш	Ш	Ш	Ш	II	II

⁽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 2021-2023. 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 (including upland buffer credits) totaled 30.53 in 2023.

Functional Credits – Table 8 summarizes the functional units generated at the Rostad Ranch mitigation site in 2023. 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

⁽b) 2008 MWAM form (Berglund and McEldowney, 2008)

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 completed monitoring period. Following the eleventh year of monitoring, the site achieved 5.25 of 8 possible points and has generated a total of 150.27 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 (2021–2023).

Compensatory Mitigation Type	Wetland Type (FGDC 2013)	Approved Mitigation Ratios ^(a)	Anticipated Mitigation Area (acres)	Anticipated Mitigation Credit (acres)	2021 Delineated Mitigation Areas (acres)	2021 Estimated Mitigation Credit (acres)	2022 Delineated Mitigation Areas (acres)	2022 Estimated Mitigation Credit (acres)	2023 Delineated Mitigation Areas (acres)	2023 Estimated Mitigation Credit (acres)
Restoration (Re-establishment)	Palustrine Emergent	1:1	27.11	27.11 ^(d)	19.30	19.30	19.37	19.37	19.30	19.30
Establishment (Creation)	Palustrine Emergent	1:1	9.84	9.84 ^(d)	7.32	7.32	7.80	7.80	7.88	7.88
Restoration (Rehabilitation)	Palustrine Emergent	1.5:1	2.63	1.75 ^(d)	2.06	1.37	2.06	1.37	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 ^(b)	1.35 ^(b)	12.79 ^(c)	2.56 ^(c)	11.90 ^(c)	2.38 ^(c)	11.62 ^(c)	2.32 ^(c)
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	41.72	30.20	41.38	30.57	41.12	30.53

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

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

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

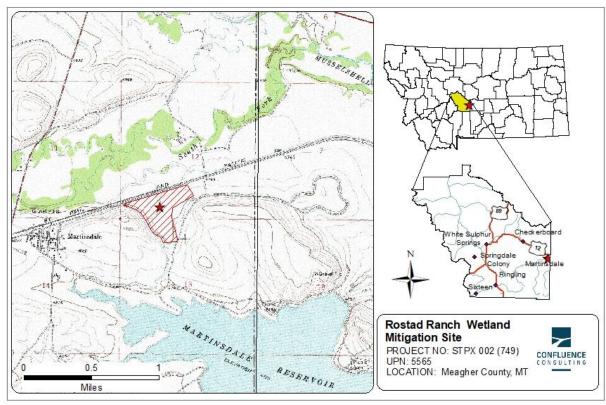
⁽d) Adaptive management activities on the site in 2017 resulted in a shift of crediting such that the total number of anticipated wetland credit acres was reduced to 27.4

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

Compensatory Mitigation Type	2023 Delineated Acres	Mitigation Ratio	2023 Mitigation Credit Acres	MWAM Actual Points	2023 Functional Units Generated
Restoration (Reestablishment)	19.30	1:1	19.30	5.25	101.33
Establishment (Creation)	7.88	1:1	7.88	5.25	41.37
Restoration (Rehabilitation)	2.07	1.5:1	1.38	5.25	7.25
Preservation	0.25	4:1	0.06	5.25	0.32
Upland Buffer	11.62	5:1	2.32	N/A	N/A
		150.27			

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 expanding and 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 2023 monitoring event estimate the generation of 30.53 mitigation credit acres, which exceeds the target number of 27.4-acres. Based on the success of the adaptive management plan and continued wetland expansion which has been documented annually since 2021, the mitigation site has the potential to provide additional wetland credits going forward.

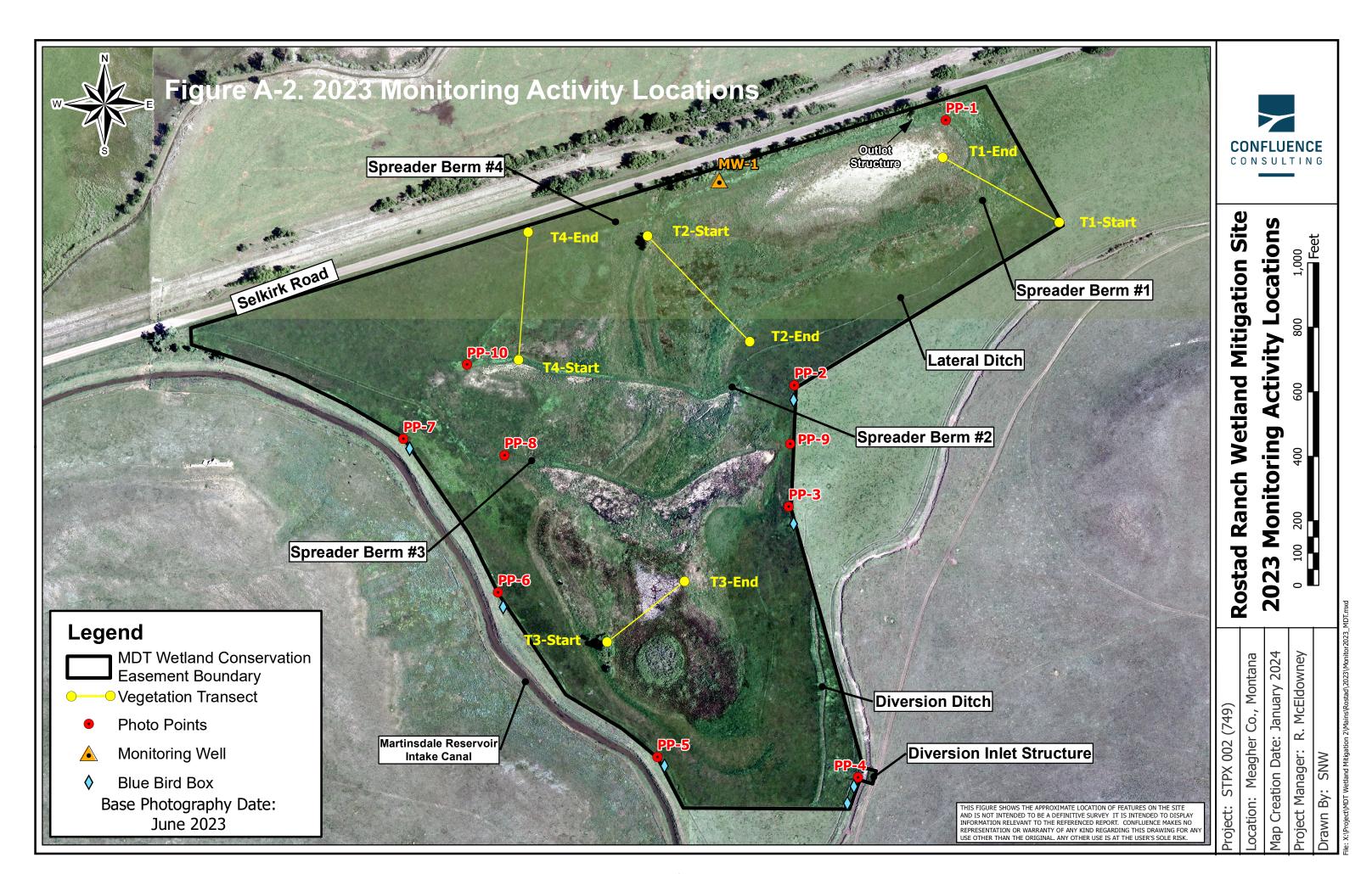
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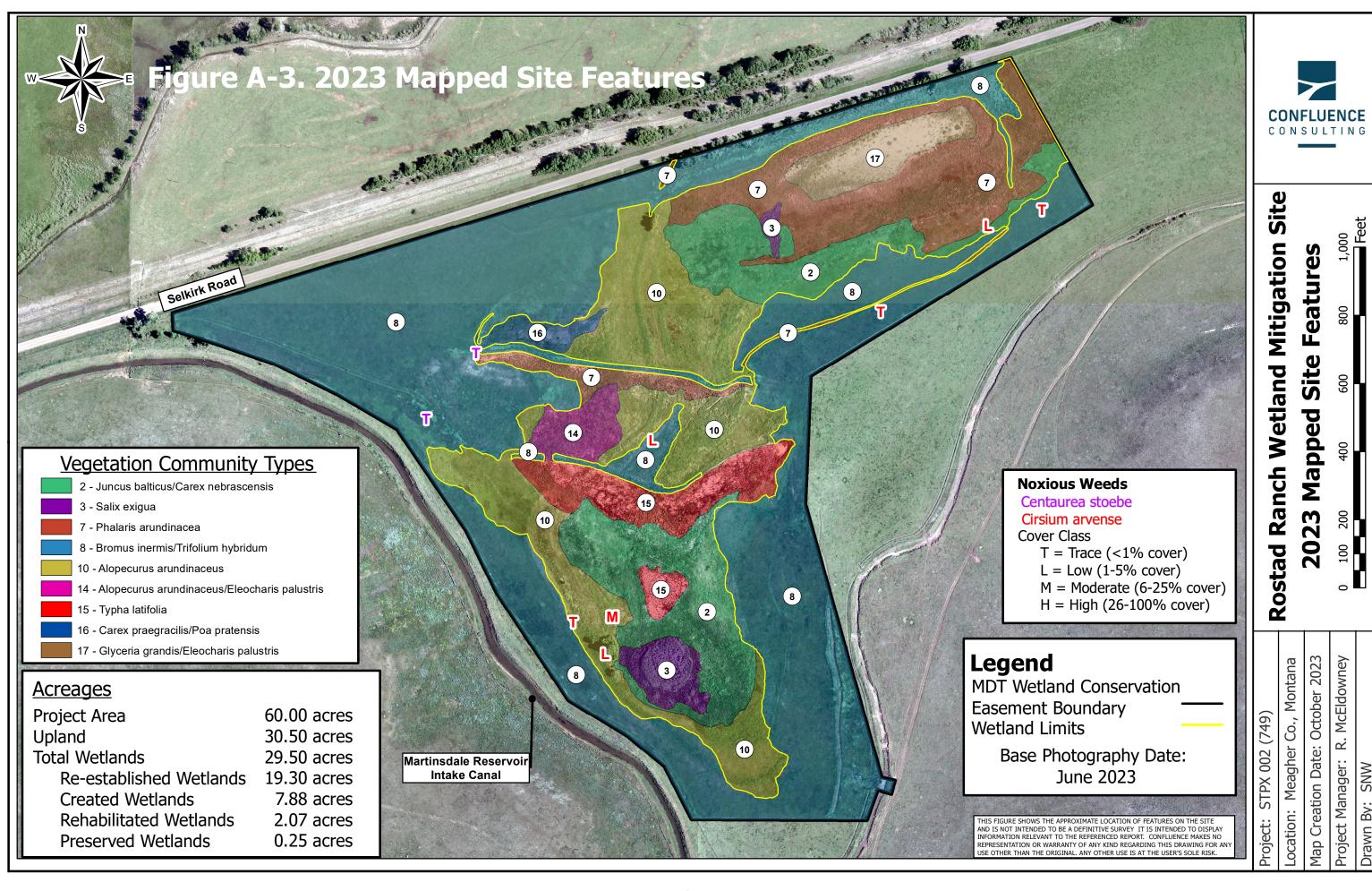
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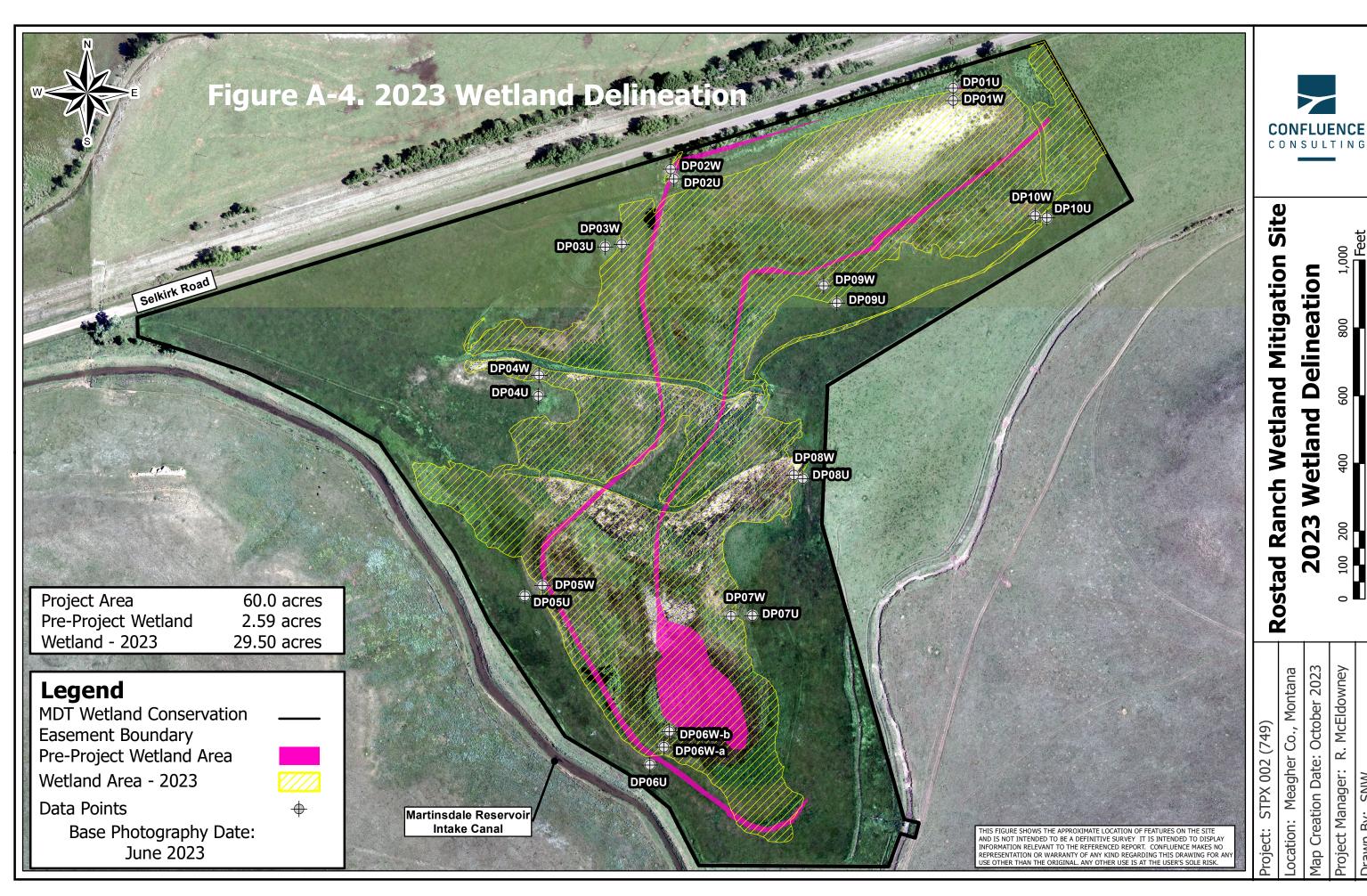
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APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana







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Project Manager:

APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Rostad Ranch Meagher County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Rost	ad Ranch	Asses	ssment Date/Time	6/27/2023
Person(s) conducti	ing the assessment: <u>S</u>	Weyant, K K	ane	
Weather: Sunny, 9	00 degrees	Location	<u>: Martinsdale, MT</u>	
MDT District: Billin	ıgs	Milepost:		<u> </u>
Legal Description:	T 8N R 11E Section	on(s) <u>12 and</u>	13	
Initial Evaluation D	ate <u>: 8/21/2013</u> N	Ionitoring Year	: <u>11</u> #Visits in Year: <u>1</u>	
Size of Evaluation	Area: 60 (acres)		
Land use surround	ing wetland:			
Agriculture				
		HYDROLOGY	(
Surface Water Source:	Groundwater, supp	lemental hydr	ology from ditch/headgate, surfa	ce runoff
Inundation: 🔽	Average Depth:	0 (ft)	Range of Depths: 0-0.25	<u>(ft)</u>
Percent of assessment	area under inundation	n: <u>1 %</u>		
Depth at emergent veg	etation-open water bo	undary:	0 (ft)	
If assessment area is n	ot inundated then are	the soils satura	ated within 12 inches of surface:	Yes
			osion, stained vegetation, etc <u>:</u>	
	oil saturation, water m	narks, geomor	phic position, FAC-neutral test, s	oil surface
Groundwater Moni	itoring Wells			
	ter surface below gro	ound surface, i	in feet.	
Well ID	Water Surface Depth	(ft)		
MW-1	4.71	. ,		
Observe extent of surface elevations (drift lines, erosion,	ion-open water boundary on ace water during each site vi	isit and look for evi	dence of past surface water	
	,	•	s are Below Land Surface (BLS) get Shale of the Montana Group	

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: 6.94

Species	Cover class	Species	Cover class
grostis stolonifera	1	Alopecurus arundinaceus	2
lopecurus pratensis	0	Bare Ground	1
eckmannia syzigachne	0	Bromus inermis	0
arex nebrascensis	4	Carex pellita	3
rex praegracilis	2	Carex utriculata	2
sium arvense	0	Deschampsia caespitosa	0
ocharis palustris	2	Elymus repens	1
lobium ciliatum	0	Hordeum jubatum	1
ncus balticus	5	Mentha arvensis	1
en Water	0	Pascopyrum smithii	0
laris arundinacea	2	Phleum pratense	1
palustris	2	Poa pratensis	2
oulus balsamifera	0	Rumex crispus	1
ix exigua	1	Schedonorus pratensis	0
noenoplectus acutus	0	Sonchus arvensis	1
axacum officinale	0	Thinopyrum intermedium	0
olium hybridum	1	Trifolium pratense	0
glochin maritima	0	Typha latifolia	1

Comments:

Wet meadow community type. In 2023, this WT expanded around the preservation wetland in the south portion of the site and receeded in the northeast portion where reed canarygrass (WT 7) replaced it.

Community # 3 Community Type: Salix exigua / Acres: 1.02

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 2023. Volunteer willows have established in this WT in the north central portion of the site as well.

Community # $\frac{7}{2}$ Community	pe: Phalaris arundinacea /	Acres: <u>6.46</u>
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	3
Alopecurus pratensis	1	Amaranthus retroflexus	0
are Ground	0	Bromus inermis	0
rex aquatilis	0	Carex nebrascensis	2
rex pellita	2	Carex praegracilis	2
sium arvense	0	Deschampsia caespitosa	0
ocharis palustris	2	Elymus repens	2
nus trachycaulus	0	Juncus balticus	2
licago sativa	0	Phalaris arundinacea	4
eum pratense	1	Poa palustris	1
pratensis	2	Populus balsamifera	1
mex crispus	0	Salix exigua	0
aspi arvense	0	Trifolium hybridum	2
oha latifolia	1		

Comments:

This area has expanded and contracted over the last several years, 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: 30.17

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:

UT 11 (Elymus trachycaulus/Pascopyrum smithii) is no longer present at the site and was removed in 2023, leaving UT 8 as the single UT observed at the mitigation site. In 2023, Trifolium spp., which was removed in 2021, was added again as codominant in this community.

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
Bromus inermis	0	Carex aquatilis	1
Carex nebrascensis	2	Carex pellita	2
Cirsium arvense	0	Eleocharis palustris	1
Elymus repens	2	Elymus trachycaulus	0
Hordeum jubatum	0	Juncus balticus	3
Phalaris arundinacea	2	Poa palustris	1
Poa pratensis	2	Populus balsamifera	1
Rumex crispus	1	Salix exigua	0
Typha latifolia	1		

Comments:

Dominant wetland community type at the mitigation site. Alopecurus arundinaceus occurs in near monoculutures, with other species in the community occuring on the outter fringe of the mapped community boundaries.

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.

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
Elymus trachycaulus	1	Glyceria grandis	0
Hippuris vulgaris	0	Open Water	1
Phalaris arundinacea	2	Rumex crispus	1
Salix exigua	1	Schoenoplectus acutus	1
Typha latifolia	4		

Comments:

Cattail marsh. In 2023, inundation was observed only in this community type in the south portion of the site from 0-8" deep. Other cattail marshes 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:

WT created in 2022 to document the transitional species observed along transect 4 where the wetland boundary is expanding north from the berm. The community includes marginal wetland areas that demonstrate wetland hydrology and hydric soil development, but may include more upland rated species.

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.

VEGETATION TRANSECTS

Rostad Ranch		[Date:	6/27/2023	
Transect Number	: <u>1</u>	Compa	ass Dire	ection from Sta	rt: 290
Interval Data:	120	O	Drawa	o in organia / Tuifoliuma	
Ending Station	120	Cover class		s inermis / Trifolium s	Cover cla
Species			Spec		Cover Cla
Bromus inermis		5		pellita	
Carex praegracilis		0	Carun		
Cirsium arvense		0	_	is glomerata	
Elymus repens		1		s balticus	
Melilotus albus		0	Phleu	m pratense	
Poa pratensis		3		lonorus pratensis	
Symphyotrichum ascende	en	0	Taraxa	acum officinale	
Trifolium hybridum		2			
Ending Station	220	Community Type:	Juncus	s balticus / Carex nebi	rascensis
Species		Cover class	Spec	ies	Cover cla
Alopecurus arundinaceus	i	1	Carex	pellita	
Carex praegracilis		3	Elymu	s repens	
Juncus balticus		0	Phleui	m pratense	
Poa pratensis		3	Trifoliu	um hybridum	
Trifolium pratense		1			
Ending Station	255	Community Type:	Phalar	is arundinacea /	
Species		Cover class	Spec	ies	Cover cla
Agrostis stolonifera		1	Alope	curus arundinaceus	
Carex nebrascensis		1	Carex	pellita	
Carex praegracilis		1	Eleoch	naris palustris	
Elymus repens		1	Juncu	s balticus	
Phalaris arundinacea		4	Poa p	ratensis	
Ending Station	273	Community Type:	Bromu	s inermis / Trifolium s	pp.
Species	_	Cover class	Spec	ies	Cover cla
Elymus repens		4	-	s trachycaulus	
Phalaris arundinacea		4		ratensis	

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	s palustris
Species	Cover class	Species	Cover class
Bare Ground	2	Eleocharis palustris	2
Glyceria grandis	1	Phalaris arundinacea	3
Rumex crispus	0	Schoenoplectus acutus	0
Typha latifolia	1		

Transect Notes:

No open water was observed along transect 1 in 2023. UT 11 is no longer present at the site and has been replaced with UT 8, decreasing the number of communities observed along the transect.

Transect Number:	2	Compas	ss Direction from Star	t : <u>120</u>
Interval Data:				
Ending Station	42	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	2
Phalaris arundinacea		3	Poa palustris	0
Poa pratensis		2	Populus balsamifera	1
Ending Station	288	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		3	Phleum pratense	0
Poa palustris		1	Poa pratensis	2
Thinopyrum intermedium		0		
Ending Station	420	Community Type:	Alopecurus arundinaceus /	
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		2	Bare Ground	2
Carex aquatilis		0	Juncus balticus	1
Phalaris arundinacea		5	Poa pratensis	2
Ending Station	453	Community Type:	Bromus inermis / Trifolium sp	p.
Species		Cover class	Species	Cover class
Bromus inermis		5	Cirsium arvense	0
Phalaris arundinacea		1	Phleum pratense	2
Poa pratensis		3	Schedonorus pratensis	0
Taraxacum officinale		1	Thinopyrum intermedium	0
Trifolium hybridum		2	Trifolium repens	0
_				

In 2023, WT2 expanded east and the associated remapping of community boundaries decreased the number of community transitions along the transect from 5 to 3.

Transect Notes:

Transect Number:	3	Compas	ss Direction from Sta	rt: <u>30</u>
Interval Data:				
Ending Station	6	Community Type:	Alopecurus arundinaceus /	
Species		Cover class	Species	Cover class
Agrostis stolonifera		1	Alopecurus arundinaceus	2
Cirsium arvense		0	Eleocharis palustris	0
Juncus balticus		3	Phalaris arundinacea	3
Poa pratensis		1	Populus balsamifera	4
Ending Station	115	Community Type:	Juncus balticus / Carex nebr	ascensis
Species		Cover class	Species	Cover class
Agrostis stolonifera		1	Alopecurus arundinaceus	2
Carex nebrascensis		2	Carex pellita	2
Cirsium arvense		0	Eleocharis palustris	2
Juncus balticus		4	Phalaris arundinacea	1
Phleum pratense		2	Salix exigua	1
Schedonorus pratensis		0	Sonchus arvensis	2
Taraxacum officinale		1	Typha latifolia	1
Ending Station	288	Community Type:	Typha latifolia /	
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		1	Bare Ground	1
Carex nebrascensis		2	Carex pellita	1
Carex utriculata		2	Eleocharis palustris	3
Glyceria grandis		2	Open Water	1
Phalaris arundinacea		0	Salix exigua	1
Typha latifolia		5		
Ending Station	306	Community Type:	Juncus balticus / Carex nebr	ascensis
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		2	Carex nebrascensis	1
Carex pellita		1	Carex utriculata	1
Eleocharis palustris		1	Juncus balticus	3
Phalaris arundinacea		2	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. Open water along the transect ranged from 0-8' deep.

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

Transect Notes:

This transect starts on an upland berm vegetated with reed canarygrass, but lacks hydric soil development and evidence of wetland hydrology.

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 2023, 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.

Rostad Ranch

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?	No
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. All other bird boxes appear in good condition with little evidence of use, except for the two bird boxes located near the diversion inlet structure. These were surrounded by birds on the fenceline.

Species	#Observed	Behavior	Habitat
American Crow	1	L, FO	
American Robin	1	L, FO	
American White Pelican	5	FO, N	
Bald Eagle	1	L, FO	
Black-headed Grosbeak	1	L	
Bobolink	12	N, L, F, FO	
Brown-headed Cowbird	12	L, FO	
Canada Goose	1	FO	
Cinnamon Teal	2	FO	
Common Yellowthroat	1	L, FO	
Killdeer	1	F	
Least Flycatcher	1	L	
Long-billed Curlew	1	L	
Mallard	3	FO	
Northern Harrier	1	FO	
Red-winged Blackbird	15	N, L, F	
Ring-billed Gull	7	FO	
Sandhill Crane	1	FO, F, N	
Savannah Sparrow	1	L, FO	
Song Sparrow	1	L, FO	
Tree Swallow	3	L	
Turkey Vulture	3	FO	
Warbling Vireo	1	L	B-12

Western Meadowlark 1 L
Western Tanager 1 L
White-breasted Nuthatch 1 L
Wilson's Snipe 2 F, L
Yellow Warbler 1 L, FO

Bird Comments

28 bird species observed in 2023.

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
Op00.00	" Obcolled Hacke Coal	

Antelope	2	No	No	No
Boreal Chorus Frog		No	No	No
White-tailed Deer	3	Yes	Yes	Yes

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	46.462959	-110.291902	
DP01w	46.46307	-110.292021	
DP02u	46.463946	-110.292406	
DP02w	46.464009	-110.29231	
DP03a-w	46.463186	-110.295234	
DP03b-w	46.462806	-110.29508	
DP03u	46.46335	-110.29531	
DP04u	46.462685	-110.29717	
DP04w	46.462662	-110.29695	
DP05u	46.46168	-110.29856	
DP05w	46.461684	-110.29842	
DP06a-w	46.45934	-110.295285	
DP06b-w	46.459327	-110.295935	
DP06u	46.459437	-110.295096	
DP07u	46.459547	-110.297411	
DP07w	46.459646	-110.297244	
DP08u	46.460599	-110.294856	
DP08w	46.460652	-110.294993	
DP09u	46.461073	-110.296365	
DP09w	46.461141	-110.296461	
DP10u	46.462259	-110.293734	
DP10w	46.462229	-110.293657	
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	B-15

Photo point 5	46.458417	-110.296185
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
☐ ✓ Iines	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, vegetation staining, erosion, etc).
	Photos
V V V	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
✓ Ma	ap vegetation community boundaries
✓ Co	emplete Vegetation Transects
	Soils
✓ As	ssess soils
	Wetland Delineations
✓ Supp	Delineate wetlands according to applicable USACE protocol (1987 form or lement)
	Delineate wetland – upland boundary onto aerial photograph.
Wetla	and Delineation Comments
29	0.50 acres of wetland delineated in 2023.
	Functional Assessments
✓ forms	Complete and attach full MDT Montana Wetland Assessment Method field s.
Func	tional Assessment Comments:
Tr	ne 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.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad	(City/Co	ountv.	Meaghe	er County	Sampling [Date: 202	3-06-27
Applicant/Owner: MDT		-	-		State: Montana		·	
• •					nge: S12 T8N R11E	campining i		
Landform (hillslope, terrace, etc.):							Slone (%	ر _ا ، 25
Subregion (LRR): E 46								
Soil Map Unit Name: 854B - Varney-Coyoteflats com								
•						<u>-</u>	паррса	
Are climatic / hydrologic conditions on the site typical for this	-							
Are Vegetation, Soil, or Hydrology si					'Normal Circumstances" p	resent? Ye	es	No
Are Vegetation, Soil, or Hydrology na	aturally pro	blema	tic?	(If ne	eeded, explain any answe	rs in Remar	ks.)	
SUMMARY OF FINDINGS - Attach site map s	howing	sam	plin	g point l	ocations, transects	, importa	nt featu	res, etc.
Hydrophytic Vegetation Present? Yes No	~							
Hydric Soil Present? Yes No	· •			e Sampled			J	
Wetland Hydrology Present? Yes No	· ·		withi	in a Wetlar	nd? Yes	No		
Remarks:								
Elevated berm between excavated wetland	cell and	irria	atior	n ditch (s	south). Approximat	elv 3' hia	her in	
elevation than paired wetland sample point.		9		(, , , , , , , , , , , , , , , , , , ,	., cg	,	
VEGETATION – Use scientific names of plant	•							
VEGETATION – Ose scientific frames of plant	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,		١	
2					(excluding FAC-):		,	(A)
3					Total Number of Domin			
4					Species Across All Stra	ıta: <u>2</u>	2	(B)
Sapling/Shrub Stratum (Plot size: 15 ft r	0	= Tota	al Cov	er	Percent of Dominant Sp			(4.45)
1					That Are OBL, FACW,	or FAC: <u>U</u>	0.00	(A/B)
2.					Prevalence Index wor	ksheet:		
3.					Total % Cover of:		Multiply by:	
4.						x 1 =		
5.					FACW species 0			
_	0	= Tota	al Cov	er		x 3 =		
Herb Stratum (Plot size: 5 ft r				LIDI	FACU species 45			
1. Bromus inermis	55		_	UPL	·	x 5 =		
2. Elymus repens 3. Poa pratensis	35 10			FACU	Column Totals: 100	(A)	455	(B)
				FACU	Prevalence Index	= B/A = <u>4</u>	.55	
4					Hydrophytic Vegetation	on Indicator	rs:	
5					1 - Rapid Test for I	Hydrophytic	Vegetation	
6					2 - Dominance Tes	it is >50%		
7 8					3 - Prevalence Inde	ex is ≤3.0 ¹		
9.					4 - Morphological A	Adaptations ¹	(Provide s	upporting
10.					data in Remarks		•	,
	400	= Tota	al Cov	er	Problematic Hydro	pnytic veget	tation (Exp	olain)
Woody Vine Stratum (Plot size: 30 ft r) 1					¹ Indicators of hydric soi be present, unless distu			y must
2.					Hydrophytic			
	_	= Tota	al Cov	er	Vegetation	_	V	
% Bare Ground in Herb Stratum 0					Present? Ye	s	No	-
Remarks:								
Bromus inermis is dominant in this ve	getatio	on c	omi	munity	. Phalaris arundi	inacea i	s begir	nning
to creep up the berm in some areas.				J			-	_

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SOIL Sampling Point: DP01U

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confir	m the absence	of indicators.)
Depth	Matrix			x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 5	2.5Y 3/2	100					Clay Loam	
5 - 16	2.5Y 4/3	95	10YR 6/4	5	С	М	Sandy Clay Loam	Shale fragments and cobbles
-								
-								
				-			-	
								
			=Reduced Matrix, C			ed Sand G		ation: PL=Pore Lining, M=Matrix.
-		cable to all	LRRs, unless othe					for Problematic Hydric Soils ³ :
Histosol	` '		Sandy	-	. ,			luck (A9) (LRR I, J)
Black Hi	oipedon (A2)		-	Redox (St d Matrix (\$				Prairie Redox (A16) (LRR F, G, H) urface (S7) (LRR G)
	en Sulfide (A4)			,	neral (F1)			lains Depressions (F16)
	d Layers (A5) (LRR	F)		Gleyed M	. ,		_	R H outside of MLRA 72 & 73)
	ıck (A9) (LRR F, G ,		Deplete	ed Matrix ((F3)		Reduce	ed Vertic (F18)
	d Below Dark Surfa	ce (A11)		Dark Surfa	` ,			arent Material (TF2)
·	ark Surface (A12) Mucky Mineral (S1)			ed Dark Si Depressio	urface (F7))		hallow Dark Surface (TF12) Explain in Remarks)
	Mucky Peat or Peat	(S2) (LRR		•	essions (F	16)		of hydrophytic vegetation and
	icky Peat or Peat (73 of LRR	•		I hydrology must be present,
							unless	disturbed or problematic.
Restrictive I	Layer (if present):							
Type:								.,
	ches):						Hydric Soil	Present? Yes No
Remarks:								
Although	h concentra	tions w	ere observed	d, this	soil do	es no	t meet hyd	dric soil requirements.
HYDROLO	GY							
Wetland Hyd	drology Indicators	:						
Primary Indic	cators (minimum of	one require	d; check all that app	ly)			Seconda	ry Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surf	ace Soil Cracks (B6)
High Wa	iter Table (A2)		Aquatic In	vertebrate	es (B13)		Spar	sely Vegetated Concave Surface (B8)
Saturation	on (A3)		Hydrogen	Sulfide O	dor (C1)		Drai	nage Patterns (B10)
Water M			Dry-Seaso					lized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized			ing Roots		here tilled)
	posits (B3)		•	not tilled)		4.	-	rfish Burrows (C8)
	at or Crust (B4)		Presence		•	4)		ration Visible on Aerial Imagery (C9)
-	oosits (B5) on Vis ble on Aerial	Imagory (P	Thin Mucl Other (Ex					morphic Position (D2) -Neutral Test (D5)
	tained Leaves (B9)	illiagery (D	7) Other (EX	piaiii iii ixe	emarks)		· <u></u>	t-Heave Hummocks (D7) (LRR F)
Field Observ								(Entr)
Surface Water		Yes	No V Depth (in	iches):				
Water Table			No Pepth (in					
Saturation Pr			No Depth (in				land Hydrology	Present? Yes No
(includes cap	oillary fringe)							
Describe Red	corded Data (strear	n gauge, m	onitoring well, aerial	photos, pi	revious ins	pections)	, it available:	
Daws								
Remarks:								
No evide	ence of wetl	and hy	drology obse	rved.	Soils n	noist ii	n upper ho	orizon, and drier below.

Project/Site: Rostad	(Citv/Co	ountv	Meaghe	er County Sampling Date: 2023-06-27
Applicant/Owner: MDT		-	-		State: Montana Sampling Point: DP01W
• •	,				nge: S12 T8N R11E
Landform (hillslope, terrace, etc.): Open Depression					
					Long: <u>-110.293183</u> Datum: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats c	omplex, 2 to	o 4 pe	ercer	nt slopes	NWI classification: Not mapped
Are climatic / hydrologic conditions on the site typical for t	this time of yea	ar? Ye	es	No	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology					"Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	_ naturally pro	blema	tic?	(If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site ma	p showing	sam	plin	g point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No				
Hydric Soil Present? Yes	No			e Sampled in a Wetlar	
Wetland Hydrology Present? Yes	No		WILII	ili a vvetiai	iu: lesNo
Remarks:					
PEM, depressional wetland. Sample point	is located	in th	e ex	cavated	wetland cell in the northeast portion of
the mitigation site.					
VEGETATION – Use scientific names of pla					
Tree Stratum (Plot size: 30 ft r	Absolute <u>% Cover</u>				Dominance Test worksheet:
1	· · · · · · · · · · · · · · · · · · ·				Number of Dominant Species That Are OBL, FACW, or FAC
2.					(excluding FAC-): $\frac{2}{}$ (A)
3					Total Number of Dominant
4					Species Across All Strata: 2 (B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	0			er er	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
1					Prevalence Index worksheet:
2					Total % Cover of: Multiply by:
3		-			OBL species <u>25</u> x 1 = <u>25</u>
5					FACW species $\frac{15}{2}$ $\times 2 = \frac{30}{2}$
	_	= Tota	al Cov	ver	FAC species $0 \times 3 = 0$
Herb Stratum (Plot size: 5 ft r 1. Eleocharis palustris	20		,	OBL	FACU species $\frac{2}{0}$ $x = \frac{8}{0}$ UPL species $x = \frac{8}{0}$
2. Phalaris arundinacea	<u>20</u>		<u>, </u>	FACW	UPL species 0 $x = 0$ Column Totals: 42 A
3. Typha latifolia	$-\frac{10}{4}$			OBL	
4. Elymus repens	2	-		FACU	Prevalence Index = B/A = 1.50
5. Glyceria grandis	1			OBL	Hydrophytic Vegetation Indicators:
6.					✓ 1 - Rapid Test for Hydrophytic Vegetation
7					 ✓ 2 - Dominance Test is >50% ✓ 3 - Prevalence Index is ≤3.0¹
8					4 - Morphological Adaptations ¹ (Provide supporting
9					data in Remarks or on a separate sheet)
10	4.0				Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1.		= Tota	al Cov	er er	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.					Hydrophytic
	_	= Tota	al Cov	ver	Vegetation Present? Yes No
% Bare Ground in Herb Stratum 58 Remarks:					11030Ht: 163NO
	d cattail	li++~	r		
Bare ground includes algal mats an	iu cattall	ntte	1.		

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SOIL Sampling Point: DP01W

Profile Desc	ription: (Describe	to the dep	oth needed to docun	nent the	indicator	or confir	m the absence	of indicators.)					
Depth	Matrix			x Feature	es 1	2							
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks					
0 - 7	10YR 3/2	100					Sandy Clay Loam	Roots					
7 - 16	2.5Y 4/2	90	2.5Y 5/6	10	С	М	Sandy Clay Loam	Shale fragments throughout.					
-													
-	-		-		-		·	<u> </u>					
	-						· <u></u>						
-													
¹Type: C=Co	oncentration D=Dep	letion RM	=Reduced Matrix, CS	S=Covere	d or Coate	ed Sand G	Grains ² Loc	cation: PL=Pore Lining, M=Matrix.					
			LRRs, unless other			ou cuna c		for Problematic Hydric Soils ³ :					
Histosol					atrix (S4)			fluck (A9) (LRR I, J)					
	pipedon (A2)			Redox (S	. ,			Prairie Redox (A16) (LRR F, G, H)					
Black His	stic (A3)		Stripped	Matrix (36)		Dark S	surface (S7) (LRR G)					
	n Sulfide (A4)		•	-	neral (F1)		_	lains Depressions (F16)					
	l Layers (A5) (LRR F	•			atrix (F2)		`	R H outside of MLRA 72 & 73)					
	ck (A9) (LRR F, G, I	•	<u>✓</u> Depleted	,	,			ed Vertic (F18)					
	l Below Dark Surfac ark Surface (A12)	e (A11)		Dark Surfa	ace (F6) urface (F7	`		arent Material (TF2) hallow Dark Surface (TF12)					
	lucky Mineral (S1)			Dark Si Depressio)	-	(Explain in Remarks)					
-	lucky Peat or Peat (S2) (LRR			essions (F	16)		of hydrophytic vegetation and					
	cky Peat or Peat (S				73 of LRF			d hydrology must be present,					
							unless	disturbed or problematic.					
Restrictive L	ayer (if present):												
Type:													
Depth (inc	ches):						Hydric Soil	Present? Yes No					
Remarks:							ľ						
Dromine	nt redovimor	rphic c	oncentration	e com	mon v	vithin t	he denlet	ad matriv					
1 TOTTILLE	iit redoxiiiioi	priic c	oncentiation.	3 COIII	IIIOII V	VICIIIII (ine depiet	ed matrix.					
	CV												
HYDROLO													
_	drology Indicators:												
-		ne require	d; check all that apply	y)			·	ry Indicators (minimum of two required)					
	Water (A1)		Salt Crust				·	ace Soil Cracks (B6)					
	ter Table (A2)		Aquatic Inv		. ,			rsely Vegetated Concave Surface (B8)					
<u>✓</u> Saturatio			Hydrogen					nage Patterns (B10)					
	arks (B1)		Dry-Seaso					dized Rhizospheres on Living Roots (C3)					
	t Deposits (B2)		Oxidized R			ing Roots		there tilled)					
	oosits (B3)		(where r			4)		/fish Burrows (C8)					
	t or Crust (B4)		Presence of		,	4)		uration Visible on Aerial Imagery (C9)					
	osits (B5)	magani (D	Thin Muck		. ,			morphic Position (D2) -Neutral Test (D5)					
·	on Vis ble on Aerial I tained Leaves (B9)	magery (B	(Exp	nam m Re	emarks)			st-Heave Hummocks (D7) (LRR F)					
Field Observ							1103	serieave ridillillocks (DT) (ERRT)					
Surface Wate		00	No Depth (inc	chae).									
Water Table			No Depth (inc										
		_					land Usdralam	y Present? Yes V No No					
Saturation Pr (includes cap		es <u> </u>	No Depth (inc	cnes): <u>U</u>		wet	iana Hyarolog	y Present? Yes No					
		gauge, m	onitoring well, aerial p	ohotos, pi	revious ins	spections)	, if available:						
Remarks:													
Evidence	of wetland hvd	roloav i	ncludes saturati	on to t	he soil	surface	, algal mats	geomorphic position, and a					
	ac-neutral test.						. •						

Project/Site: Rostad	(City/County	_{/:} Meaghe	r County	Sampling Date:	2023-06-27
				State: Montana		
				nge: S12 T8N R11E		
Landform (hillslope, terrace, etc.): Valley Floor				=	Slor	oe (%): 0
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				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map						atures, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	o <u> </u>		ne Sampled nin a Wetlar		No	
Upland sample point on terrace above		ric we	tland.			
VEGETATION – Use scientific names of plan		Dominant	t Indicator	Deminence Test work	ob a st	
Tree Stratum (Plot size: 30 ft r)	% Cover		Status	Dominance Test work Number of Dominant S That Are OBL, FACW, (excluding FAC-):	pecies	(A)
2				Total Number of Domin Species Across All Stra	•	
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total Co	ver	Percent of Dominant Sport That Are OBL, FACW,		(A/B)
2.				Prevalence Index wor	ksheet:	
3.				Total % Cover of:		
4.					x 1 = 0	
5		-		FACW species 0		
Hash Otasham (Distriction 5 ft r	0	= Total Co	ver		x 3 = 0 $x 4 = 140$	
Herb Stratum (Plot size: 5 ft r 1. Bromus inermis	45	~	UPL	UPL species 45		
2. Elymus repens	20		FACU	Column Totals: 80		
3. Poa pratensis	8		FACU			
4. Sisymbrium altissimum	5		FACU	Prevalence Index		
5. Thlaspi arvense	2		FACU	Hydrophytic Vegetation 1 - Rapid Test for H		ation
6				2 - Dominance Tes		alion
7				3 - Prevalence Inde		
8				4 - Morphological A		ide supporting
9				data in Remark	s or on a separate	sheet)
10	~~	= Total Co		Problematic Hydro	phytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soi be present, unless distu		
2 % Bare Ground in Herb Stratum 20	_	= Total Co	ver	Hydrophytic Vegetation Present? Ye	s No	<u> </u>
Remarks:				<u>I</u>		
Bromus inermis and Elymus repens a	are the	domina	ant spec	cies at the samp	le point.	

SOIL Sampling Point: DP02U

Profile Desc	ription: (Describe	to the depth n	eeded to docun	nent the i	ndicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redox	x Features	3			
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 5	10YR 4/2	100					Sandy Clay Loam	
5 - 12	2.5Y 4/2	100					Sandy Loam	Gravelly
-								
	-			. ———				
				. ——				
	_							
	oncentration, D=Dep					d Sand Gr	rains. ² Loc	cation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applic	able to all LRR	s, unless other	wise note	ed.)		Indicators	for Problematic Hydric Soils ³ :
Histosol	` ,		Sandy C	•	. ,			Muck (A9) (LRR I, J)
	ipedon (A2)		-	Redox (S5)				Prairie Redox (A16) (LRR F, G, H)
Black His				Matrix (S	,			Surface (S7) (LRR G)
	n Sulfide (A4) I Layers (A5) (LRR I	E)	-	Mucky Min Gleyed Ma				Plains Depressions (F16)
	ck (A9) (LRR F, G ,	•	-	d Matrix (F			`	ed Vertic (F18)
	Below Dark Surfac			Dark Surfa			_	arent Material (TF2)
	rk Surface (A12)	` ,		d Dark Su	, ,			shallow Dark Surface (TF12)
Sandy M	lucky Mineral (S1)		Redox D	Depression	ns (F8)			(Explain in Remarks)
	lucky Peat or Peat (ains Depre	•	•		of hydrophytic vegetation and
5 cm Mu	cky Peat or Peat (S	3) (LRR F)	(ML	RA 72 & 7	3 of LRR	H)		d hydrology must be present,
Postriotivo I	ayer (if present):						unless	disturbed or problematic.
	bble bottom							
Depth (inc			•				Unadaia Cail	Present? Vas No V
•	nes). <u>12</u>		-				Hydric Soil	Present? Yes No
Remarks:							_	
-		observed. S	Sample pit co	ould not	t be rea	sonably	/ excavated	d deeper due to an extremely
cobbley la	yer.							
HYDROLO(GY							
Wetland Hyd	drology Indicators:	:						
Primary Indic	ators (minimum of o	one required; ch	eck all that apply	y)			Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surf	face Soil Cracks (B6)
	ter Table (A2)		Aquatic Inv		s (B13)			rsely Vegetated Concave Surface (B8)
Saturatio	on (A3)		Hydrogen	Sulfide Oc	dor (C1)		Drai	nage Patterns (B10)
Water M	arks (B1)		Dry-Seaso				Oxio	dized Rhizospheres on Living Roots (C3)
Sedimen	t Deposits (B2)		Oxidized R	Rhizospher	res on Livi	ing Roots	(C3) (w	here tilled)
Drift Dep	osits (B3)		(where r	not tilled)			Cray	yfish Burrows (C8)
Algal Ma	t or Crust (B4)		Presence of	of Reduce	d Iron (C4	·)	Satu	uration Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)		Thin Muck	Surface (C7)		Geo	emorphic Position (D2)
Inundation	on Vis ble on Aerial	Imagery (B7)	Other (Exp	lain in Re	marks)		FAC	C-Neutral Test (D5)
Water-St	tained Leaves (B9)						Fros	st-Heave Hummocks (D7) (LRR F)
Field Observ								
Surface Water			Depth (inc					
Water Table	Present?	'es No _	✓ Depth (inc	ches):		_		
Saturation Pr		'es No _	✓ Depth (inc	ches):		Wetl	and Hydrolog	y Present? Yes No
(includes cap	oillary fringe) corded Data (stream	n dalide monito	ring well aerial r	nhotos pre	evious inc	nections)	if available.	
Describe IVE	oraca Dala (sirean	i gauge, monito	inig won, acrial p	notos, pre	C 11003 1115	podiona),	n avanabic.	
Remarks:								
				_				
No evide	ence of wetla	and hydro	logy obse	rved.				

Project/Site: Rostad	(Citv/Countv	Meaghe	er County	Sampling Date: 2023-0	06-27
Applicant/Owner: MDT					Sampling Point: DP02W	
• •				nge: S12 T8N R11E		
Landform (hillslope, terrace, etc.): Artificial Drainage Pa					Slope (%):	10
Subregion (LRR): E 46						
Soil Map Unit Name: 854B - Varney-Coyoteflats con				=		
•						
Are climatic / hydrologic conditions on the site typical for this	-					./
Are Vegetation, Soil, or Hydrologys					resent? Yes No	
Are Vegetation, Soil, or Hydrologyn	aturally pro	blematic?	(If ne	eeded, explain any answer	's in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing	samplin	g point l	ocations, transects	, important features	, etc.
Hydrophytic Vegetation Present? Yes N	0			_		
Hydric Soil Present? Yes V	0		e Sampled	and the second s	No	
Wetland Hydrology Present? Yes N	0	with	in a wetiai	nd? Yes	NO	
Remarks:						
PEM, riverine wetland. Sample point within	historic v	wetland r	near the	north boundary of t	the mitigation site.	
VEGETATION – Use scientific names of plan	ts.					
		Dominant	Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft r	% Cover			Number of Dominant Sp		
1				That Are OBL, FACW, o	or FAC	(4)
2				(excluding FAC-):		(A)
3				Total Number of Domina		(D)
4				Species Across All Strat	ta: <u>2</u>	(B)
Sapling/Shrub Stratum (Plot size: 15 ft r	0	= Total Cov	/er	Percent of Dominant Sp	ecies	(A (D)
1. Populus balsamifera	10	~	FACW	That Are OBL, FACW, o	or FAC: 100.00	(A/B)
2.				Prevalence Index work	(sheet:	
3					Multiply by:	
4.					x 1 = 0	
5	<u> </u>				x 2 = 180	
F 64 %	10	= Total Cov	/er		x 3 = 0	=
Herb Stratum (Plot size: 5 ft r) 1. Phalaris arundinacea	75	./	FACW	FACU species 0		-
			FACW	UPL species 0 Column Totals: 90	x = 0	- (D)
				Column Totals. 50	(A) <u>100</u>	(B)
3				Prevalence Index	= B/A = 2.00	_
4				Hydrophytic Vegetation	n Indicators:	
6				✓ 1 - Rapid Test for H		
7				<u>✓</u> 2 - Dominance Test		
8.				✓ 3 - Prevalence Inde		
9					daptations ¹ (Provide supposor on a separate sheet)	orting
10					phytic Vegetation ¹ (Explain	1)
20 # *	80	= Total Cov	/er	<u> </u>		•
Woody Vine Stratum (Plot size: 30 ft r)				be present, unless distu	and wetland hydrology murbed or problematic.	ust
1						
2	_	= Total Cov		Hydrophytic Vegetation	. 1	
% Bare Ground in Herb Stratum 20.0	-	Total COV	, 01	Present? Yes	s No	
Remarks:				•		
Vegetation is a near monoculture of	Phalari	s arund	linacea	. Trees visible o	n the aerial are	
outside of the wetland boundaries.						
paraide of the Welland Dudinalies.						

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SOIL Sampling Point: DP02W

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the	indicator	or confirm	m the absence	of indicators.)					
Depth	Matrix			k Feature	s 1	2							
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks					
0 - 6	10YR 4/2	100					Mucky Loam/Clay	High root/litter content. OM/Mineral					
6 - 16	10YR 4/1	98	10YR 5/8	2	С	М	Sandy Loam	Gravelly					
-													
				-	•								
				-		-							
							· ·						
							· -						
-													
¹Type: C=Co	ncentration D=Dep	letion RM:	=Reduced Matrix, CS	=Covere	d or Coate	ed Sand G	irains ² l oc	cation: PL=Pore Lining, M=Matrix.					
			LRRs, unless other			ou cuna c		for Problematic Hydric Soils ³ :					
Histosol					atrix (S4)			fluck (A9) (LRR I, J)					
	ipedon (A2)			Redox (S	. ,			Prairie Redox (A16) (LRR F, G, H)					
Black His	stic (A3)		Stripped	Matrix (36)		Dark S	surface (S7) (LRR G)					
	n Sulfide (A4)		Loamy N	/lucky Mi	neral (F1)		High P	lains Depressions (F16)					
·	Layers (A5) (LRR F	•			atrix (F2)		•	R H outside of MLRA 72 & 73)					
	ck (A9) (LRR F, G, I		<u>✓</u> Depleted		,		_	ed Vertic (F18)					
	l Below Dark Surface rk Surface (A12)	e (A11)		ark Surf	ace (F6) urface (F7	`		arent Material (TF2) hallow Dark Surface (TF12)					
	ucky Mineral (S1)			epressio		,		(Explain in Remarks)					
-	lucky Peat or Peat (S2) (LRR (essions (F	- 16)		of hydrophytic vegetation and					
	cky Peat or Peat (S				73 of LRF			d hydrology must be present,					
							unless	disturbed or problematic.					
Restrictive L	.ayer (if present):												
Type:													
Depth (inc	ches):						Hydric Soil	Present? Yes No					
Remarks:							II.						
Mucky mir	neral upper lave	er. Prom	inent redoximo	rphic c	oncenti	rations	common wit	thin the depleted matrix.					
,													
	0)/												
HYDROLO													
-	Irology Indicators:												
-		ne require	d; check all that apply	/)			·	ry Indicators (minimum of two required)					
<u>✓</u> Surface \			Salt Crust				·	ace Soil Cracks (B6)					
_	ter Table (A2)		Aquatic Inv					rsely Vegetated Concave Surface (B8)					
<u>✓</u> Saturatio			Hydrogen					nage Patterns (B10)					
	arks (B1)		Dry-Seaso					dized Rhizospheres on Living Roots (C3)					
	t Deposits (B2)		Oxidized R			ing Roots		there tilled)					
	osits (B3)		(where n					rfish Burrows (C8)					
	t or Crust (B4)		Presence o			4)	· · · · · · · · · · · · · · · · · · ·	uration Visible on Aerial Imagery (C9)					
-	osits (B5)		Thin Muck					morphic Position (D2)					
	on Vis ble on Aerial I ained Leaves (B9)	magery (B	7) Other (Exp	iain in Re	emarks)			:-Neutral Test (D5) st-Heave Hummocks (D7) (LRR F)					
Field Observ							FIUS	BI-Heave Hullillocks (D7) (LKK F)					
Surface Wate		~~ /	No Depth (inc	hoo): 2									
						_							
Water Table		_	No Depth (inc			-		5 10 W W N					
Saturation Pr (includes cap		es	No Depth (inc	thes): <u>U</u>		wet	land Hydrolog	y Present? Yes No					
		gauge, mo	onitoring well, aerial p	hotos, pi	evious in	spections)	, if available:						
			•										
Remarks:													
Evidence	of wetland hyd	rology i	ncludes surface	wator	high w	ater tah	nla saturati	on to the soil surface, algal					
	-	•			-		-						
mais, wat	er-stairied leav	es, geo	morphic positio	i, allu i	a positi	ve rac-r	ieutiai test.						

Project/Site: Rostad		City/Co	unty:	Meaghe	r County	Samplin	Sampling Date: 2023-06-28		
Applicant/Owner: MDT	State: Montana Sampling Point: DP03U								
Investigator(s): S Weyant, K Kane		Section	n, To	wnship, Ra	nge: S12 T8N R11E				
					convex, none): Linear		Slope	(%): <u>5</u>	
Subregion (LRR): E 46	Lat: 46.	.4626	15		Long: -110.296945		Datum:	NAD 83	
Soil Map Unit Name: 854B - Varney-Coyoteflats co	mplex, 2 to	o 4 pe	rcer	nt slopes	NWI classific	ation: N	ot mapped	t	
Are climatic / hydrologic conditions on the site typical for the	nis time of yea	ar? Ye	s '	No	(If no, explain in R	emarks.)			
Are Vegetation, Soil, or Hydrology	-				Normal Circumstances" p			No	
Are Vegetation, Soil, or Hydrology					eded, explain any answe				
SUMMARY OF FINDINGS – Attach site map				•			•	ures, etc.	
Hydrophytic Vegetation Present? Yes	No 🗸		l= 4l=	- Camania d					
Hydric Soil Present? Yes	No 🔽			e Sampled in a Wetlar		No	<u> </u>		
Wetland Hydrology Present? Yes	No		WILLI	iii a wellai	iu: 165				
Remarks:									
Upland sample point.									
VEGETATION – Use scientific names of pla	nts.								
	Absolute	Domi	nant	Indicator	Dominance Test work	sheet:			
Tree Stratum (Plot size: 30 ft r	% Cover				Number of Dominant S				
1					That Are OBL, FACW, (excluding FAC-):	or FAC	0	(A)	
2								(//	
3					Total Number of Domin Species Across All Stra		2	(B)	
4	0			er					
Sapling/Shrub Stratum (Plot size: 15 ft r)		1010	. 001	Ci	Percent of Dominant Sp That Are OBL, FACW,		0.00	(A/B)	
1					Prevalence Index wor	kehoot:			
2					Total % Cover of:		Multiply by	٧.	
3						x			
4. 5.		-			FACW species 0	x	2 = 0		
J		= Total	I Cov	er	FAC species 0				
Herb Stratum (Plot size: 5 ft r)							4 = 280		
1. Elymus trachycaulus	_ 50			FACU	UPL species 0				
2. Elymus repens	15			FACU	Column Totals: 70	(A	.) 280	(B)	
3. Poa pratensis	5	-		FACU	Prevalence Index	= B/A =	4.00		
4					Hydrophytic Vegetation	n Indica	tors:		
5 6					1 - Rapid Test for I	Hydrophyf	tic Vegetatio	n	
7.					2 - Dominance Tes				
8.					3 - Prevalence Inde				
9.					4 - Morphological A data in Remarks	daptation	ns' (Provide separate sh	supporting eet)	
10					Problematic Hydro				
Woody Vine Stratum (Plot size: 30 ft r	70	= Total	I Cov	er	¹ Indicators of hydric soi				
1					be present, unless distu			gy musi	
2.					Hydrophytic				
20.0	0	= Total	I Cov	er	Vegetation Present? Ye	e	No_		
% Bare Ground in Herb Stratum 30.0 Remarks:					rioscit: le		. 110	_	
Sample point is dominated by Elymi	us speci	es.							

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SOIL Sampling Point: DP03U

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the	indicator	or confirn	n the absence	of indicators.)
Depth	Matrix			x Feature			_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 7	10YR 3/2	100					Sandy Clay Loam	Fine roots throughout.
7 - 16	10YR 4/2	93	7.5YR 4/6	7	С	PL / M	Sandy Clay	Small gravels.
-								
-								
	-			-				
					-		-	
			=Reduced Matrix, CS			ed Sand G		cation: PL=Pore Lining, M=Matrix.
-		able to all	LRRs, unless other					for Problematic Hydric Soils ³ :
Histosol			Sandy G	-				Muck (A9) (LRR I, J)
	nipedon (A2)		-	Redox (S5				Prairie Redox (A16) (LRR F, G, H)
Black His	stic (A3) n Sulfide (A4)			Matrix (S	oo) neral (F1)			Surface (S7) (LRR G) Plains Depressions (F16)
	l Layers (A5) (LRR f	=)		Sleyed M	. ,		_	R H outside of MLRA 72 & 73)
	ck (A9) (LRR F, G, I		•	d Matrix (,	ed Vertic (F18)
	Below Dark Surfac			ark Surfa	,			arent Material (TF2)
	ark Surface (A12)	- (ırface (F7)		hallow Dark Surface (TF12)
Sandy M	lucky Mineral (S1)) Depressio				(Explain in Remarks)
2.5 cm N	lucky Peat or Peat (S2) (LRR (G, H) High Pla	ins Depr	essions (F	16)	³ Indicators	of hydrophytic vegetation and
5 cm Mu	cky Peat or Peat (S	3) (LRR F)	(MLI	RA 72 &	73 of LRF	R H)	wetland	d hydrology must be present,
							unless	disturbed or problematic.
Restrictive L	ayer (if present):							
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes No
Remarks:								
Although	concentrations	are pre	sent in the matr	ix, this	sample	point d	oes not sup	pport hydrophytic vegetation
and no ev	idence of wetla	nd hydr	ology was obse	rved.				
HYDROLO	GY							
	drology Indicators:							
-			d; check all that apply	()			Sacanda	ary Indicators (minimum of two required)
	Water (A1)	ile require					<u>-</u>	ace Soil Cracks (B6)
	ter Table (A2)		Salt Crust Aquatic Inv		e (B13)			rsely Vegetated Concave Surface (B8)
Saturatio	,		Aquatic in		. ,			nage Patterns (B10)
	arks (B1)		Dry-Seaso		, ,			dized Rhizospheres on Living Roots (C3)
	at Deposits (B2)		Oxidized R					where tilled)
	oosits (B3)		(where r			ing Roots		yfish Burrows (C8)
	t or Crust (B4)		Presence of	,		1)		uration Visible on Aerial Imagery (C9)
	osits (B5)		Thin Muck			")		morphic Position (D2)
	on Vis ble on Aerial I	magery (R						C-Neutral Test (D5)
	tained Leaves (B9)	magery (D	7) Outer (Exp	iaiii iii ikk	iliains)			st-Heave Hummocks (D7) (LRR F)
Field Observ	, ,							or reasonamiestic (27) (2mm)
Surface Water		- - -	No Depth (inc	ches).				
Water Table			No Depth (inc					
							and Hydrolog	y Present? Yes No
Saturation Pr (includes cap		CS	No V Depth (inc	лісs). <u> </u>		weti	and mydrolog	y i resent: TesNO
		gauge, mo	onitoring well, aerial p	hotos, pr	evious ins	spections),	if available:	
Remarks:								
No avida	ance of wetle	and hw	drology obse	rved				
140 GVIGE	SHOU OF WELL	and my	arology obser	vou.				

Project/Site: Rostad	(City/County:	Meaghe	r County	Sampling Date: 2023-06-28
					Sampling Point: DP03W
Investigator(s): S Weyant, K Kane	;	Section, To	wnship, Raı	nge: S12 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor		Local relief	(concave,	convex, none): Linear	Slope (%): 0
Subregion (LRR): E 46	Lat: 46.	462636		Long: <u>-110.296764</u>	Datum: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats cor	mplex, 2 to	4 percer	nt slopes	NWI classific	ation: Not mapped
Are climatic / hydrologic conditions on the site typical for thi	s time of year	ar? Yes	✓ No	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology s	significantly o	disturbed?	Are "	Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology r	naturally prol	olematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point le	ocations, transects	, important features, etc.
Hydric Soil Present? Yes N	lo lo		e Sampled in a Wetlar		No
PEM, depressional wetland. Sample		cated i	n wet n	neadow.	
VEGETATION – Use scientific names of plan		Dominant	Indicator	Dominance Test work	shoot:
Tree Stratum (Plot size: 30 ft r 1.	% Cover	Species?	Status	Number of Dominant Sp That Are OBL, FACW, of (excluding FAC-):	pecies
2				Total Number of Domin Species Across All Stra	
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total Cov	rer	Percent of Dominant Sp That Are OBL, FACW, o	
2.				Prevalence Index worl	
3				Total % Cover of:	
4					x 1 = 0 x 2 = 150
5				· ·	x 3 = 0
Herb Stratum (Plot size: 5 ft r)	0	= Total Cov	er		x 4 = 0
1. Phalaris arundinacea	65	~	FACW		x 5 = 0
2. Agrostis stolonifera	10		FACW	Column Totals: 75	(A) <u>150</u> (B)
3				Prevalence Index	- R/A - 2.00
4				Hydrophytic Vegetation	
5				✓ 1 - Rapid Test for H	
6				✓ 2 - Dominance Tes	• • •
7				✓ 3 - Prevalence Inde	ex is ≤3.0 ¹
8					Adaptations ¹ (Provide supporting
9 10					s or on a separate sheet)
	7-	= Total Cov	er		ohytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1.				be present, unless distu	I and wetland hydrology must urbed or problematic.
	_	= Total Cov	er	Hydrophytic Vegetation Present? Yes	s No
Phalaris arundinacea is the dominan	t specie	es at thi	is samp	ole point.	

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SOIL Sampling Point: DP03W

Profile Desc	ription: (Describe	to the dep	th needed to docum	nent the	indicator	or confir	rm the absence of indicators.)	
Depth	Matrix			x Feature		2	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 3/2	98	7.5YR 5/8	2	<u> </u>	M	Sandy Clay	
6 - 16	2.5Y 3/2	93	10YR 5/8	7	С	М	Sandy Clay	
-								
	-	- ·	_			-		_
-	-	 				-		—
					_			
-								
¹ Type: C=Co	oncentration D=Den	oletion RM:	=Reduced Matrix, CS	S=Covere	ed or Coat	ed Sand G	Grains. ² Location: PL=Pore Lining, M=Matrix.	
			LRRs, unless other			ou ound c	Indicators for Problematic Hydric Soils ³ :	
Histosol			Sandy 0				1 cm Muck (A9) (LRR I, J)	
	oipedon (A2)		·	Redox (S			Coast Prairie Redox (A16) (LRR F, G, H)	
Black His			Stripped				Dark Surface (S7) (LRR G)	
Hydroge	n Sulfide (A4)			-	ineral (F1)		High Plains Depressions (F16)	
	l Layers (A5) (LRR I		-	-	latrix (F2)		(LRR H outside of MLRA 72 & 73)	
	ck (A9) (LRR F, G ,			d Matrix	. ,		Reduced Vertic (F18)	
	d Below Dark Surfac	œ (A11)	<u>✓</u> Redox [ace (F6) urface (F7	·\	Red Parent Material (TF2)	
	ark Surface (A12) lucky Mineral (S1)			o Dark S Depressio	•)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)	
	lucky Milicial (61) lucky Peat or Peat ((S2) (LRR (essions (I	- 16)	³ Indicators of hydrophytic vegetation and	
	cky Peat or Peat (S				73 of LRI		wetland hydrology must be present,	
	,	, , ,				•	unless disturbed or problematic.	
Restrictive L	_ayer (if present):							
Type:								
Depth (inc	ches):						Hydric Soil Present? Yes No	
Remarks:								
Dromino	nt rodovimo	rnhic c	oncontration	coom	mon	vithin t	the matrix	
Promine	iit redoxiiiio	i pi iic c	oncentration	S COII	iiiioii v	VICIIIII	the matrix.	
HYDROLO								
-	drology Indicators:							
		one require	d; check all that apply	y)			Secondary Indicators (minimum of two requi	red)
Surface	Water (A1)		Salt Crust	(B11)			Surface Soil Cracks (B6)	
	ter Table (A2)		Aquatic Inv		, ,		Sparsely Vegetated Concave Surface (E	38)
Saturatio	` '		Hydrogen				Drainage Patterns (B10)	
	arks (B1)		Dry-Seaso				Oxidized Rhizospheres on Living Roots	(C3)
	nt Deposits (B2)		Oxidized F			ving Roots	· · · · · · · · · · · · · · · · · · ·	
-	oosits (B3)		(where r				Crayfish Burrows (C8)	
_	it or Crust (B4)		Presence			4)	Saturation Visible on Aerial Imagery (C9	1)
	osits (B5)		Thin Muck		. ,		Geomorphic Position (D2)	
	on Vis ble on Aerial	Imagery (B	7) Other (Exp	olain in R	emarks)		FAC-Neutral Test (D5)	
	tained Leaves (B9)						Frost-Heave Hummocks (D7) (LRR F)	
Field Observ								
Surface Water			No Depth (inc					
Water Table			No Depth (inc					
Saturation Pr (includes cap		'es	No Depth (ind	ches):		Wet	etland Hydrology Present? Yes No	—
		n gauge, mo	onitoring well, aerial p	ohotos, p	revious in	spections)	s), if available:	
	,	,	<u> </u>	, 1				
Remarks:								
Evidono	o of wotload	hydral	oay indudes	0000	oornb:	o nosi	tion and a positive feet neutral to	_+
_viuenc	e or welland	riyuroi	ogy includes	yeon	iorbili	c posi	tion and a positive fac-neutral te	:51.

Project/Site: Rostad	c	ity/County:	Meaghe	r County	Sampling Date: 2	2023-06-28
				nge: S12 T8N R11E		
Landform (hillslope, terrace, etc.): Valley Floor	L	ocal relief	(concave, c	convex, none): Convex	Slop	oe (%): 5
Subregion (LRR): E 46	Lat: 46.4	161491		Long: -110.297651	Datur	n: NAD 83
Soil Map Unit Name: 854B - Varney-Coyoteflats cor	mplex, 2 to	4 percen	t slopes	NWI classific	ation: Not mapp	ed
Are climatic / hydrologic conditions on the site typical for thi	s time of year	r? Yes	No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology s	significantly d	isturbed?	Are "	Normal Circumstances" p	resent? Yes	, No
Are Vegetation, Soil, or Hydrology r	naturally prob	lematic?	(If ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	sampling	g point lo	ocations, transects	, important fea	atures, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	lo		e Sampled n a Wetlan		No	
Upland sample point.						
VEGETATION – Use scientific names of plan	nts.					
Tree Stratum (Plot size: _30 ft r)	Absolute			Dominance Test work		
1	% Cover			Number of Dominant Sp That Are OBL, FACW, of		
2.				(excluding FAC-):	0	(A)
3				Total Number of Domin		
4				Species Across All Stra	ta: <u>1</u>	(B)
Sapling/Shrub Stratum (Plot size: 15 ft r	<u>0 </u>	Total Cov	er	Percent of Dominant Sp That Are OBL, FACW, of		(A/B)
1. 2.				Prevalence Index wor	ksheet:	
3.				Total % Cover of:		
4.					x 1 = <u>0</u>	
5				FACW species 0		
Herb Stratum (Plot size: 5 ft r	0 =	Total Cov	er		x 3 = 0 x 4 = 40	
1. Bromus inermis	80	~	UPL	UPL species 80)
2. Poa pratensis	10		FACU	Column Totals: 90	(A) 440	
3. Thinopyrum intermedium	5					
4.				Prevalence Index		
5				Hydrophytic Vegetation 1 - Rapid Test for H		ation
6				2 - Dominance Tes		illori
7				3 - Prevalence Inde		
8				4 - Morphological A		de supporting
9				data in Remarks	s or on a separate	sheet)
10	^-	Total Cov		Problematic Hydro	phytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soi be present, unless distu		
2 5.0		Total Cov	 er	Hydrophytic Vegetation Present? Yes	s No_	
Remarks:				·		
Bromus inermis is the dominant spec	cies at th	nis sam	ipie po	int.		

SOIL Sampling Point: DP04U

Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confir	m the absence	of indicators.)			
Depth	Matrix			ox Feature			_				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks			
0 - 6	7.5YR 4/2	100					Sandy Clay Loam				
6 - 15	2.5Y 5/3	98	2.5Y 6/8	1	С	М	Sandy Loam	Gravelly. Cobble shelf at 12			
-			7.5YR 4/4	1	С	М					
			· · · · · · · · · · · · · · · · · · ·	_	-						
	-		-					·			
<u> </u>											
-											
_											
¹Type: C=C	oncentration, D=Dep	oletion PM	=Peduced Matrix C	S=Covere	ad or Coate	ad Sand O	Graine ² Lo	cation: PL=Pore Lining, M=Matrix.			
	Indicators: (Applic					o Sanu C		for Problematic Hydric Soils ³ :			
Histosol		Jubio to un	Sandy					Muck (A9) (LRR I, J)			
l —	pipedon (A2)			Redox (S				Prairie Redox (A16) (LRR F, G, H)			
	istic (A3)			d Matrix (Surface (S7) (LRR G)			
	en Sulfide (A4)				ineral (F1)			Plains Depressions (F16)			
Stratified	d Layers (A5) (LRR	F)	Loamy	Gleyed M	latrix (F2)		(LF	RR H outside of MLRA 72 & 73)			
1 cm Mu	uck (A9) (LRR F, G,	H)	Deplete	ed Matrix	(F3)			ced Vertic (F18)			
-	d Below Dark Surfac	ce (A11)		Dark Surf				arent Material (TF2)			
_	ark Surface (A12)				urface (F7)	-	Shallow Dark Surface (TF12)			
. —	Mucky Mineral (S1)	(C2) (LDD		Depression	ons (F8) essions (F	16)		(Explain in Remarks) of hydrophytic vegetation and			
	Mucky Peat or Peat (ucky Peat or Peat (S			•	73 of LRF	,		d hydrology must be present,			
5 cm wit	acky rear or rear (o	(LIXIX I)	(1411	-IVA 12 G	75 OI LIKI	,	unless disturbed or problematic.				
Restrictive Layer (if present):											
Type:											
J	Depth (inches): Hydric Soil Present? Yes No										
Remarks:							,				
			_								
No hydr	ic soil indica	tors ob	served.								
HYDROLO	GY										
Wetland Hy	drology Indicators:	:									
Primary India	cators (minimum of o	one require	d; check all that app	ly)			Seconda	ary Indicators (minimum of two required)			
	Water (A1)		Salt Crus					face Soil Cracks (B6)			
	ater Table (A2)		Aquatic Ir		es (B13)		Sparsely Vegetated Concave Surface (B8)				
Saturation			Hydrogen					inage Patterns (B10)			
Water M	` ,		Dry-Seas		, ,)		dized Rhizospheres on Living Roots (C3)			
	nt Deposits (B2)		Oxidized					vhere tilled)			
Drift Dep	. , ,			not tilled		J		yfish Burrows (C8)			
	at or Crust (B4)		Presence	of Reduc	, ed Iron (C₄	4)	·	uration Visible on Aerial Imagery (C9)			
Iron Dep	` '		Thin Muc			,	·	omorphic Position (D2)			
-	ion Vis ble on Aerial	Imagery (B	Other (Ex	plain in R	emarks)		FAC	C-Neutral Test (D5)			
	Stained Leaves (B9)	3 , (, <u> </u>		,			st-Heave Hummocks (D7) (LRR F)			
Field Obser	vations:			abaa\.							
Field Obser Surface Wat		/es	No Depth (ir	iches).	Water Table Present? Yes No Depth (inches):						
Surface Wat	ter Present?		No Depth (ir								
Surface Wat Water Table	ter Present?	/es	No Depth (ir	nches):		_	tland Hvdrolog	y Present? Yes No ✔			
Surface Wat Water Table Saturation P (includes cap	ter Present? \ Present? \ Present? \ Present? \ Present	/es /es	No Pepth (ir	nches): nches):		We		y Present? Yes No			
Surface Wat Water Table Saturation P (includes cap	resent?	/es /es	No Pepth (ir	nches): nches):		We		y Present? Yes No			
Surface Wat Water Table Saturation P (includes cap	ter Present? \ Present? \ Present? \ Present? \ Present	/es /es	No Pepth (ir	nches): nches):		We		y Present? Yes No			
Surface Wat Water Table Saturation P (includes cap	ter Present? \ Present? \ Present? \ Present? \ Present	/es /es	No Pepth (ir	nches): nches):		We		y Present? Yes No			
Surface Wat Water Table Saturation P (includes cap Describe Re	ter Present? \ Present? \ Present? \ Present? \ Presenty \ Present	res res n gauge, m	No Depth (ir No Depth (ir onitoring well, aerial	nches): nches): photos, p		We		y Present? Yes No			
Surface Wat Water Table Saturation P (includes cap Describe Re	ter Present? \ Present? \ Present? \ Present? \ Present	res res n gauge, m	No Depth (ir No Depth (ir onitoring well, aerial	nches): nches): photos, p		We		y Present? Yes No			

Project/Site: Rostad	Citv/C	county: Meaghe	er County	Sampling Date: 2023-06-28
Applicant/Owner: MDT				Sampling Point: DP04W
• •	Section	on, Township, Ra	nge: S12 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor				e Slope (%): 5
Subregion (LRR): E 46				
Soil Map Unit Name: 854B - Varney-Coyoteflats co			-	
Are climatic / hydrologic conditions on the site typical for thi	is time of year? Y	′es V No_	(If no, explain in Ro	emarks.)
Are Vegetation, Soil, or Hydrology	-			resent? Yes No
Are Vegetation, Soil, or Hydrology	_		eeded, explain any answei	
SUMMARY OF FINDINGS – Attach site map			ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes N		l- 41- 0	14	
Hydric Soil Present? Yes	No	Is the Sampled within a Wetlar		No
Wetland Hydrology Present? Yes N	lo	within a wettar	103	
Remarks:				
PEM, depressional wetland. Sample point to precipitation and irrigation events.	ocated south	of berm. Cor	ncave area holds su	rface water during
<u> </u>	-1-			
VEGETATION – Use scientific names of plar		ninant Indicator	Dominance Test work	chooti
Tree Stratum (Plot size: 30 ft r	% Cover Spe		Number of Dominant Sp	
1			That Are OBL, FACW, o	or FAC
2			(excluding FAC-):	<u> </u>
3			Total Number of Domina Species Across All Stra	4
4	0 = Tot	tal Cover		. ,
Sapling/Shrub Stratum (Plot size: 15 ft r)			Percent of Dominant Sp That Are OBL, FACW, o	
1 2			Prevalence Index work	ksheet:
3.			Total % Cover of:	
4				x 1 = 7
5			FACW species 63 FAC species 0	
Herb Stratum (Plot size: 5 ft r	<u>0</u> = Tot	tal Cover	FACU species 0	
1. Phalaris arundinacea	50	✓ FACW	UPL species 0	
2. Juncus balticus	8	FACW	Column Totals: 70	(A) 133 (B)
3. Alopecurus arundinaceus	_ 5	FACW	Prevalence Index	- p/A - 190
4. Eleocharis palustris	_ 5	OBL	Hydrophytic Vegetation	
_{5.} Typha latifolia	_ 2	OBL_	✓ 1 - Rapid Test for H	
6			✓ 2 - Dominance Tes	
7			✓ 3 - Prevalence Inde	ex is ≤3.0 ¹
8 9				adaptations ¹ (Provide supporting
10.				s or on a separate sheet)
	70	tal Cover	Problematic Hydrop	ohytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1.			¹ Indicators of hydric soil be present, unless distu	l and wetland hydrology must irbed or problematic.
2.			Hydrophytic	
	•	tal Cover	Vegetation Present? Yes	s No
% Bare Ground in Herb Stratum 30.0 Remarks:			100	
	t ongoine -	t this same	ala naint	
Phalaris arundinacea is the dominan	it species a	it this samp	oie point.	

US Army Corps of Engineers B-33 Great Plains – Version 2.0

SOIL Sampling Point: DP04W

Profile Desc	ription: (Describe	to the dep	th needed to docum	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redox	k Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 5	2.5Y 4/2	96	2.5Y 6/6	3	С	M	Sandy Clay Loam	
-			7.5YR 5/8	1	С	PL / M	Sandy Clay Loam	C on living roots
5 - 11	2.5Y 4/2	92	2.5Y 6/2	3	D	М	Sandy Loam	
-			7.5YR 3/4	5	С	М	Sandy Loam	
11 - 17	2.5Y 6/2	98	10YR 5/8	2	С	М		
-								
-								
-								
¹Type: C=Ce	oncentration, D=Dep	letion, RM	=Reduced Matrix, CS	=Covere	ed or Coate	d Sand Gr	rains. ² Loc	cation: PL=Pore Lining, M=Matrix.
			LRRs, unless other					for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy G	Sleved M	atrix (S4)		1 cm N	Muck (A9) (LRR I, J)
—	oipedon (A2)		Sandy R	-	. ,			Prairie Redox (A16) (LRR F, G, H)
-	istic (A3)		Stripped					Surface (S7) (LRR G)
Hydroge	en Sulfide (A4)				ineral (F1)			Plains Depressions (F16)
	d Layers (A5) (LRR F	=)			latrix (F2)		_	RR H outside of MLRA 72 & 73)
	ıck (A9) (LRR F, G, I		✓ Depleted				Reduc	red Vertic (F18)
	d Below Dark Surfac		Redox D	ark Surf	ace (F6)		Red Pa	arent Material (TF2)
Thick Da	ark Surface (A12)		Depleted	d Dark S	urface (F7)	1	Very S	Shallow Dark Surface (TF12)
Sandy M	lucky Mineral (S1)		Redox D	epression	ons (F8)		Other	(Explain in Remarks)
2.5 cm N	Mucky Peat or Peat (S2) (LRR (G, H) High Pla	ins Depi	ressions (F	16)	³ Indicators	of hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) (LRR F)	(MLF	RA 72 &	73 of LRR	H)	wetlan	d hydrology must be present,
							unless	disturbed or problematic.
Restrictive I	Layer (if present):							
Type:								,
Depth (in	ches):						Hydric Soil	Present? Yes No
Remarks:								
Promine	nt redoximo	rphic c	oncentrations	s com	mon w	ithin t	he denlet	ed matrix
	in rodoxiiio.	p0 0					no dopio	.od matrix.
HYDROLO	GY							
	drology Indicators:							
_			d; check all that apply	Λ			Seconda	ary Indicators (minimum of two required)
-	Water (A1)	nic require	Salt Crust (-	face Soil Cracks (B6)
					(D40)			
_	ater Table (A2)		Aquatic Inv					rsely Vegetated Concave Surface (B8)
<u>✓</u> Saturation			Hydrogen S					inage Patterns (B10)
	larks (B1)		Dry-Seaso					dized Rhizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized R			ing Roots		here tilled)
Drift Dep	posits (B3)		(where n		•		Cra	yfish Burrows (C8)
Algal Ma	at or Crust (B4)		Presence of	of Reduc	ed Iron (C4	!)	Satı	uration Visible on Aerial Imagery (C9)
Iron Dep	oosits (B5)		Thin Muck	Surface	(C7)		<u>✓</u> Geo	omorphic Position (D2)
Inundati	on Vis ble on Aerial I	magery (B	7) Other (Exp	lain in R	emarks)		FAC	C-Neutral Test (D5)
Water-S	tained Leaves (B9)						Fros	st-Heave Hummocks (D7) (LRR F)
Field Obser	vations:							
Surface Wat	er Present? Y	es	No Depth (inc	ches):				
Water Table			No Pepth (inc					
Saturation P			No Depth (inc				and Hydrolog	y Present? Yes V No No
(includes car	oillary fringe)						, ,	,
Describe Re	corded Data (stream	gauge, mo	onitoring well, aerial p	hotos, p	revious ins	pections),	if available:	
Remarks:								
	-						· ·	geomorphic position, and a
positive fa	ac-neutral test.	Oxidize	d rhizospheres	obser	ved alon	g living	roots (1%).	

Project/Site: Rostad	Ci	ty/County:	Meaghe	r County	Sampling Date:	2023-06-28
				State: Montana		
Investigator(s): S Weyant, K Kane	Se	ection, Tow	vnship, Rar	nge: S13 T8N R11E		
Landform (hillslope, terrace, etc.): Valley Floor	Lo	ocal relief ((concave, c	convex, none): Undulat	ing Slop	oe (%): <u>5</u>
Subregion (LRR): E 46	Lat: 46.4	59991		Long: -110.297778	Datur	_{m:} NAD 83
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabl	bart comple	x, 2 to 8	percent	slopes NWI classific	ation: Not mapp	ed
Are climatic / hydrologic conditions on the site typical for thi	s time of year	? Yes	No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrology s	significantly dis	sturbed?	Are "I	Normal Circumstances" p	resent? Yes	No
Are Vegetation, Soil, or Hydrology r	naturally probl	ematic?	(If ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing s	ampling	g point lo	ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	lo		e Sampled n a Wetlan		No	
Upland sample point.						
VEGETATION – Use scientific names of plan	nts.					
Tree Stratum (Plot size: 30 ft r	Absolute I % Cover			Dominance Test work		
1				Number of Dominant Sp That Are OBL, FACW, or	or FAC	
2				(excluding FAC-):	0	(A)
3				Total Number of Domin		(5)
4				Species Across All Stra	ta: <u>1</u>	(B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	0 =	Total Cove	er	Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
2.				Prevalence Index work	ksheet:	
3.				Total % Cover of:		/ by:
4					x 1 = 0	
5				FACW species 0 FAC species 0	x 2 = 0 x 3 = 0	
Herb Stratum (Plot size: 5 ft r	0 =	Total Cove	er		x 4 = 80	
1. Bromus inermis	80	~	UPL	UPL species 80)
2. Poa pratensis	15		FACU	Column Totals: 100		
3. Elymus repens	5		FACU	Prevalence Index	- p/A - 480	
4				Hydrophytic Vegetation	·	
5				1 - Rapid Test for H		ation
6				2 - Dominance Tes		20011
7				3 - Prevalence Inde		
8				4 - Morphological A		de supporting
9		·			s or on a separate	
10	400	Total Cove		Problematic Hydrop	phytic Vegetation	(Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soil be present, unless distu		
2	0 =	Total Cove	er	Hydrophytic Vegetation Present? Yes	s No	<u> </u>
Remarks:						
Bromus inermis is the dominant spec	cies at th	is sam	ple poi	int.		

SOIL Sampling Point: DP05U

Profile Desc Depth	ription: (Describ Matrix	e to the depth ne	eeded to document the indicator or one of the Redox Features	confirm the ab	sence of indicators.)	
(inches)	Color (moist)	%C	Color (moist) % Type ¹ L	Loc ² Text	ure	Remarks
0 - 11	7.5YR 3/2	100		Sandy	Loam	
11 - 17	2.5Y 5/3	100		Sandy Cla	ıy Loam	
				, <u></u> _	<u> </u>	
-						
						_
¹Type: C=Co	oncentration. D=De	epletion. RM=Red	uced Matrix, CS=Covered or Coated S	Sand Grains	² Location: PL=Pore	e Lining, M=Matrix.
			s, unless otherwise noted.)		cators for Problemat	
Histosol			Sandy Gleyed Matrix (S4)		1 cm Muck (A9) (LRR	I, J)
·	oipedon (A2)		Sandy Redox (S5)		Coast Prairie Redox (
Black Hi	stic (A3)		Stripped Matrix (S6)		Dark Surface (S7) (LI	
	n Sulfide (A4)		Loamy Mucky Mineral (F1)		High Plains Depression	
	d Layers (A5) (LRR		Loamy Gleyed Matrix (F2)		(LRR H outside of	MLRA 72 & 73)
	ick (A9) (LRR F, G		Depleted Matrix (F3)		Reduced Vertic (F18) Red Parent Material (TEO)
	d Below Dark Surfa ark Surface (A12)	ice (ATT)	Redox Dark Surface (F6)Depleted Dark Surface (F7)		Very Shallow Dark Su	,
·	fucky Mineral (S1)		Redox Depressions (F8)		Other (Explain in Rem	
-	Mucky Peat or Peat	(S2) (LRR G, H)			cators of hydrophytic	,
5 cm Mu	icky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)) \	wetland hydrology mu	st be present,
					unless disturbed or pr	oblematic.
Restrictive I	Layer (if present):					
· · ·						
Depth (inc	ches):			Hydri	ic Soil Present? Ye	es No
Remarks:						
No hydri	ic soil indica	ators obser	ved.			
HYDROLO	GY					
Wetland Hy	drology Indicators	S:				
Primary India	cators (minimum of	one required; che	eck all that apply)	<u>Se</u>	econdary Indicators (n	ninimum of two required)
Surface	Water (A1)		Salt Crust (B11)		_ Surface Soil Cracks	s (B6)
High Wa	iter Table (A2)		Aquatic Invertebrates (B13)		_ Sparsely Vegetated	Concave Surface (B8)
Saturation	on (A3)		Hydrogen Sulfide Odor (C1)	_	_ Drainage Patterns ((B10)
Water M	larks (B1)		Dry-Season Water Table (C2)	_	 Oxidized Rhizosphe 	eres on Living Roots (C3)
Sedimer	nt Deposits (B2)		Oxidized Rhizospheres on Living	Roots (C3)	(where tilled)	
	oosits (B3)		(where not tilled)	_	_ Crayfish Burrows (0	
	at or Crust (B4)		Presence of Reduced Iron (C4)	_		n Aerial Imagery (C9)
	oosits (B5)		Thin Muck Surface (C7)		_ Geomorphic Position	
	on Vis ble on Aeria		Other (Explain in Remarks)	_	_ FAC-Neutral Test (·
	tained Leaves (B9)				_ Frost-Heave Humm	OCKS (D7) (LRR F)
Field Observ		Voc.	Ponth (inches):			
Surface Water			Depth (inches):			
Water Table			Depth (inches):	Mada: III	lualami Barri (O. 10	
Saturation Projection (includes cap		Yes No _	Depth (inches):	Wetland Hyd	drology Present? Y	es No
		m gauge, monitor	ing well, aerial photos, previous inspec	ctions), if availal	ble:	
Remarks:						
No evide	ence of wet	land hydrol	logy observed.			
			- J,			

Project/Site: Rostad		City/Co	_{unty:} Meagh	er County	Sampling Date: 2023-06-28
Applicant/Owner: MDT				State: Montana	Sampling Point: DP05W
Investigator(s): S Weyant, K Kane		Section	n, Township, R	lange: S13 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): <u>5</u>
Subregion (LRR): E 46	Lat: 46.	4600	72	Long: -110.297588	Datum: NAD 83
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cab					
Are climatic / hydrologic conditions on the site typical for th	is time of ve	ar? Ye	s V No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology	-				
Are Vegetation, Soil, or Hydrology				needed, explain any answer	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes 1	No			<u> </u>	<u> </u>
	No		Is the Sample		
Wetland Hydrology Present?	No	,	within a Wetla	and? Yes	No
Remarks:		<u> </u>			
PEM, depressional/slope wetland.					
VEGETATION – Use scientific names of plan					
Tree Stratum (Plot size: _30 ft r)	Absolute % Cover		nant Indicator <u>ies? Status </u>		
1			-	 Number of Dominant Sp That Are OBL, FACW, o 	or FAC
2.				(excluding FAC-):	<u>3</u> (A)
3.				Total Number of Domina	ant
4				Species Across All Strat	ta: <u>3</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Total	l Cover	Percent of Dominant Sp That Are OBL, FACW, o	
1				Prevalence Index work	sheet:
2.				_	Multiply by:
3				OBL species 25	x 1 = 25
4			· · · · · · · · · · · · · · · · · · ·		x 2 = 120
5	0	= Total	l Cover	FAC species 0	x 3 = 0
Herb Stratum (Plot size: 5 ft r		- Total	i Oovei	FACU species 0	x 4 = 0
1. Phalaris arundinacea	30		FACW	UPL species 0	x 5 = 0
2. Carex nebrascensis	25			Column Totals: 85	(A) <u>145</u> (B)
3. Juncus balticus				Prevalence Index	= B/A = 1.71
4. Alopecurus arundinaceus	10		FACW	Hydrophytic Vegetatio	<u></u>
5				✓ 1 - Rapid Test for H	
6				2 - Dominance Test	
7				3 - Prevalence Inde	x is ≤3.0 ¹
8					daptations ¹ (Provide supporting
9		-			or on a separate sheet)
10	0.5	= Total	I Cover	- Problematic Hydrop	ohytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must rbed or problematic.
2.				Hydrophytic	
% Bare Ground in Herb Stratum 15.0	0	= Total	l Cover	Vegetation Present? Yes	s No
Remarks:					
Evidence of hydrophytic vegetation	include	sar	oositive r	anid test, a nositi	ve dominance test

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test and a prevalence index greater than or equal to 3.0.

SOIL Sampling Point: DP05W

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		2				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks		
0 - 4	10YR 4/2	2					Sandy Clay Loam	Pockets of coated sand grains. 10YR 6/6		
4 - 17	10YR 4/2	85	10YR 4/6	15	С	М	Sandy Clay Loam			
-										
	-									
				-	-					
							· 			
-										
-										
¹Type: C=Co	ncentration D=Der	letion PM		S=Covere	d or Coate	ad Sand G	raine ² Loc	eation: PL=Pore Lining, M=Matrix.		
			LRRs, unless other			su Sanu C		for Problematic Hydric Soils ³ :		
Histosol			Sandy (fuck (A9) (LRR I, J)		
	oipedon (A2)			Redox (S				Prairie Redox (A16) (LRR F, G, H)		
Black His			-	Matrix (urface (S7) (LRR G)		
	n Sulfide (A4)			,	neral (F1)			lains Depressions (F16)		
	Layers (A5) (LRR I	F)		-	atrix (F2)			R H outside of MLRA 72 & 73)		
1 cm Mu	ck (A9) (LRR F, G,	H)	Deplete	d Matrix ((F3)			ed Vertic (F18)		
-	d Below Dark Surfac	e (A11)		Dark Surf	` ,			arent Material (TF2)		
	ark Surface (A12)				urface (F7)		hallow Dark Surface (TF12)		
-	lucky Mineral (S1)	(CO) /I DD /		Depressio		-16\		Explain in Remarks)		
	Mucky Peat or Peat (cky Peat or Peat (S				essions (F 73 of LRF		³ Indicators of hydrophytic vegetation and wetland hydrology must be present,			
5 cm wa	icky i cat of i cat (o	5) (L IXIX I)	(INL	11A 12 G	75 OI LIKI	(11)		disturbed or problematic.		
Restrictive L	_ayer (if present):						1			
Type:	, , ,									
	ches):						Hydric Soil	Present? Yes V No No		
Remarks:							,			
Promine	nt redoximo	rphic c	oncentration	s com	mon v	vithin t	the deplet	ed matrix.		
HYDROLO	GY									
Wetland Hyd	drology Indicators:									
-			d; check all that apply	v)			Seconda	ry Indicators (minimum of two required)		
-	Water (A1)		Salt Crust				Surface Soil Cracks (B6)			
	iter Table (A2)		Aquatic Inv		es (B13)			rsely Vegetated Concave Surface (B8)		
Saturation	, ,		Hydrogen		, ,			nage Patterns (B10)		
	arks (B1)		Dry-Seaso)		lized Rhizospheres on Living Roots (C3)		
	nt Deposits (B2)		Oxidized F					here tilled)		
	oosits (B3)			not tilled		J		/fish Burrows (C8)		
-	it or Crust (B4)		Presence			4)	Satu	ration Visible on Aerial Imagery (C9)		
_	osits (B5)		Thin Muck			•	✓ Geo	morphic Position (D2)		
Inundation	on Vis ble on Aerial	Imagery (B	7) Other (Exp	olain in Re	emarks)		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 <u> </u>	ches): _						
Water Table			No Depth (inc							
Saturation Pr			No Pepth (inc				land Hydrolog	y Present? Yes No		
(includes cap	oillary fringe)									
Describe Red	corded Data (stream	gauge, mo	onitoring well, aerial p	photos, p	revious ins	spections)	, if available:			
Remarks:										
Fyidence	e of wetland	hydrol	oav includes	deor	ornhi	nneit	ion and a	positive fac-neutral test.		
LVIGETIC	C OI WELIAIIU	riyardı	ogy molades	96011	ioi pi iii	o posit	.iori ariu a	positive fac fleditial test.		

Project/Site: Rostad	c	ity/Count	_{:y:} Meaghe	r County	Sampling Date: 2023-06-28
Applicant/Owner: MDT		_		State: Montana	Sampling Point: DP06U
Investigator(s): S Weyant, K Kane	s	ection, T	ownship, Rai	nge: S13 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					Slope (%): 10
Subregion (LRR): E 46	Lat: 46.4	58732		Long: -110.296401	Datum: NAD 83
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb	art comple	ex, 2 to	8 percent	slopes NWI classific	ation: Not mapped
Are climatic / hydrologic conditions on the site typical for this	time of year	? Yes _	✓ No_	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrologysi	gnificantly d	isturbed?	Are "	Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrologyn				eded, explain any answe	
SUMMARY OF FINDINGS - Attach site map	showing s	samplii	ng point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks:		wit	he Sampled hin a Wetlar	nd? Yes	No
Upland sample point down gradient of cana wetland sample point.	l. Local sh	nelf is a	approxima	ately 3' higher in ele	evation than the paired
VEGETATION – Use scientific names of plant	ts.				
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1 2	% Cover	Species?	nt Indicator ? Status	Dominance Test work Number of Dominant Sp That Are OBL, FACW, of (excluding FAC-):	pecies
3. 4.	·			Total Number of Domin Species Across All Stra	4
Sapling/Shrub Stratum (Plot size: 15 ft r) 1	0 =	Total Co	over	Percent of Dominant Sp That Are OBL, FACW, o	
2.				Prevalence Index work	
3					Multiply by:
4	· -				x 1 = 0 x 2 = 0
5					x 3 = 0
Herb Stratum (Plot size: 5 ft r)	0 =	Total Co	over	FACU species 20	
1. Bromus inermis	70	v	UPL	UPL species 70	x 5 = <u>350</u>
2. Poa pratensis	<u>15</u>		FACU	Column Totals: 90	(A) <u>430</u> (B)
3. Phleum pratense	5 -		FACU	Prevalence Index	= B/A = 4.78
4				Hydrophytic Vegetation	
5				1 - Rapid Test for H	
6				2 - Dominance Tes	t is >50%
7 8				3 - Prevalence Inde	
9.				4 - Morphological A	Adaptations ¹ (Provide supporting s or on a separate sheet)
10.					phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1	90 =	: Total Co			I and wetland hydrology must
2.				Hydrophytic	
% Bare Ground in Herb Stratum 10.0	^	Total Co	over	Vegetation	s No
Remarks:				<u> </u>	
Bromus inermis is the dominant spec	ies at th	nis sa	mple po	int.	

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SOIL Sampling Point: DP06U

Profile Desc	cription: (Describe	to the dep	th 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 ¹	_Loc ²	Texture	Remarks		
0 - 6	10YR 4/3	100		_		-	Sandy Loam			
6 - 16	10YR 4/3		2.5Y 4/6	2	CS	М	Sandy Loam	Sand content increases with de	pth.	
									<u> </u>	
							-			
							_			
-										
				_	-					
					-			-		
	oncentration, D=Dep					ed Sand G		cation: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless othe	rwise not	ted.)		Indicators	for Problematic Hydric Soils ³ :		
l —	Histosol (A1) Sandy Gleyed Matrix (S4) 1 cm Muck (A9) (LRR I, J)									
	pipedon (A2)			Redox (S	,			Prairie Redox (A16) (LRR F, G, H)		
	istic (A3)			d Matrix (Surface (S7) (LRR G)		
	en Sulfide (A4)	- \	·	-	neral (F1)		_	Plains Depressions (F16)		
	d Layers (A5) (LRR	•		Gleyed M			•	RR H outside of MLRA 72 & 73)		
	uck (A9) (LRR F, G, d Below Dark Surfac			ed Matrix (Dark Surf	,			ced Vertic (F18) arent Material (TF2)		
l — ·	ark Surface (A12)	C (A11)			urface (F7)		Shallow Dark Surface (TF12)		
l —	Mucky Mineral (S1)			Depression		,		(Explain in Remarks)		
-	Mucky Peat or Peat	(S2) (LRR (essions (F	16)		of hydrophytic vegetation and		
	ucky Peat or Peat (S			RA 72 &	73 of LRF	R H)		d hydrology must be present,		
							unless	disturbed or problematic.		
Restrictive	Layer (if present):									
Type:										
Depth (in	Depth (inches): No									
Remarks:										
No nyar	ic soil indica	tors ob	served.							
HYDROLO	GY									
Wetland Hy	drology Indicators	:								
Primary Indi	cators (minimum of	one require	d; check all that app	ly)			Seconda	ary Indicators (minimum of two requi	ired)	
	Water (A1)		Salt Crust	•				face Soil Cracks (B6)		
	ater Table (A2)		Aquatic Ir		es (B13)			arsely Vegetated Concave Surface (F	B8)	
Saturati			Hydrogen					inage Patterns (B10)	,	
Water M			Dry-Seas)		dized Rhizospheres on Living Roots	(C3)	
	nt Deposits (B2)		Oxidized					vhere tilled)	()	
Drift De	. , ,			not tilled			. ,	yfish Burrows (C8)		
	at or Crust (B4)		Presence		'	4)		uration Visible on Aerial Imagery (CS	9)	
Iron Dep	, ,		Thin Mucl			• ,	·	omorphic Position (D2)	-,	
	on Vis ble on Aerial	Imagery (B			. ,			C-Neutral Test (D5)		
	stained Leaves (B9)	inagory (D	01101 (22	piaiii iii i k	omano,			st-Heave Hummocks (D7) (LRR F)		
Field Obser								(2.) (<u></u>		
Surface Wat		/oc	No <u> </u>	ichae).						
			No <u> </u>							
Water Table							tland Hedere	W Dreamt2 Van Na 4	/	
Saturation P	resent? \ pillary fringe)	res	No Depth (ir	icnes):		wet	uana Hydrolog	y Present? Yes No		
	corded Data (stream	n gauge, mo	onitoring well, aerial	photos, p	revious ins	spections)), if available:			
	•		-	·		Ź				
Remarks:										
				_						
No evid	ence of wetla	and hyd	drology obse	rved.						

Project/Site: Rostad	(City/Count	_{tv:} Meaghe	r County	Sampling Date: 2023-06-28
					Sampling Point: DP06W-a
				nge: S13 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					e 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 Hydrologys					
Are Vegetation, Soil, or Hydrology n					
SUMMARY OF FINDINGS – Attach site map	snowing	sampiii	ng point i	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No.		ls t	he Sampled	Area	
Hydric Soil Present? Yes No	0		hin a Wetlan		No
Wetland Hydrology Present? Yes No	0				_
Remarks:	_		_		
PEM, depressional/slope wetland. Sa	ample p	oint lo	ocated a	t toe slope of hi	llside.
VEGETATION – Use scientific names of plan	ts.				
7. 0. 1. (D.) 30 ftr			nt Indicator	Dominance Test work	sheet:
	% Cover			Number of Dominant S	
1				That Are OBL, FACW, (excluding FAC-):	2 (A)
2					ont .
4.				Total Number of Domin Species Across All Stra	_
	0	= Total Co	over	Percent of Dominant Sp	nacias
Sapling/Shrub Stratum (Plot size: 15 ft r	_			That Are OBL, FACW,	or FAC: 100.00 (A/B)
1. Salix exigua			FACW	Prevalence Index wor	kshoot:
2					Multiply by:
3					x 1 = 0
4		-			x 2 = 184
5	_	= Total Co	nver	FAC species 0	x 3 = 0
Herb Stratum (Plot size: 5 ft r)		- Total Ct	Jvei	FACU species 12	x 4 = <u>48</u>
1. Juncus balticus	75		FACW	UPL species 0	
2. Phalaris arundinacea	7		FACW	Column Totals: 104	(A) <u>232</u> (B)
3. Taraxacum officinale	7		FACU	Prevalence Index	= B/A = 2.23
4. Trifolium hybridum 5. Alopecurus arundinaceus	3	-	FACU FACW	Hydrophytic Vegetation	
6. Juncus ensifolius	2		FACW	✓ 1 - Rapid Test for H	
7 Melilotus officinalis	1	•	FACU	✓ 2 - Dominance Tes	t is >50%
8	· 	-		✓ 3 - Prevalence Index	ex is ≤3.0 ¹
9					Adaptations ¹ (Provide supporting
10.					s or on a separate sheet) phytic Vegetation ¹ (Explain)
	~~	= Total Co	over		
Woody Vine Stratum (Plot size: 30 ft r)				¹ Indicators of hydric soi be present, unless distu	l and wetland hydrology must
1					
2	•			Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 1	<u> </u>	= Total Co		Present? Yes	s No
Remarks:				ı	
Juncus balticus is the dominant spec	cies at t	his sa	mple no	int.	
barrous barrous is the dominant spec	oico at t	30	mpic po		

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SOIL Sampling Point: DP06W-a

Profile Desc	ription: (Describe	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 ¹	Loc ²	Texture	Remarks		
0 - 10	10YR 4/2	95	2.5Y 5/6	2	CS	М	Sandy Clay Loam	Pockets of sand in matrix		
			2.5Y 6/2	3	D	М				
10 - 18	2.5Y 4/3	95	2.5Y 6/8	5	CS	М	Sandy Loam			
-										
					_					
			-	_	_					
						-	<u> </u>			
				-						
1T C-C-			L-Dadwaad Matrix Ct					estions DI - Done Lining M-Metric		
			I=Reduced Matrix, CS I LRRs, unless othe			ed Sand C		ation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :		
Histosol		oublo to ul	Sandy					fuck (A9) (LRR I, J)		
	oipedon (A2)		Sandy I	-	. ,			Prairie Redox (A16) (LRR F, G, H)		
Black His				d Matrix (urface (S7) (LRR G)		
	n Sulfide (A4)			,	ineral (F1)			lains Depressions (F16)		
	Layers (A5) (LRR	F)		-	/latrix (F2)			R H outside of MLRA 72 & 73)		
	ck (A9) (LRR F, G,		<u>✓</u> Deplete	-			•	ed Vertic (F18)		
	Below Dark Surfa		Redox	Dark Surl	face (F6)		Red Pa	arent Material (TF2)		
Thick Da	rk Surface (A12)		Deplete	d Dark S	urface (F7)	Very S	hallow Dark Surface (TF12)		
	lucky Mineral (S1)			Depressi	` ,			Explain in Remarks)		
	lucky Peat or Peat	. , .			ressions (F			of hydrophytic vegetation and		
5 cm Mu	cky Peat or Peat (S	53) (LRR F) (ML	.RA 72 &	73 of LRF	R H)		hydrology must be present,		
Restrictive I	_ayer (if present):						uniess	disturbed or problematic.		
Type:	ayer (ii present).									
,							Hydric Soil	Present? Yes ✓ No		
Remarks:	· · · · · · · · · · · · · · · · · · ·									
Promine	nt redoximo	orphic c	oncentration	s com	ımon v	vithin	the deplet	ed matrix.		
HYDROLO										
_	drology Indicators									
		one require	ed; check all that appl					ry Indicators (minimum of two required)		
	Water (A1)		Salt Crust					ace Soil Cracks (B6)		
_	ter Table (A2)		Aquatic In					rsely Vegetated Concave Surface (B8)		
Saturation			Hydrogen				·	nage Patterns (B10)		
	arks (B1)		Dry-Seaso					lized Rhizospheres on Living Roots (C3)		
	t Deposits (B2)		Oxidized F			ing Roots		here tilled)		
-	oosits (B3)			not tilled				fish Burrows (C8)		
	t or Crust (B4)		Presence			4)		ration Visible on Aerial Imagery (C9)		
-	osits (B5)		Thin Muck					morphic Position (D2)		
·	on Vis ble on Aerial		37) Other (Ex	plain in R	lemarks)			-Neutral Test (D5)		
	tained Leaves (B9)					-	Fros	t-Heave Hummocks (D7) (LRR F)		
Field Observ										
Surface Water			No Depth (in							
Water Table			No Depth (in							
Saturation Pr		Yes	No Pepth (in	ches):		Wet	tland Hydrolog	y Present? Yes No		
(includes cap Describe Red		m gauge, m	onitoring well, aerial	photos, p	revious ins	spections)), if available:			
	•	- - ·		• •		,				
Remarks:										
Fyidence	e of wetland	hydro	loav includes	: deon	nornhi	nneit	tion and a	positive fac-neutral test.		
LVIGETIC	C OI WELIAIIC	illyulU	logy includes	geon	noi pini	ρυσι	aon ana a	positive lac lieutial test.		

Project/Site: Rostad	(City/County:	Meaghe	r County	Sampling Date: 2023-06-28			
MDT					Sampling Point: DP06W-b			
Investigator(s): S Weyant, K Kane	;	Section, To	wnship, Rar	nge: S13 T8N R11E				
Landform (hillslope, terrace, etc.): Valley Floor		Local relief	(concave, o	convex, none): Concave	Slope (%): <u>5</u>			
Subregion (LRR): E 46	_ Lat: 46.	458985		Long: -110.296196	Datum: NAD 83			
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb	art comp	lex, 2 to 8	percent	slopes NWI classific	ation: Not mapped			
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	✓ No	(If no, explain in R	emarks.)			
Are Vegetation, Soil, or Hydrologys	ignificantly o	disturbed?	Are "	Normal Circumstances" p	resent? Yes No			
Are Vegetation, Soil, or Hydrologyn	aturally prol	olematic?	(If ne	eded, explain any answer	rs in Remarks.)			
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point lo	ocations, transects	, important features, etc.			
Hydric Soil Present? Yes No	0 0 0		e Sampled in a Wetlan		No			
PSS, depressional/slope wetland. Sample point located preservation wetland.								
VEGETATION – Use scientific names of plan		Danataant	La dia atau	I B	-1			
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1 2	% Cover	Species?	Status	Dominance Test work: Number of Dominant Sp That Are OBL, FACW, of (excluding FAC-):	pecies			
3				Total Number of Domini Species Across All Stra	•			
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Total Cov	er	Percent of Dominant Sp				
1. Salix exigua	35	~	FACW	That Are OBL, FACW, o	or FAC: 100.00 (A/B)			
2.				Prevalence Index work				
3				Total % Cover of:	Multiply by: x 1 = <u>10</u>			
4				OBL species 10 FACW species 113				
5				· ·	x 3 = 0			
Herb Stratum (Plot size: 5 ft r)	35	= Total Cov	er	FACU species 2				
1. Juncus balticus	70	~	FACW	•	x 5 = 0			
2. Carex pellita	10		OBL	Column Totals: 125	(A) 244 (B)			
3. Carex praegracilis	5		FACW		n/4 1 95			
4. Mentha arvensis	3		FACW	Prevalence Index	·			
5. Phleum pratense	2		FACU	Hydrophytic Vegetation ✓ 1 - Rapid Test for H				
6				✓ 2 - Dominance Tes				
7				✓ 3 - Prevalence Inde				
8					Adaptations ¹ (Provide supporting			
9				data in Remarks	s or on a separate sheet)			
10.	~~	= Total Cov	/or	Problematic Hydrop	ohytic Vegetation ¹ (Explain)			
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soil be present, unless distu	l and wetland hydrology must urbed or problematic.			
Bare Ground in Herb Stratum	0	= Total Cov	/er	Hydrophytic Vegetation Present? Yes	s No			
Remarks:								
Juncus balticus is the dominant spec	cies in t	he herk	aceous	s strata.				

SOIL Sampling Point: DP06W-b

Profile Desc	cription: (Describ	e to the de	oth needed to docu	ment the	indicator	or confi	irm the absence of ind	icators.)
Depth	Matrix			ox Feature			_	_
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc²	Texture	Remarks
0 - 7	10YR 4/2	94	2.5Y 6/6	_ 4	<u>CS</u>	М	Sandy Clay Loam	
			7.5YR 4/6	2	С	М		
7 - 17	2.5Y 5/3	90	2.5Y 5/6	10	CS	М	Loamy Sand	
-								
-						·		
-								
		_			_			
			_		_			
1T C-C			L-Dadward Matrix C	C-C			Consists 21 anations	DI -Dava Lining M-Matrix
		•	I=Reduced Matrix, C I LRRs, unless othe			ed Sand		PL=Pore Lining, M=Matrix. oblematic Hydric Soils ³ :
Histosol		ioubio to ui	Sandy				1 cm Muck (A	•
_	pipedon (A2)			Redox (S				Redox (A16) (LRR F, G, H)
l — ·	istic (A3)		-	d Matrix ((S7) (LRR G)
Hydroge	en Sulfide (A4)		Loamy	Mucky M	ineral (F1)			Depressions (F16)
	d Layers (A5) (LRF	,	-	-	1atrix (F2)		· ·	utside of MLRA 72 & 73)
	uck (A9) (LRR F, G			ed Matrix	. ,		Reduced Ver	
	d Below Dark Surfa	ace (A11)	_	Dark Surf	` ,		Red Parent N	
·	ark Surface (A12) ⁄lucky Mineral (S1)			Depressi	urface (F7)		Dark Surface (TF12) n in Remarks)
-	Mucky Peat or Pea			•	ressions (F	16)		rophytic vegetation and
	ucky Peat or Peat (. , .			73 of LRF			plogy must be present,
	`	, ,	,			,		ped or problematic.
Restrictive I	Layer (if present):	:						
Type:								
Depth (in	ches):						Hydric Soil Prese	nt? Yes V No No
Remarks:							<u>.</u>	
Promine	nt redoxim	orphic c	oncentration	s com	nmon v	vithin	the matrix.	
HYDROLO	GY							
	drology Indicator	٠.						
_			ed; check all that app	lv)			Secondary Indi	cators (minimum of two required)
-	Water (A1)	ono roquire	Salt Crust					pil Cracks (B6)
	ater Table (A2)		Aquatic In		es (B13)			egetated Concave Surface (B8)
Saturation			Hydrogen				Drainage F	=
	larks (B1)		Dry-Seas)		thizospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized					
	posits (B3)			not tilled		J		urrows (C8)
	at or Crust (B4)		Presence			4)		Visible on Aerial Imagery (C9)
Iron Dep			Thin Mucl			,		ic Position (D2)
-	on Vis ble on Aeria	ıl Imagery (E					FAC-Neutr	
	tained Leaves (B9		•		,			ve Hummocks (D7) (LRR F)
Field Obser	vations:							<u> </u>
Surface Wat	er Present?	Yes	No Depth (in	nches):				
Water Table			No Pepth (in					
Saturation P		Yes	No Depth (in	nches):		We	etland Hydrology Pres	ent? Yes V No No
(includes car							a) if available:	
Describe Re	corded Data (Sifea	ını yauye, m	onitoring well, aerial	ρποιος, β	nevious ins	pections	o), ii avallable.	
Remarks:								
				• - •		_		
Evidence	e of wetland	hydrolog	gy includes a p	ositiv	e FAC-r	neutra	al test and geom	orphic position.

Project/Site: Rostad	C	City/County	,: Meaghe	r County	Sampling Date: 2023-06-27
					Sampling Point: DP07U
				nge: S13 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor				-	Slone (%)· 5
Subregion (LRR): E 46			,	,	
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabl					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologys					
Are Vegetation, Soil, or Hydrology r				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map	showing	samplir	ig point i	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	lo		ne Sampled nin a Wetlar		No
Upland sample point.					
VEGETATION – Use scientific names of plan	ts.				
Tree Stratum (Plot size: 30 ft r	Absolute			Dominance Test work	sheet:
1	% Cover			Number of Dominant S That Are OBL, FACW,	
2.				(excluding FAC-):	<u>0</u> (A)
3.				Total Number of Domin	ant
4				Species Across All Stra	ta: <u>2</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r	0	= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW,	
1					
2				Prevalence Index wor	
3				Total % Cover of: OBL species 0	
4					x 2 = 0
5					x 3 = 0
Herb Stratum (Plot size: 5 ft r)	0	= Total Co	ver		x 4 = 180
1. Bromus inermis	55	~	UPL	UPL species 55	
2. Poa pratensis	20	~	FACU	Column Totals: 100	
3. Trifolium hybridum	10		FACU		455
4. Phleum pratense	8		FACU	Prevalence Index	
5. Cirsium arvense	3		FACU	Hydrophytic Vegetatio	
6. Melilotus officinalis	2 2		FACU	1 - Rapid Test for F 2 - Dominance Tes	
7. Taraxacum officinale			FACU	3 - Prevalence Inde	
8				l —	Adaptations ¹ (Provide supporting
9				data in Remarks	s or on a separate sheet)
10	100	T-4-1 O-		Problematic Hydro	phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1.		= Total Co		¹ Indicators of hydric soi be present, unless distu	l and wetland hydrology must urbed or problematic.
20 % Bare Ground in Herh Stratum 0	0	= Total Co	ver	Hydrophytic Vegetation Present? Ye	s No
Remarks:				<u> </u>	
Bromus inermis and Poa pratensis a	re the d	ominaı	nt speci	es at this samp	e point.

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SOIL Sampling Point: DP07U

Profile Desc	ription: (Describe	to the dep	th needed to docum	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 6	10YR 3/2	100					Sandy Clay Loam	
6 - 16	2.5Y 4/2	98	10YR 6/6	2	CS	М	Sandy Clay Loam	Sand increases with depth
		· ——					-	
		· ——			-	. ——		
	-							
-								
1T C-C-		letien DM	-Dadwaad Matrix CC	<u> </u>	Cook		21 2	anting DI - Days Lining M-Matrix
•			=Reduced Matrix, CS LRRs, unless other			ed Sand G		cation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
-		able to all						•
Histosol	oipedon (A2)		Sandy G	Redox (S	. ,			Nuck (A9) (LRR I, J) Prairie Redox (A16) (LRR F, G, H)
Black His				Matrix (Surface (S7) (LRR G)
	n Sulfide (A4)				neral (F1)			Plains Depressions (F16)
	Layers (A5) (LRR I	=)		-	atrix (F2)		_	R H outside of MLRA 72 & 73)
1 cm Mu	ck (A9) (LRR F, G, I	H)		d Matrix (Reduc	ed Vertic (F18)
Depleted	d Below Dark Surfac	e (A11)	Redox D	Dark Surfa	ace (F6)		Red P	arent Material (TF2)
	ark Surface (A12)				urface (F7)		shallow Dark Surface (TF12)
-	lucky Mineral (S1)			Depressio				(Explain in Remarks)
	Mucky Peat or Peat (· · · · · · · · · · · · · · · · · · ·		essions (F			of hydrophytic vegetation and
5 cm Mu	cky Peat or Peat (S	3) (LRR F)	(ML	RA /2 &	73 of LRF	(H)		d hydrology must be present,
Postrictive I	_ayer (if present):						uniess	disturbed or problematic.
Type:	ahaa):						Usalvia Cail	Bracout? Voc. No. V
Depth (inc	ines).						Hydric Soil	Present? Yes No
Remarks:								
Although (concentrations	were of	oserved, this so	il profil	e does	not mee	et the requi	rements for a hydric soil, hosts
an upland	vegetation cor	nmunity	, and is not sup	ported	by wet	land hy	drology.	
HYDROLO	GY							
-	drology Indicators:		-lllII 4l4l				0 1	and the disease of the same of the same and the same and
		ne require	d; check all that apply				·	ary Indicators (minimum of two required)
	Water (A1)		Salt Crust					face Soil Cracks (B6)
	ter Table (A2)		Aquatic Inv		` '			rsely Vegetated Concave Surface (B8)
Saturatio	` '		Hydrogen					nage Patterns (B10)
	arks (B1)		Dry-Seaso					dized Rhizospheres on Living Roots (C3)
· 	nt Deposits (B2)		Oxidized R			ing Roots		vhere tilled)
	posits (B3)		,	not tilled)				yfish Burrows (C8)
<u> </u>	it or Crust (B4)		Presence		•	4)	·	uration Visible on Aerial Imagery (C9)
	osits (B5)		Thin Muck					omorphic Position (D2)
	on Vis ble on Aerial I	magery (B	7) Other (Exp	olain in Re	emarks)			C-Neutral Test (D5)
<u> </u>	tained Leaves (B9)						Fros	st-Heave Hummocks (D7) (LRR F)
Field Observ								
Surface Water			No Depth (inc					
Water Table			No Pepth (inc					
Saturation Pr		es	No Depth (inc	ches):		Wet	land Hydrolog	y Present? Yes No
(includes cap Describe Red		gauge mo	onitoring well, aerial p	ohotos ni	revious in	spections)	if available	
20001001100	Data (000diii	J. J. J. J. 1110		, pi	3 5 00 ml		,	
Remarks:								
No evide	ence of wetla	and hyd	drology obse	rved.				
		-						

Project/Site: Rostad	(Citv/Co	ountv:	Meaghe	r County	Sampling	Date: 2	2023-0)6-27
Applicant/Owner: MDT		-	-		State: Montana				
••					nge: S13 T8N R11E	- Camping			
Landform (hillslope, terrace, etc.): Valley Floor						na	Slor	ne (%).	5
Subregion (LRR): E 46				•					
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb									
•							Парр	cu.	
Are climatic / hydrologic conditions on the site typical for this	-								
Are Vegetation, Soil, or Hydrologys								No	
Are Vegetation, Soil, or Hydrologyn	aturally pro	blema	tic?	(If ne	eded, explain any answer	s in Rema	ırks.)		
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	g point le	ocations, transects	, import	ant fea	atures	, etc.
Hydrophytic Vegetation Present? Yes N									
	0			e Sampled					
Wetland Hydrology Present?			withi	n a Wetlan	nd? Yes <u></u>	No _			
Remarks:									
PEM, depressional/slope wetland.									
r Livi, depressional/slope wetland.									
VECETATION . Her exicutific names of plant	4.5								
VEGETATION – Use scientific names of plan		D	:4	la di a atau	Daminana Taat want	ala a a t			
Tree Stratum (Plot size: 30 ft r	Absolute % Cover				Dominance Test works Number of Dominant Sp				
1					That Are OBL, FACW, of	or FAC	_		
2					(excluding FAC-):	=	2		(A)
3					Total Number of Domina		_		
4					Species Across All Strat	ia: _	2		(B)
Osalis a Obsat August (District 15 ft r	0	= Tota	al Cov	er	Percent of Dominant Sp		400.00		
Sapling/Shrub Stratum (Plot size: 15 ft r					That Are OBL, FACW, o	or FAC:	100.00	<u> </u>	(A/B)
1					Prevalence Index work	sheet:			
3.					Total % Cover of:		Multiply	/ by:	_
4						x 1			_
5.					FACW species 55				
_	0	= Tota	al Cov	er	FAC species 0				-
Herb Stratum (Plot size: 5 ft r	0.5			EA OVA	FACU species 8				-
1. Phalaris arundinacea	35			FACW	UPL species 0		= 0		- (5)
2. Eleocharis palustris 3 Juncus balticus	15 8			OBL FACW	Column Totals: 80	(A)	159		_ (B)
3. Juncus particus 4 Alopecurus arundinaceus	5			FACW	Prevalence Index	= B/A = _	1.99		_
5 Agrostis stolonifera	4			FACW	Hydrophytic Vegetation	n Indicato	ors:		
6 Trifolium hybridum	4			FACU	✓ 1 - Rapid Test for H	lydrophytic	: Vegeta	ation	
7 Carex praegracilis	3			FACW	<u>✓</u> 2 - Dominance Test	t is >50%			
8 Poa pratensis	3			FACU	✓ 3 - Prevalence Inde				
9. Carex pellita	2			OBL	4 - Morphological A data in Remarks				orting
10. Cirsium arvense	1			FACU	Problematic Hydrop			,	1)
20.6	80	= Tota	al Cov	er	1.	-			
Woody Vine Stratum (Plot size: 30 ft r)					¹ Indicators of hydric soil be present, unless distu				ust
1									
2	0				Hydrophytic Vegetation				
% Bare Ground in Herb Stratum 20.0	-	= Tota	ai COV	EI	Present? Yes	s	No		
Remarks:					1				
Phalaris arundinacea and Eleocharis	nalustr	is ai	re tł	ne dom	ninant species at	this s	amnl	e poi	int
	Palaoti	.5 ui		.5 4011	arre opcoico di		api	o poi	

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SOIL Sampling Point: DP07W

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 ¹	Loc ²	Texture	Remarks
0 - 4	10YR 4/2	98	10YR 5/8	2	_ <u>C</u>	M	Sandy Clay Loam	
4 - 14	10YR 3/2	93	10YR 5/8	7	<u>C</u>	М	Sandy Clay Loam	
14 - 16	10YR 4/2	90	10GY 4/1	1	С	М	Sandy Clay	
			N 2.5/0	2	С	М		Mn concentrations
			10YR 5/8	7	С	М		
-								
-								
¹Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, CS	=Covere	ed or Coat	ed Sand C	Grains. ² Loc	cation: PL=Pore Lining, M=Matrix.
			LRRs, unless other					for Problematic Hydric Soils ³ :
Histosol			Sandy G				1 cm N	Muck (A9) (LRR I, J)
	oipedon (A2)		Sandy F	-				Prairie Redox (A16) (LRR F, G, H)
Black His			Stripped					Surface (S7) (LRR G)
	n Sulfide (A4)				ineral (F1)			Plains Depressions (F16)
	Layers (A5) (LRR F	=)	•	-	/atrix (F2)		_	RR H outside of MLRA 72 & 73)
	ick (A9) (LRR F, G, I		✓ Depleted	,	` ,		`	ed Vertic (F18)
	Below Dark Surface	•			face (F6)			arent Material (TF2)
	ark Surface (A12)	- ()	· 		urface (F7	')		Shallow Dark Surface (TF12)
	lucky Mineral (S1)		Redox D			,		(Explain in Remarks)
	/lucky Peat or Peat (S2) (I RR (ressions (f	-16)		of hydrophytic vegetation and
	cky Peat or Peat (S				73 of LRI			d hydrology must be present,
	iony i out or i out (or	, (=:::: /	(,		disturbed or problematic.
Restrictive L	_ayer (if present):							
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes V No No
Remarks:								
Dromino	nt radavimar	nhia a	oncontration	c 00m	mony	vithin t	tha matrix	
Promine	iit redoxiiiioi	priic c	oncentration	S COII	IIIIOII V	VILIIIII	lile matrix	•
HYDROLO	CV							
-	drology Indicators:			,			0 1	
-		ne require	d; check all that apply				· · · · · · · · · · · · · · · · · · ·	ary Indicators (minimum of two required)
	Water (A1)		Salt Crust		(5.40)			face Soil Cracks (B6)
	ter Table (A2)		Aquatic Inv					rsely Vegetated Concave Surface (B8)
✓ Saturation			Hydrogen					inage Patterns (B10)
Water M	arks (B1)		Dry-Seaso	n Water	Table (C2)	Oxio	dized Rhizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2)		Oxidized R	hizosph	eres on Liv	ing Roots	s (C3) (w	here tilled)
Drift Dep	osits (B3)		(where r	ot tilled	I)		Cray	yfish Burrows (C8)
Algal Ma	it or Crust (B4)		Presence of	of Reduc	ed Iron (C	4)	🖊 Satı	uration Visible on Aerial Imagery (C9)
Iron Dep	osits (B5)		Thin Muck	Surface	(C7)		<u></u> ✓ Geo	omorphic Position (D2)
-	on Vis ble on Aerial I	magery (B	7) Other (Exp	lain in R	emarks)			C-Neutral Test (D5)
·	tained Leaves (B9)	- 3 - 7 (, ,		,			st-Heave Hummocks (D7) (LRR F)
Field Observ								(= / (= /
Surface Water		00	No Depth (inc	chee).				
Water Table		_	No Depth (inc				fland Llydeles	y Present? Yes V No
Saturation Pr (includes cap		es <u> </u>	No Depth (inc	nes): <u>o</u>		vvet	tiand Hydrolog	y Present? Yes No
		gauge, mo	onitoring well, aerial p	hotos, p	revious in	spections)), if available:	
Remarks:								
Evidence	of wetland hyd	rology iı	ncludes saturati	on wit	hin 8" o	f the so	il surface, g	eomorphic position, and a
positive fa	ac-neutral test.							

Project/Site: Rostad	(City/County	. Meaghe	r County	Sampling Date: 2023	-06-27
Applicant/Owner: MDT				State: Montana	. •	
Investigator(s): S Weyant, K Kane		Section, To	wnship, Ra	nge: S12 T8N R11E		
Landform (hillslope, terrace, etc.): Valley Flat					Slope (%)): O
Subregion (LRR): E 46						
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabb						
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						10
Are Vegetation, Soil, or Hydrology n				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map				ocations, transects	, important feature	es, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	o 🗸		ne Sampled in a Wetlar	Area nd? Yes	No	
Sample point is approximately 2' hig	her in e	levatio	n than t	the paired wetla	nd sample poir	nt.
VEGETATION – Use scientific names of plan	ts.					
Tree Stratum (Plot size: 30 ft r)			Status	Dominance Test work Number of Dominant S That Are OBL, FACW, (excluding FAC-):	pecies	(A)
2	<u> </u>			Total Number of Domin Species Across All Stra	_	
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total Cov	ver	Percent of Dominant Sp That Are OBL, FACW, o		_ (A/B)
2.				Prevalence Index wor		
3					Multiply by:	
4					x 1 = 0 x 2 = 0	
5					x 3 = 0	
Herb Stratum (Plot size: 5 ft r)	0	= Total Cov	ver	FACU species 95		_
1. Trifolium hybridum	85	~	FACU	UPL species 5	x 5 = 25	_
2. Bromus inermis	5		UPL	Column Totals: 100	(A) 405	(B)
3. Phleum pratense	5		FACU	Prevalence Index	- p/A - 4.05	
4. Melilotus officinalis	4		FACU	Hydrophytic Vegetation		
5. Poa pratensis 6				1 - Rapid Test for H	Hydrophytic Vegetation t is >50%	
8.				3 - Prevalence Inde		
9.				4 - Morphological A	Adaptations¹ (Provide su s or on a separate sheet	pporting)
10					phytic Vegetation ¹ (Expla	
Woody Vine Stratum (Plot size: 30 ft r) 1.		= Total Cov		<u> </u>	I and wetland hydrology	,
2	^	= Total Cov	ver	Hydrophytic Vegetation Present? Yes	s No	
Remarks: Trifolium hybridum is the dominant s	pecies	at the	sample	point.		

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SOIL Sampling Point: DP08U

Profile Desc	ription: (Describe	to the depth n	eeded to docum	nent the i	ndicator o	or confirm	the absence	of indicators.)
Depth	Matrix			C Features				
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 2	10YR 4/2	_ <u>100</u>					Clay Loam	
2 - 16	2.5Y 4/3	60					Clay Loam	Mixed matrix.
2 - 16	2.5Y 5/4	40					Clay Loam	Mixed matrix.
-								
	oncentration, D=De Indicators: (Application)					d Sand Gr		cation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol		cable to all ERI	s, unless other Sandy G					fluck (A9) (LRR I, J)
_	oipedon (A2)			ledox (S5)	. ,			Prairie Redox (A16) (LRR F, G, H)
Black Hi			-	Matrix (S				Surface (S7) (LRR G)
_	n Sulfide (A4)			∕lucky Min	,			lains Depressions (F16)
Stratified	d Layers (A5) (LRR	F)		Sleyed Ma			(LR	R H outside of MLRA 72 & 73)
	ıck (A9) (LRR F, G ,			d Matrix (F			_	ed Vertic (F18)
	d Below Dark Surfa	ce (A11)		ark Surfa				arent Material (TF2)
	ark Surface (A12)			Dark Su Depression	rface (F7)			hallow Dark Surface (TF12) (Explain in Remarks)
-	Iucky Mineral (S1) Iucky Peat or Peat	(S2) (I RR G H			ssions (F1	16)		of hydrophytic vegetation and
	icky Peat or Peat (S		-		3 of LRR			d hydrology must be present,
	,	, ,	,			,		disturbed or problematic.
Restrictive L	_ayer (if present):							
Type:			=					
Depth (inc	ches):		_				Hydric Soil	Present? Yes No
Remarks:								
No hvdri	ic soil indica	tors obse	rved. Clav	conte	nt incr	eased	with dep	th in the soil profile.
							<u> </u>	•
HYDROLO	GY							
Wetland Hyd	drology Indicators	:						
Primary India	cators (minimum of	one required; ch	neck all that apply	<i>(</i>)			Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust ((B11)			Surf	ace Soil Cracks (B6)
	iter Table (A2)		Aquatic Inv		s (B13)		Spa	rsely Vegetated Concave Surface (B8)
Saturation	on (A3)		Hydrogen S	Sulfide Oc	lor (C1)		Drai	nage Patterns (B10)
Water M	arks (B1)		Dry-Seaso	n Water T	able (C2)		Oxid	dized Rhizospheres on Living Roots (C3)
Sedimer	nt Deposits (B2)		Oxidized R	hizospher	es on Livi	ng Roots ((C3) (w	here tilled)
Drift Dep	oosits (B3)		(where n	ot tilled)			Cray	yfish Burrows (C8)
	at or Crust (B4)		Presence of		•)		uration Visible on Aerial Imagery (C9)
	oosits (B5)		Thin Muck					morphic Position (D2)
· ·	on Vis ble on Aerial	Imagery (B7)	Other (Exp	lain in Re	marks)			C-Neutral Test (D5)
<u> </u>	tained Leaves (B9)						Fros	st-Heave Hummocks (D7) (LRR F)
Field Observ			V 5 " "					
Surface Water			Depth (inc					
Water Table			Depth (inc					
Saturation Projection (includes cap		Yes No _	Depth (inc	:hes):		_ Wetla	and Hydrolog	y Present? Yes No
	corded Data (strear	n gauge, monito	oring well, aerial p	hotos, pre	evious insp	pections),	if available:	
Remarks:								
No evide	ence of wetl	and hydro	logy obsei	rved				

Project/Site: Rostad	(City/County	, Meaghe	r County	Sampling Date: 2023-06-27
					Sampling Point: DP08W
				nge: S12 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					e Slone (%): 15
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				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important features, etc.
Hydric Soil Present? Yes N	lo lo		ne Sampled nin a Wetlar		No
PEM, depressional wetland. Sample VEGETATION – Use scientific names of plan		cated	in low a	rea north of ber	m.
-	Absolute	Dominant	Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size: 30 ft r)	% Cover			Number of Dominant S	
1				That Are OBL, FACW, (excluding FAC-):	or FAC (A)
2. 3.					
4.				Total Number of Domin Species Across All Stra	_
		= Total Co	ver	Percent of Dominant Sp	necies
Sapling/Shrub Stratum (Plot size: 15 ft r				That Are OBL, FACW,	
1				Prevalence Index wor	ksheet:
2				Total % Cover of:	Multiply by:
3				OBL species 55	x 1 = <u>55</u>
4. 5.				FACW species 42	x 2 = <u>84</u>
		= Total Co	ver		x 3 = 0
Herb Stratum (Plot size: 5 ft r					x 4 = 0
1. Carex pellita	30		OBL	UPL species 0	
2. Alopecurus arundinaceus	20		FACW	Column Totals: 97	(A) <u>139</u> (B)
3. Eleocharis palustris 4. Juncus balticus	20 10		OBL	Prevalence Index	= B/A = 1.43
5. Phalaris arundinacea	10		FACW FACW	Hydrophytic Vegetation	
6. Carex nebrascensis	5		OBL	✓ 1 - Rapid Test for I	Hydrophytic Vegetation
7. Juncus ensifolius	2		FACW	✓ 2 - Dominance Tes	it is >50%
8.				✓ 3 - Prevalence Index	
9.					Adaptations ¹ (Provide supporting s or on a separate sheet)
10.					phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r	97	= Total Co			l and wetland hydrology must
1	0	= Total Co	ver	Hydrophytic Vegetation	s No
Remarks:					
This vegetation community passes t	he rapio	d test f	or hydr	ophytic vegetat	ion.

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SOIL Sampling Point: DP08W

Profile Desc	ription: (Describe	to the dep	oth needed to docur	nent the	indicator	or confir	m the absence of indic	cators.)
Depth	Matrix		Redo	x Feature	es _ 1	. ,		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 6	2.5Y 5/2	95	10YR 5/6	5	<u> </u>	M	Clay Loam	
6 - 14	2.5Y 5/2	85	10YR 5/8	15	С	М	Clay Loam	
-								
-							·	
							·	
					-		·	
			-		-	-		
					-			
	-						·	
			=Reduced Matrix, CS			ed Sand G		PL=Pore Lining, M=Matrix.
-		able to all	LRRs, unless other					blematic Hydric Soils ³ :
Histosol			Sandy (-			1 cm Muck (A9	
Histic Ep Black His	oipedon (A2)		-	Redox (St d Matrix (Coast Prairie F Dark Surface (Redox (A16) (LRR F, G, H)
	n Sulfide (A4)				neral (F1)			epressions (F16)
	l Layers (A5) (LRR I	=)	•	-	atrix (F2)		-	tside of MLRA 72 & 73)
	ck (A9) (LRR F, G, I	•	✓ Deplete	-	. ,		Reduced Verti	,
	Below Dark Surfac			Dark Surf	. ,		Red Parent Ma	aterial (TF2)
Thick Da	ark Surface (A12)		Deplete	d Dark S	urface (F7	·)	Very Shallow [Dark Surface (TF12)
Sandy M	lucky Mineral (S1)			Depressio			Other (Explain	•
	lucky Peat or Peat (essions (F		-	phytic vegetation and
5 cm Mu	cky Peat or Peat (S	3) (LRR F)	(ML	RA 72 &	73 of LRI	R H)		ogy must be present,
Postrictive I	_ayer (if present):						uniess disturbe	ed or problematic.
Type:	Layer (ii present).							
	ches):						Hydric Soil Presen	t? Yes 🗸 No
Remarks:							11,4110 00111 100011	
Promine	nt redoximoi	phic c	oncentration	s com	ımon v	vithin t	the depleted m	atrix.
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	cators (minimum of o	ne require	d; check all that appl	y)			Secondary Indic	ators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surface Soil	Cracks (B6)
_	ter Table (A2)		Aquatic In	vertebrate	es (B13)		Sparsely Ve	getated Concave Surface (B8)
<u>✓</u> Saturation	on (A3)		Hydrogen	Sulfide C	dor (C1)		Drainage Pa	atterns (B10)
Water M	arks (B1)		Dry-Seaso					izospheres on Living Roots (C3)
	nt Deposits (B2)		Oxidized F			ing Roots	(C3) (where til	led)
	oosits (B3)		(where i	not tilled)		Crayfish Bu	• •
	it or Crust (B4)		Presence			4)		isible on Aerial Imagery (C9)
-	osits (B5)		Thin Muck					Position (D2)
	on Vis ble on Aerial I	magery (B	Other (Exp	olain in R	emarks)		FAC-Neutra	, ,
	tained Leaves (B9)						Frost-Heave	Hummocks (D7) (LRR F)
Field Observ			4					
Surface Water			No Depth (in					
Water Table		_	No Depth (in					
Saturation Pr (includes cap		es	No Depth (in	ches): <u>8</u>		Wet	land Hydrology Prese	nt? Yes No
		gauge, m	onitoring well, aerial	ohotos, p	revious in	spections)	, if available:	
Remarks:								
Evidence	of wetland hvd	rology i	ncludes saturati	ion wit	hin 8" o	f the so	il surface, algal m	ats, water-stained
	•		d a positive fac-			50	541 1455, 41941 111	ato, mator otaliloa
icaves, ge	omorpine posit	, and	a a positive rac-	alia				

Project/Site: Rostad	(City/Count	_{tv:} Meaghe	er County	Sampling Date: 2023-06-27
					Sampling Point: DP09U
				nge: S12 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					ing Slone (%): 10
Subregion (LRR): E 46					
Soil Map Unit Name: 854B - Varney-Coyoteflats con					
•					·
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologys					
Are Vegetation, Soil, or Hydrologyn	aturally prol	blematic?	(If ne	eeded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sampli	ng point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes Note that the Note has a second of the Note has a seco	o		the Sampled		No V
Wetland Hydrology Present? Yes No Remarks:	o <u> </u>	Wit	iiiii a vvetiai	iu: 165	
Upland sample point.					
VEGETATION II : ('C')					
VEGETATION – Use scientific names of plan					
Tree Stratum (Plot size: 30 ft r	Absolute <u>% Cover</u>		nt Indicator ? Status	Dominance Test work	
1				Number of Dominant S That Are OBL, FACW,	or FAC
2.				(excluding FAC-):	<u>0</u> (A)
3				Total Number of Domin	nant
4				Species Across All Stra	ata: <u>3</u> (B)
0 11 (0) 1 0 1 (0) 1 15 ft r	0	= Total Co	over	Percent of Dominant S	
Sapling/Shrub Stratum (Plot size: 15 ft r				That Are OBL, FACW,	or FAC: <u>0.00</u> (A/B)
1				Prevalence Index wor	ksheet:
2.				Total % Cover of:	Multiply by:
3				OBL species 0	x 1 = <u>0</u>
5					x 2 = <u>6</u>
	0	= Total Co	over		x 3 = 0
Herb Stratum (Plot size: 5 ft r)					x 4 = 316
1. Dactylis glomerata	30		FACU	UPL species 18	
2. Poa pratensis	20		FACU	Column Totals: 100	(A) <u>412</u> (B)
3. Bromus inermis 4. Phleum pratense	15 10		UPL	Prevalence Index	a = B/A = 4.12
Tuif alices levels vistores	10		FACU FACU	Hydrophytic Vegetation	
Tavaya ayına affi sin ala	5	-	FACU	1 - Rapid Test for I	Hydrophytic Vegetation
6. Taraxacum officinale 7. Carex praegracilis	3		FACW	2 - Dominance Tes	st is >50%
8. Carum carvi	3	-	UPL	3 - Prevalence Inde	ex is ≤3.0 ¹
g. Elymus repens	2		FACU	4 - Morphological A	Adaptations ¹ (Provide supporting
10. Medicago lupulina	2		FACU		s or on a separate sheet)
	100	= Total Co	over		phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soil be present, unless disti	il and wetland hydrology must urbed or problematic.
2.				Hydrophytic	
_	0	= Total Co	over	Vegetation	s No
% Bare Ground in Herb Stratum 0				Present? Ye	3NU
Remarks:					
Dominant vegetation at the sample p	oint is	a mixt	ure of c	ommon upland _l	pasture grasses.

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SOIL Sampling Point: DP09U

Profile Desc	ription: (Describe	to the de	oth needed to docu	ment the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			ox Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 8	10YR 3/2	100	_				Sandy Clay Loam	
8 - 16	2.5Y 4/3	80	2.5Y 5/6	_ 1	<u>C</u>	<u>M</u>	Sandy Clay Loam	Mixed matrix
8 - 16	2.5Y 5/2	20					Sandy Clay Loam	Mixed matrix
-								
-								-
-					·			
_					·			
¹Type: C=Co	ncentration D=De	nletion RM	=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	rains ² l oc	cation: PL=Pore Lining, M=Matrix.
			LRRs, unless othe			od Odna O		for Problematic Hydric Soils ³ :
Histosol			Sandy				1 cm N	fluck (A9) (LRR I, J)
	ipedon (A2)			Redox (S5	. ,			Prairie Redox (A16) (LRR F, G, H)
Black His	stic (A3)		Strippe	d Matrix (S	36)		Dark S	Surface (S7) (LRR G)
Hydroge	n Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		High P	lains Depressions (F16)
Stratified	Layers (A5) (LRR	F)	Loamy	Gleyed M	atrix (F2)		(LR	R H outside of MLRA 72 & 73)
1 cm Mu	ck (A9) (LRR F, G	, H)	Deplete	ed Matrix (F3)		Reduc	ed Vertic (F18)
	Below Dark Surfa	ce (A11)		Dark Surfa	` ,			arent Material (TF2)
	rk Surface (A12)			ed Dark Su)		hallow Dark Surface (TF12)
	ucky Mineral (S1)	(00) (LDD		Depressio	. ,	:40)		(Explain in Remarks)
	lucky Peat or Peat cky Peat or Peat (\$			lains Depr				of hydrophytic vegetation and d hydrology must be present,
5 CIII WIU	cky real of real (55) (LKK F) (1911	LKA 12 Q	/3 01 LKN	. п)		disturbed or problematic.
Restrictive L	ayer (if present):							μ
Type:								
Depth (inc	:hes):		<u> </u>				Hydric Soil	Present? Yes No
Remarks:								
No bydrie	s soil indicate	are ahee	rved Clay co	ntant ir	oreass	se with	denth thro	ough the soil profile.
140 Hydric		0030	i ved. Olay co	iiiciii ii	ici casc	23 WIGH	acpui unc	ough the son profile.
HYDROLO(ev.							
		_						
_	Irology Indicators		ed; check all that app	ds ()			Casanda	ary Indicators (minimum of two required)
-	Water (A1)	one require	ed, check all that app Salt Crus					ary Indicators (minimum of two required) face Soil Cracks (B6)
	ter Table (A2)		Sait Crus		se (B13)			rsely Vegetated Concave Surface (B8)
Saturatio	, ,		Aquatic II		, ,			nage Patterns (B10)
	arks (B1)		Dry-Seas					dized Rhizospheres on Living Roots (C3)
	t Deposits (B2)		Oxidized				·	where tilled)
	osits (B3)			not tilled)		ing Roots		yfish Burrows (C8)
	t or Crust (B4)		Presence	,		1)		uration Visible on Aerial Imagery (C9)
	osits (B5)		Thin Muc		•	+)		morphic Position (D2)
	on Vis ble on Aeria	Imagery (F						C-Neutral Test (D5)
	ained Leaves (B9)		77) Outer (EX	.piaiii iii i k	omano,			st-Heave Hummocks (D7) (LRR F)
Field Observ								tricave riaminicons (B7) (ERRT)
Surface Wate		Vac	No Depth (ir	nchee).				
Water Table			No Depth (ir					
Saturation Pr			No Depth (ir				land Hydrolog	y Present? Yes No
(includes cap		165	No _ • Deptii (ii	icries)		_ •••••	iana nyarolog	y Fresent: Tes NO
Describe Red	corded Data (stream	m gauge, m	onitoring well, aerial	photos, pr	revious ins	spections),	if available:	
Remarks:								
No evide	ence of wet	and hy	drology obse	erved.				
		,						

Project/Site: Rostad	(Citv/Count	_{tv:} Meaghe	er County	Sampling Date: 2023-06-27
					Sampling Point: DP09W
				nge: S12 T8N R11E	
Landform (hillslope, terrace, etc.): Valley Floor					na Slone (%): 5
Subregion (LRR): <u>E 46</u>					
Soil Map Unit Name: 854B - Varney-Coyoteflats co					
Are climatic / hydrologic conditions on the site typical for th					
Are Vegetation, Soil, or Hydrology	-				
Are Vegetation, Soil, or Hydrology				eeded, explain any answer	
SUMMARY OF FINDINGS – Attach site map	showing	sampli	ng point l	ocations, transects,	, important features, etc.
Hydric Soil Present? Yes N	/o		the Sampled		No
PEM, depressional wetland.					
VEGETATION – Use scientific names of plan	nts.				
			nt Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 30 ft r			? Status	Number of Dominant Sp	
1				That Are OBL, FACW, of (excluding FAC-):	2 (A)
2				Total Number of Domina	
4.				Species Across All Strat	_
	0	= Total Co	over	Percent of Dominant Sp	necies
Sapling/Shrub Stratum (Plot size: 15 ft r)				That Are OBL, FACW, o	
1				Prevalence Index work	sheet:
2					Multiply by:
3				OBL species 40	x 1 = 40
5				FACW species 29	x 2 = <u>58</u>
J	0	= Total Co	over		x 3 = 0
Herb Stratum (Plot size: 5 ft r)		Total O	0 7 61	FACU species 26	x 4 = <u>104</u>
1. Carex pellita	35		OBL	UPL species 0	
2. Alopecurus arundinaceus	_ 28		FACW	Column Totals: 95	(A) <u>202</u> (B)
3. Poa pratensis	_ 15		FACU	Prevalence Index	= B/A = 2.13
4. Phleum pratense 5. Carex nebrascensis	_ 7		OBL	Hydrophytic Vegetatio	
6. Elymus repens			FACU	✓ 1 - Rapid Test for H	
7. Trifolium hybridum	- 2	-	FACU	✓ 2 - Dominance Test	t is >50%
8. Juncus balticus	- - - 1		FACW	✓ 3 - Prevalence Inde	ex is ≤3.0 ¹
9.					daptations ¹ (Provide supporting
10.					s or on a separate sheet)
		= Total Co	over		ohytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1.	_			¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must irbed or problematic.
2				Hydrophytic	
% Bare Ground in Herb Stratum 5.0	0	= Total Co	over	Vegetation Present? Yes	s No
Remarks:				1	_
Dominant species are hydrophytic.					

SOIL Sampling Point: DP09W

Profile Desc	ription: (Describe	e to the de	oth needed to doc	ument the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			dox Feature		. 2	- .	
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc ²	Texture	Remarks
0 - 6	10YR 3/2	100					Sandy Clay Loam	Fine sand grains
6 - 16	2.5Y 4/2	83	10YR 5/8	15	<u>C</u>	PL / M	Sandy Clay	
			N 2.5/0	2	С	М		Mn concentrations
-								
-								
					· ·			
			-					
	-							
-					-			
			=Reduced Matrix, (ed Sand Gr		cation: PL=Pore Lining, M=Matrix.
-		cable to al	I LRRs, unless oth					for Problematic Hydric Soils ³ :
Histosol	(A1) pipedon (A2)			/ Gleyed M / Redox (S	. ,			Muck (A9) (LRR I, J) Prairie Redox (A16) (LRR F, G, H)
Black Hi			-	ed Matrix (Surface (S7) (LRR G)
	n Sulfide (A4)			y Mucky Mi				Plains Depressions (F16)
	Layers (A5) (LRR	F)		y Gleyed M			_	R H outside of MLRA 72 & 73)
	ick (A9) (LRR F, G			ted Matrix			Reduc	ed Vertic (F18)
Depleted	d Below Dark Surfa	ce (A11)		k Dark Surf	` ,			arent Material (TF2)
	ark Surface (A12)			ted Dark S)	-	hallow Dark Surface (TF12)
	lucky Mineral (S1)	(00) (LDD		Compression	` ,	:40)		(Explain in Remarks)
	Mucky Peat or Peat icky Peat or Peat (\$		· · · — •	Plains Depr	•	•		of hydrophytic vegetation and d hydrology must be present,
5 CITI WILL	icky real of real (55) (LKK F) (I V	ILKA 12 &	73 OI LKI	х п)		disturbed or problematic.
Restrictive I	_ayer (if present):							
Type:	, , ,							
Depth (inc	ches):						Hydric Soil	Present? Yes V No No
Remarks:	·							
Dromino	nt radavima	rnhio c	oncontratio	no oom	manı	ithin t	ha danlat	ad matrix
Promine	iit redoxiiiit	л ринс с	oncentratio	iis coii	iiiioii v	VICIIIII C	ne depiet	eu maurx.
	CV							
HYDROLO								
-	drology Indicators						0 1	
-	•	one require	ed; check all that ap					ary Indicators (minimum of two required)
	Water (A1)		Salt Cru		(D40)			face Soil Cracks (B6)
_	iter Table (A2)		Aquatic					rsely Vegetated Concave Surface (B8)
Saturatio			Hydroge					nage Patterns (B10)
	arks (B1)		Dry-Sea Oxidized	son Water	•			dized Rhizospheres on Living Roots (C3)
·	nt Deposits (B2) posits (B3)			not tilled		ing Roots		rhere tilled) yfish Burrows (C8)
	at or Crust (B4)			e of Reduc		1)		uration Visible on Aerial Imagery (C9)
	oosits (B5)		Thin Mu			+)		morphic Position (D2)
	on Vis ble on Aeria	l Imagery (F						C-Neutral Test (D5)
	tained Leaves (B9)		57) Other (E	.χριαιιτ ιιτ τ	ciliaiks)			st-Heave Hummocks (D7) (LRR F)
Field Observ	<u> </u>	'						2110ava 11animiosiis (21) (21iit 1)
Surface Water		Yes	No Depth (inches).				
Water Table			No Depth (
			No Depth (and Hydrolog	y Present? Yes No
Saturation Pr								, 11000mi 100 <u> </u>
Saturation Projection (includes cap				I photos n	revious in	enections)	if available.	
(includes cap	corded Data (stream	m gauge, m	onitoring well, aeria	ii priotos, p	i Cvious ii k	эрссионо),	n avanabio.	
(includes cap Describe Red		m gauge, m	onitoring well, aeria	ii priotos, p	TCVIOUS III	,,		
(includes cap		m gauge, m	onitoring well, aeria		- CVIOUS III		n avanabie.	
(includes cap Describe Red Remarks:	corded Data (strear							neutral test. Soils moist.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad		City/County	. Meaghe	r County	Sampling Date: 2023	-06-27
				State: Montana		
Investigator(s): S Weyant, K Kane		Section, To	wnship, Ra	nge: S12 T8N R11E		
Landform (hillslope, terrace, etc.): Valley Floor		Local relie	f (concave, o	convex, none): Linear	Slope (%)	_{):} <u>10</u>
Subregion (LRR): E 46	_ Lat: 46.4	462868		Long: -110.292153	Datum: N/	AD 83
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cabl	bart compl	ex, 2 to	3 percent	slopes NWI classific	ation: Not mapped	
Are climatic / hydrologic conditions on the site typical for this	s time of yea	r? Yes	No	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrologys	significantly o	listurbed?	Are "	Normal Circumstances" p	resent? Yes N	۷o 🗸
Are Vegetation, Soil, or Hydrology r	naturally prob	olematic?	(If ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point l	ocations, transects	, important feature	es, etc.
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N Remarks:	lo		ne Sampled nin a Wetlar		No	
Upland sample point.						
VEGETATION – Use scientific names of plan	ıts.					
Tree Stratum (Plot size: 30 ft r	Absolute % Cover			Dominance Test work		
1			,	Number of Dominant S That Are OBL, FACW,	or FAC	
2.				(excluding FAC-):	0	_ (A)
3				Total Number of Domin	_	
4				Species Across All Stra	ıta: <u>2</u>	_ (B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	<u>0</u> :	= Total Co	ver	Percent of Dominant St That Are OBL, FACW,		_ (A/B)
2.				Prevalence Index wor	ksheet:	
3.				Total % Cover of:		_
4					x 1 = 0	
5					x 2 = 0	
Herb Stratum (Plot size: 5 ft r	<u> </u>	= Total Co	ver		x 3 = 0 x 4 = 220	_
1. Bromus inermis	45	~	UPL	UPL species 45		_
2. Poa pratensis	30	~	FACU	Column Totals: 100		(B)
3. Phleum pratense	15		FACU		, , ,	_ ` '
4. Elymus repens	10		FACU	Prevalence Index	·	
5				Hydrophytic Vegetation		
6				1 - Rapid Test for H 2 - Dominance Tes		
7				3 - Prevalence Inde		
8					Adaptations ¹ (Provide su	pporting
9			-		s or on a separate sheet	
10	400			Problematic Hydro	phytic Vegetation ¹ (Expla	ain)
Woody Vine Stratum (Plot size: 30 ft r) 1		= Total Co		¹ Indicators of hydric soi be present, unless distu	l and wetland hydrology urbed or problematic.	must
2 % Bare Ground in Herb Stratum	0 :	 = Total Co	ver	Hydrophytic Vegetation Present? Ye	s No	
Remarks:				l		
Bromus inermis and Poa pratensis a	re the d	ominar	nt speci	es at the sampl	e point.	

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SOIL Sampling Point: DP10U

Drofile Dece	ription: (Describe	to the death	nooded to deci-	ont the !	ndicatar	or confirm	the charge -	of indicators)
		to the depth				or commit	the absence o	or indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	<u>c Features</u> %	Type ¹	Loc ²	Texture	Remarks
0 - 10	10YR 4/2	100	00.01 (0.01)		.,,,,,		Sandy Clay Loam	
10 - 16								
10 - 16	2.5Y 5/2	100					Sandy Clay Loam	
-								
		· — — —						
		- — —						
	-							
¹ Type: C=Co	oncentration, D=Dep	letion, RM=R	educed Matrix, CS	=Covered	or Coate	d Sand Gr	ains. ² Loca	ation: PL=Pore Lining, M=Matrix.
Hydric Soil I	Indicators: (Applic	able to all LR	Rs, unless other	wise note	ed.)		Indicators for	or Problematic Hydric Soils ³ :
Histosol	, ,		Sandy G	Sleyed Ma	trix (S4)		1 cm Mu	uck (A9) (LRR I, J)
			-					rairie Redox (A16) (LRR F, G, H)
· 	• •							urface (S7) (LRR G)
		- \	-	-				ains Depressions (F16)
· 	• ' ' '	•	-	-				R H outside of MLRA 72 & 73) d Vertic (F18)
					,			rent Material (TF2)
		0 (/ (/)						allow Dark Surface (TF12)
					. ,		-	Explain in Remarks)
2.5 cm N	Mucky Peat or Peat (S2) (LRR G , I	H) High Pla	ins Depre	ssions (F	16)	³ Indicators o	f hydrophytic vegetation and
5 cm Mu	icky Peat or Peat (S	3) (LRR F)	(MLF	RA 72 & 7	3 of LRR	H)	wetland	hydrology must be present,
							unless c	disturbed or problematic.
Restrictive L	_ayer (if present):							
Type:			_					,
Depth (inc	ches):		_				Hydric Soil F	Present? Yes No
Remarks:								
No hydri	ic soil indicat	tors obse	erved Clay	conte	nt incr	-2256	with dent	h in this area of the site
i to iiyaii	io con maioa		or rou. Glay	001110		oucco	mm dopt	
	CV							
HYDROLO								
Wetland Hyd	drology Indicators:							
Primary Indic	cators (minimum of c	ne required; o	check all that apply	/)			Secondar	y Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surfa	ce Soil Cracks (B6)
High Wa	iter Table (A2)							sely Vegetated Concave Surface (B8)
Saturatio	on (A3)							age Patterns (B10)
	, ,							zed Rhizospheres on Living Roots (C3)
					res on Livi	ing Roots (nere tilled)
							,	ish Burrows (C8)
_	Indicators: (Applicable to all LRRs, unless otherwise noted.) I (A1)				-)		ration Visible on Aerial Imagery (C9)	
	Epipedon (A2) Histic (A3) Jen Sulfide (A4) Jed Layers (A5) (LRR F) Juck (A9) (LRR F, G, H) Jed Below Dark Surface (A11) Joark Surface (A12) Mucky Mineral (S1) Mucky Peat or Peat (S2) (LRR G, H) Jed Layer (if present): Jed Layer (if present): Jed Layer (If present): Jed Below Dark Surface (A11) Mucky Peat or Peat (S3) (LRR F) Jed Below Dark Surface (A11) Mucky Peat or Peat (S2) (LRR G, H) Jed Below Dark Surface (F3) Mucky Peat or Peat (S3) (LRR F) Jed Below Dark Surface (F4) Mucky Peat or Peat (S2) (LRR G, H) Jed Plains Depressions (MLRA 72 & 73 of Lege (MLRA 72 & 73 o				,		· · · · · · · · · · · · · · · · · · ·	norphic Position (D2)
		lmagery (B7)	Other (Exp	lain in Re	marks)			Neutral Test (D5)
							Frost-	-Heave Hummocks (D7) (LRR F)
			4					
Water Table								- 1
Saturation Pr		es No	Depth (inc	:hes):		_ Wetla	and Hydrology	Present? Yes No
		gauge, monif	toring well, aerial n	hotos pre	evious ins	pections)	if available.	
		J , 11101111		, pi		,		
Remarks:								
No evide	ence of wetla	and hydr	ology obsei	rved.				
		-						

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rostad		City/C	ounty:	Meaghe	er County Sampling Date: 2023-06-27
Applicant/Owner: MDT	_				State: Montana Sampling Point: DP10W
Investigator(s): S Weyant, K Kane					nge: S12 T8N R11E
Landform (hillslope, terrace, etc.): Valley Floor					
					Long: -110.292278 Datum: NAD 83
Soil Map Unit Name: 86C - Delpoint-Marmarth-Cal					
Are climatic / hydrologic conditions on the site typical for t					
	-				"Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology					
SUMMARY OF FINDINGS – Attach site map	snowing	sam	ipiing	g point i	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No		Is the	e Sampled	l Area
Hydric Soil Present? Yes	No			n a Wetlar	
Wetland Hydrology Present? Yes	No				
Remarks:					
PEM, depressional wetland.					
VEGETATION – Use scientific names of pla	nts.				
	Absolute	Dom	ninant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r	% Cover				Number of Dominant Species
1					That Are OBL, FACW, or FAC
2					(excluding FAC-): I (A)
3					Total Number of Dominant Species Across All Strata: 1 (B)
4					Species Across All Strata.
Sapling/Shrub Stratum (Plot size: 15 ft r)	0	= Tota	al Cov	er	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
1					Prevalence Index worksheet:
2					Total % Cover of: Multiply by:
3					OBL species <u>80</u> x 1 = <u>80</u>
5.					FACW species 9 x 2 = 18
	0	= Tota	al Cov		FAC species <u>0</u> x 3 = <u>0</u>
Herb Stratum (Plot size: 5 ft r	<u></u>	100	ui oov	OI.	FACU species <u>5</u>
1. Carex nebrascensis	80			OBL	UPL species 1 x 5 = 5
2. Alopecurus pratensis	8			FACW	Column Totals: <u>95</u> (A) <u>123</u> (B)
3. Elymus repens	_ 3			FACU	Prevalence Index = B/A = 1.29
4. Poa pratensis	_ 2			FACU	Hydrophytic Vegetation Indicators:
5. Camelina microcarpa	_ 1			UPL	✓ 1 - Rapid Test for Hydrophytic Vegetation
6. Carex praegracilis	1			FACW	✓ 2 - Dominance Test is >50%
7					✓ 3 - Prevalence Index is ≤3.0 ¹
8					4 - Morphological Adaptations ¹ (Provide supporting
9					data in Remarks or on a separate sheet)
10	~_	T - 4	-1.0		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1			al Cov		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.					Hydrophytic
% Bare Ground in Herb Stratum 5.0	•	= Tota	al Cov	er	Vegetation Present? Yes No
Remarks: Community in this area is transition	ina Prev	viou	ıslv i	nclude	ed more Bromus and Flymus snn

but is now transitioning to a Carex dominant community.

SOIL Sampling Point: DP10W

Profile Desc	ription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Feature			_	
(inches)	Color (moist)		Color (moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks
0 - 6	7.5YR 3/2	100					Sandy Clay Loam	
6 - 18	10YR 4/2	92	7.5YR 6/6	5	<u>C</u>	М	Sandy Clay Loam	
			5Y 5/1	3	D	М		Gravelly
-								
-				_				
			-		_			
	-				_			
			-					
					_			
			=Reduced Matrix, C			ed Sand G		cation: PL=Pore Lining, M=Matrix.
-		able to all	LRRs, unless othe					for Problematic Hydric Soils ³ :
Histosol	(A1) pipedon (A2)		Sandy (Gleyed IVI Redox (S				Nuck (A9) (LRR I, J) Prairie Redox (A16) (LRR F, G, H)
Black His				d Matrix (surface (S7) (LRR G)
	n Sulfide (A4)				ineral (F1)			lains Depressions (F16)
Stratified	Layers (A5) (LRR I	F)	Loamy	Gleyed M	1atrix (F2)		(LR	R H outside of MLRA 72 & 73)
	ck (A9) (LRR F, G ,			ed Matrix	` '			ed Vertic (F18)
	Below Dark Surfac	e (A11)		Dark Surf	` ,	`		arent Material (TF2)
	ark Surface (A12) lucky Mineral (S1)			Depression	urface (F7)	-	hallow Dark Surface (TF12) (Explain in Remarks)
	lucky Peat or Peat ((S2) (LRR		•	ressions (F	16)		of hydrophytic vegetation and
	cky Peat or Peat (S				73 of LRF			d hydrology must be present,
							unless	disturbed or problematic.
Restrictive L	ayer (if present):							
Type:								
	ches):						Hydric Soil	Present? Yes No
Remarks:								
Promine	nt redoximo	rphic c	oncentration	s com	nmon v	vithin t	he deplet	ed matrix.
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	ators (minimum of c	one require	ed; check all that appl	ly)			Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surf	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic In	vertebrat	es (B13)		Spa	rsely Vegetated Concave Surface (B8)
Saturation	on (A3)		Hydrogen	Sulfide C	Odor (C1)		Drai	nage Patterns (B10)
Water M	arks (B1)		Dry-Seaso	on Water	Table (C2)	Oxic	dized Rhizospheres on Living Roots (C3)
·	t Deposits (B2)		Oxidized F			ing Roots		here tilled)
	oosits (B3)			not tilled			-	rfish Burrows (C8)
<u> </u>	t or Crust (B4)		Presence			4)		uration Visible on Aerial Imagery (C9)
	osits (B5)	lmagamı (F	Thin Muck					morphic Position (D2) -Neutral Test (D5)
	on Vis ble on Aerial l tained Leaves (B9)	imagery (E	37) Other (Ex	piain in R	emarks)			st-Heave Hummocks (D7) (LRR F)
Field Observ	, ,						1103	Crieave Huminocks (Dr) (ERRT)
Surface Water		'es	No Depth (in	ches).				
Water Table			No Depth (in					
Saturation Pr			No Pepth (in				land Hydrolog	y Present? Yes No
(includes cap	oillary fringe)							, rrecent rec <u> </u>
Describe Red	corded Data (stream	n gauge, m	onitoring well, aerial	photos, p	revious ins	spections),	, if available:	
Remarks:								
Evidence	of wetland hyd	lrology i	ncludes geomo	rphic p	osition	and a po	ositive fac-r	neutral test. Soil is extremely
moist.								

MDT Montana Wetland Assessment Form (revised March 2008)

8. Wetland size:

9. Assessment area (AA):

1. Project Name:Rostad Ranch2. MDT Project #:STPX 002 (749)Control #:9680000

3. Evaluation Date: 06/27/2023 4. Evaluator(s): S Weyant 5. Wetlands/Site #(s): Rostad Mitigation Site

6. Wetland Location(s): i. Legal: T8N,R11E,12 ;T8N,R11E,13 **Latitude/Longitude:** 46.461326, -110.296089 : Centroid of

ii. Approx. Stationing or Mileposts:

iii. Watershed: 10

Watershed Name, County: Musselshell, Meagher

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

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	6.00
D	EM	E	SI	14.00
S	EM	E	SI	77.00
S	SS	NA	SI	3.00

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)

29.500 acres (measured)

29.500 acres (measured)

Modifiers: Excavated (\mathbf{E}), Impounded (\mathbf{I}), Diked (\mathbf{D}), Partly Drained (\mathbf{PD}), Farmed (\mathbf{F}), Artificial (\mathbf{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)

	Predomin	ant conditions adjacent to (within 500 t	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: Spotted knapweed (Centaurea stoebe) and Canada thistle (Cirsium arvense)

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	Initial Rating	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)

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 (Project Code 2022-0090125), MTNHP Environmental Summary Report for Lat 46.44560 and Long -110.26057

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):

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

Downingia laeta, Bobolink (D) - S2S3

Long-billed curlew, Mountain plover(D) -

Incidental habitat (list species)

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
S2 and S3 Species: Functional Points and Rating	.9Н	.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. Long-billed curlews and upland sandpipers were observed by MDT staff annually when irrigation is turned onto the site. Bobolinks observed at the site in 2023.

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]):	winimal (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	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)	Even			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)	Е	Е	Е	Н	Е	E	Н	Н	Е	Н	Н	М	Е	Н	М	М	Е	Н	М	М
Moderate 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 features 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 is used by deer and various bird species. Active Sandhill Crane nesting observed in wetlands in 2016, 2018, and 2019 (observed Comments: by MDT), and in 2022.

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 in AA		Permanent / Perennial					Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Opt	imal	Adec	quate	Po	or	Opt	imal	Adeo	quate	Po	or	Opt	imal	Adec	quate	Po	oor
Thermal cover optimal / suboptimal	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S
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.

1	=		N. Janes	<i>J. P</i>
Flood-prone width	Bankfull width	Entrenchment ratio (ER)	2 x Bankfull Derth	Flood-prone Width Bankfull Width
			Bankfull Dapth	, J

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			
	****	4		4					

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	1.1 to 5 a		5 acre feet		<=1 acre foot	
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])

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are n sedimentat	deliver levels nds at levels ot substantia ion, sources	ounding land s of sediment such that oth ally impaired. of nutrients o phication pres	s, nutrients, er functions Minor or toxicants,	Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.					
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>=	70%	< 7	0%		
Evidence of flooding / ponding in AA	Yes No Yes No				Yes	No	Yes	No		
AA contains no or restricted outlet	1H .8H .7M .5M				.5M	.4M	.3L	.2L		
AA contains unrestricted outlet	.9H .7M .6M .4M					.3L	.2L	.1L		

Comments: More than 80 percent of the wetlands are vegetated. A restricted outlet is located in the 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, **X 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)

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

Comments: No standing water bodies were present at the site in 2023.

14I. Production Export/Food Chain Support:

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

General Fish Habitat	General Wildlife Habitat Rating (14C.iii.)								
Rating (14D.iii.)	E/H	M	L						
E/H	Н	Н	M						
M	Н	M	M						
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		Vegetated component 1-5 acres					Vegetated component < 1 acre						
В	Hi	gh	Mode	erate	Lo)W	Hi	gh	Mode	erate	Lo)W	Hi	gh	Mode	erate	Lc)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: Mode

Comments: Moderate biological activity; qualifying upland buffer exists.

i. Discharge Indicators				i	ii. Recharge	Indicators					
X The AA is a slope wetlan	t			Χ	Permeable su	bstrate prese	ent without u	nderlying imp	eding layer		
X Springs or seeps are kno	wn or observed	t			Wetland conta	ains inlet but	no outlet				
X Vegetation growing durin	g dormant seas	son/drought			Stream is a known 'losing' stream; discharge volume decreases						
X Wetland occurs at the too	of a natural sl	оре			Other:						
AA permanently flooded	Juring drought	periods									
Wetland contains an outl	et, but no inlet										
X Shallow water table and	he site is satur	ated to the su	rface								
Other:											
ii. Rating (use the information fro	n i and ii above							1			
					etlands <u>FROI</u> R THAT IS RE						
		<u>DISCH</u>			TER SYSTEN		<u> </u>				
Criteria		1H		.7M	.4M		None .1L	<u> </u>			
Southawater Bischarge of Recharge											
Insufficient Data/Information N/A Comments: Seasonal/intermittent water regime within the AA.											
Jeasona//memilien	t water regime	Within the AA	•								
4K. Uniqueness:											
. Rating (working from top to botte	m, use the ma	trix below to a	arrive at [circle	e] the function	onal points an	d rating)					
	A A contai	no fon haa u	orm oprings	AA does n	ot contain pre	viously cited	^ ^ dooo no	t contain nro	ria valv aitar		
		ns fen, bog, w ıre (>80 yr-old			s and structur			t contain preves s or associat			
Replacement potential		or plant assoc			high or conta			l diversity (#1			
	as '	$^{\circ}$ S1" by the M	ΓΝΗΡ	associat	ion listed as " MTNHP	52° by the		moderate	,		
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 (#1		.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						_	.02	.22			
4L. Recreation/Education Pote											
. Is the AA a known or potential	rec./ed. site: ((circle) X (if 'Yes' contin	ue with the	evaluation; if '	No' then mar	'k NA a	nd proceed to	the		
overall summary and ratin	g page)										
 Check categories that apply t 	o the AA:	_Educational/	scientific stud	dy;Cor	sumptive rec	.; <u>X</u> Non-c	onsumptive	rec.;			
		_Other :									
ii. Rating:											
Known or Potential Recreation o	Education Are	ea					Known	Potential	7		
Public ownership or public eas	ement with go	eneral public	access (no	permission	required)		.2H	.15H	7		
Private ownership with genera	public acces	s (no permis:	sion require	d)			.15H	.1M]		
Private or public ownership wi	hout general	public acces	s, or requirin	ng permissi	on for public	access	.1M	.05L			
Comments: Currently no recreat									_		
General Site Notes	1 (1) 22 -		•								
General Site Notes 29.50 acres of wetland delineate	d at the mitigat	ion site in 202	3.								

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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	2.95	
B. MT Natural Heritage Program Species Habitat	Н	0.90	1	26.55	*
C. General Wildlife Habitat	М	0.50	1	14.75	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	Н	0.90	1	26.55	*
G. Sediment/Nutrient/Toxicant Removal	Н	1.00	1	29.50	
H. Sediment/Shoreline Stabilization	NA				
I. Production Export/Food Chain Support	Н	0.80	1	23.60	
J. Groundwater Discharge/Recharge	М	0.70	1	20.65	*
K. Uniqueness	L	0.30	1	8.85	
L. Recreation/Education Potential (bonus points)	L	0.05	1	1.48	
Totals: Percent of Possible Score		5.25	8.00 66%	154.88	

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; or Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; or 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; or Score of .9 or 1 functional point for General Fish Habitat; or "High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or Score of .9 functional point for Uniqueness; or X 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.

Table B-1. Rostad Ranch Wetland Mitigation Site. Comprehensive Plant Species List 2013-2023.

Scientific Names	Common Names	GP Indicator Status ⁽¹⁾
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 macrocarpa	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
Elymus repens	Creeping Wild Rye	FACU
Elymus trachycaulus	Slender Wild Rye	FACU

Table B-1. Rostad Ranch Wetland Mitigation Site. Comprehensive Plant Species List 2013-2023.

Scientific Names	Common Names	GP Indicator Status ⁽¹⁾
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum arvense	Field Horsetail	FAC
Equisetum laevigatum	Smooth Scouring-Rush	FAC
Glyceria grandis	American Manna Grass	OBL
Glyceria striata	Fowl Manna Grass	OBL
Glycyrrhiza lepidota	American Licorice	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
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	FACU
Polypogon monspeliensis	Annual Rabbit's-Foot Grass	FACW
Populus angustifolia	Narrow-Leaf Cottonwood	FACW
Populus balsamifera	Balsam Poplar	FACW
Populus tremuloides	Quaking Aspen	FAC
Potentilla anserina	Silverweed	FACW
Potentilla gracilis	Graceful Cinquefoil	FAC
Ranunculus 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

Table B-1. Rostad Ranch Wetland Mitigation Site. Comprehensive Plant Species List 2013-2023.

Scientific Names	Common Names	GP Indicator Status ⁽¹⁾
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
Thinopyrum intermedium	Intermediate Wheatgrass	UPL
Thlaspi arvense	Field Pennycress	FACU
Tragopogon dubius	Meadow Goat's-beard	UPL
Trifolium arvense	Rabbit-foot Clover	UPL
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

¹ 2020 NWPL (USACE 2020)

New species identified in 2023 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 2023



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 2023



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 2023



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 2023



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 2023



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



Photo Point 7 – Panorama; Location: West Fence Corner; Bearing 90 degrees; Year 2023



Photo Point 6
Bearing: 30 degrees

Location: West Fence Line **Year**: 2013



Photo Point 6
Bearing: 30 degrees

Location: West Fence Line ses Year: 2023



Photo Point 6
Bearing: 100 degrees

Location: West Fence Line **Year**: 2013



Bearing: 100 degrees Year: 2023



Photo Point 8
Bearing: 90 degrees

Location: West Central

Year: 2017



Photo Point 8
Bearing: 90 degrees

Location: West Central



Photo Point 9
Bearing: 240 degrees

Location: East Fence Line

Year: 2017



Photo Point 9
Bearing: 240 degrees

Location: East Fence Line

ees **Year**: 2023



Photo Point 10 Bearing: 80 degrees

Location: West Central

Year: 2017



Photo Point 10 Bearing: 80 degrees

Location: West Central

grees Year: 2023

Rostad Ranch: Transect Photographs



Transect 1: Start Bearing: 290 degrees



Location: NE Branch of site Year: 2013



Transect 1: Start Location: NE Branch of site Bearing: 290 degrees Year: 2023



Transect 1: End Bearing: 110 degrees



Year: 2013



Transect 1: End Bearing: 110 degrees



Location: NE Branch of site Year: 2023



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 Year: 2013



Transect 2: End Bearing: 310 degrees

Location: North Central

Year: 2023



Transect 3: Start Bearing: 30 degrees

Location: South Portion of site Year: 2013



Transect 3: Start Location: South Portion of site Bearing: 30 degrees Year: 2023



Transect 3: End Bearing 30: degrees

Location: South Portion of site Year: 2013



Transect 3: End Bearing: 30: degrees

Location: South Portion of site

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: 2023



Transect 4: End Bearing: 180 degrees

Location: Northwest Portion



Transect 4: End Bearing: 180 degrees

Location: Northwest Portion

Year: 2023



Data Point: DP01w

Location: NE corner of site. Veg CT 2.



Data Point: DP01u

Location: NE corner of site. Veg CT 8.

Year: 2023



Data Point: DP02w

Location: NE corner of site. Veg CT 2. Year: 2023



Data Point: DP02u

Location: NE corner of site. Veg CT 8. Year: 2023



Data Point: DP03w

Location: Near N boundary of site. Veg CT 10. Year: 2023



Data Point: DP03u

Location: Near N boundary of site. Veg CT 3. Year: 2023



Data Point: DP04w

Location: Near N boundary of site. Veg CT 10. Year: 2023



Data Point: DP04u

Location: Near N boundary of site. Veg CT 8. Year: 2023



Data Point: DP05w

Location: NW corner of site. Veg CT 14. **Year:** 2023



Data Point: DP05u

Location: NW corner of site. Veg CT 11. Year: 2023



Data Point: DP06a-w (PEM)

Location: S central project area. Veg CT 3.



Year: 2023

Data Point: DP06b-w (PSS)

Location: SE project area. Veg CT 10.



Data Point: DP06u

Location: SE project area. Veg CT 8. Year: 2023



Data Point: DP07w

Location: SW project area. Veg CT 10.



Data Point: DP07u

Location: SW project area. Veg CT 8. Year: 2023



Data Point: DP08w

Location: E-central project area. Veg CT 15.



Data Point: DP08u

Location: E-central project area. Veg CT 8. Year: 2023

Year: 2023



Data Point: DP09w

Location: Center of project area. Veg CT 10. Year: 2023



Data Point: DP09u

Location: Center of project area. Veg CT 8. Year: 2023



Data Point: DP10w project area. Veg CT 7.

Location: Feeder ditch in NE **Year:** 2023



Data Point: DP10u project area. Veg CT 8.

Location: N of Feeder ditch in NE Year: 2023